BASIC FUNCTIONS AND USER INTERFACE OF INNOMODEL – BUSINESS MODEL CREATION TOOL[1]

Evgeniya Nikolova, Veselina Jecheva

Abstract: Business model creation is a critical part of each product or service planning, defined as a plan for the successful operation of a business, identifying sources of revenue, the target customer base, products, and details of financing by graphic representation of the business model basic elements, designed as system modules. The purpose of the article is to describe the basic functionalities and user interface of the tool InnoModel, which is a part of the InnoTools instruments. InnoModel is a Web 2.0 based tool, intended for SME managers and facing the challenge of building a successful business model.

Key words: SME, Canvas, business model, tool, web based

ОСНОВНИ ФУНКЦИИ И ПОТРЕБИТЕЛСКИ ИНТЕРФЕЙС НА ИНОМОДЕЛ – СРЕДСТВО ЗА РАЗРАБОТВАНЕ НА БИЗНЕС МОДЕЛИ

Evgeniya Nikolova, Veselina Jecheva

Абстракт: Бизнес моделите са важна част от планирането на всеки продукт или услуга. Бизнес моделът се определя като план за успешното функциониране на даден бизнес, като се идентифицират източниците на приходи, целевата клиентска база, продуктите и детайлите на финансирането и други ключови фактори чрез графично представяне на основните елементи на бизнес модела, проектирани като системни модули. Целта на статията е да бъдат описани основните функции на потребителския интерфейс за инструмента InnoModel, който е част от инструментите на InnoTools. InnoModel е уеб-базиран инструмент, предназначен за мениджъри на МСП, изправени пред предизвикателството да изградят успешен бизнес модел.
Ключови думи: *МСП, Canvas, бизнес модел, инструмент, web-базиран*

Introduction

This study was done in conjunction with implementation of the contract BMP1/1.2/2370/2017 for the project “Innovations Platform and Tools for increasing the innovation capacity of SMEs in the Balkan Mediterranean Area (Innoplatform)”, financed by the EU transnational cooperation programme “Balkan Mediterranean 2014-2020”. The work methodology on business model innovations which is a subject of the paper contributes towards the implementation of the project’s objectives, namely – to develop tools and guidelines for strengthening SMEs capacities to introduce product and process innovations.

The purpose of the article is to describe the basic functionalities of user interface of the tool InnoModel, which is a part of InnoTools instruments. InnoModel is be a web-based tool, intended for SME managers and facing the challenge of building a successful business model. It outlines nine segments, which are the building blocks of the business model in a one-page canvas.

A business model is defined as a plan for the successful operation of a business, identifying sources of revenue, the target customer base, products, and details of financing [1]. For this purpose, it is necessary to have an idea of a conceptual model and a logical framework that binds the overall activity of the company [2][3]. It can be a graphic representation of the business model basic elements, designed as system modules. These elements represent the values of an organization and their interconnections. InnoModel can be applied as a strategy tool for the development of a new SME or for existing business analysis and potential improvement [4]. Because of InnoModel visual interface all SME’s aspects are

[1] The article presents some of the obtained results under project “Innovations Platform and Tools for increasing the innovation capacity of SMEs in the Balkan Mediterranean Area (InnoPlatform)”, BMP1/1.2/2370/2017.

made clear at a glance and could be easily considered by managers. By looking at the developments per module, an organization can adjust its value proposition and structurally improve its strategy. This is especially important under the globalization, the ongoing financial, economic and demographic crisis and their impact on conditions for doing business in the region. [5].

InnoModel tool comprises the 9 basic building blocks, used for describing the business model various aspects. Its purpose is to SMEs to question themselves in respect of their business with regard to the topics and to post the answers into the correlating block of the proposed canvas.

Innomodel basic functions

InnoModel basic functions are described as follows:

1. New model – creates an empty model
2. Open model – opens a previously created model by user
3. Open template model - opens a previously created template model with preliminary saved thematic question for every block and element.
4. Edit model – each module could be zoomed and opened in a separated window. The user could enter / edit / delete the data, including additional matrices, containing SWOT analysis, different factors weights, etc. The matrices are non-mandatory options, aiming at user better understanding of various factors, influencing business model analysis. InnoModel will grant users option to connect the matrices with other InnoTools modules as follows:

- Link with SWOT Analysis [6][7] - opening the results of the SWOT Analysis in a separate window, to help the user to fill the segments of the model
- Link with Customer Journey Map - opening of the results of the Customer Journey Map in a separate window, in order to fill the segments of the model
- Link with Innovation - opening of the results of the Innovation in a separate window
- InnoModel will have the following sub-functions:
- Adding a note (block descriptor)
- Editing a note
- Deleting a note
- Moving a note (drag and drop) through a block
- Coloring/recoloring a note
- Connecting/ reconnecting notes with an arrow. The arrows could be of different kind (normal, dotted, dashed, etc.) and color, with purpose to outline different clusters of elements and interconnections.
- Resize, Zoom, Full screen of canvas, block, note, record, footnotes etc.
- Add footnotes (comments) for every block, note, remark
- Mark notes with priority number
- Show/hide note/s (all, by color, priority etc.)

5. Save model – saves the current model
6. Print model – prints the current model
7. Export model – in pdf or graphical format
8. Mark model as a version (baseline) in order to save model history
9. Compare models/versions – outlines the differences between 2 selected models
10. Share model – enables collaborative work on the current model. The user could invite another user(s) by e-mail to read and/or to edit the model
11. Record a history for every model (similarly to Google Docs, tracking the user and time of changes)
12. Delete history of some model history record
13. Make a document public or private
14. Block/notes tree graph view
15. Rearranging a block/notes tree graph

Customer segments

1. Label. Value: the different groups of people or organizations an enterprise aims to reach and service
2. Description.

Types:

– Textboxes one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Size.

Type: Radio buttons (user chooses 1 option):

– Small;
– medium;
– large

4. Types.

Type: Checkboxes (user chooses 1 or more):

– Mass market;
– Niche market;
– Segmented market;
– Diversified market;
– Multi-sided platform

For analysing customer segments users have to find out whether competing companies unify customer needs and create a mass product, or divide them into groups according to some criteria, or adapt product or service according to individual needs. For this purpose, the following table is completed in this segment.

Table 1. Evaluating Customer segments module

Customer segments	Number of companies	Share of using /%/
Niche market		
Segmented		
Mass market		
Diversified		
Multi-sided		
sum		

Users should fill numerical data (positive values between 0 and 100). The last cell of the third column is control - the value should be 100%.

Customer relationships

1. Label. Value: products and services that create value for a specific customer segment
2. Description.

Field Types:

– Textboxes one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Type of product.

Field Type: Radio buttons (user chooses 1 option):

– new offer;
– change of existing

4. Types

Field Type: Checkboxes (user chooses 1 or more options):

– Newness;
– Performance;
– Customization;
– Getting the job done;
– Design;
– Brand/Status;
– Price;
– Cost Reduction;
– Risk Reduction;
– Accessibility;
– Convenience/Usability

For analysing relationships with customers users have to specify the degree and form of cooperation between enterprises and customers. Companies could label no more than two of the most used types. Each distribution channel and communication tool are dependent on the customer relationship. For this purpose, the following table is completed in this segment:

Table 2. Customer relationships Evaluation

Customer relationship	Share /%/
Personal assistance	
Dedicated personal assistance	
Automated services	
Self-services	
Communities	
Co-creation	
sum	

Users should fill numerical data (positive values between 0 and 100). The last cell of the second column is control - the value should be 100%.

Channels

1. Label. Value: How a company communicates with and reach its customer segments to deliver a Value Proposition
2. Description.

Field Types:

– Textboxes one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Purpose

Field Type: Checkboxes (user chooses 1 or more options)

– raising awareness;
– help to evaluate products;
– purchase;
– deliver;
– post-purchase service

4. Service design

Field Type: Checkboxes (user chooses 1 or more options)

– connect & attract;
– orient;
– interact;
– extend & retain;
– advocate

5. Ownership.

Field Type: Radio buttons (user chooses 1 option):

– Own;
– rented

6. Channel type.

Field Type: Radio buttons (user chooses 1 option):

– Direct;
– Indirect

Companies look for channels that could deliver product or service to the customer in good quality, efficiently and at reasonable cost. The channels are divided into two groups – direct, when a company owns the channel or indirect, when the channel is outsourced. The table in this segment allows the user to determine the proportion of the types of channels that will be used.

Table 3 Direct or indirect channels evaluation

Type	Share /%/
Direct channels	
Indirect channel	
Combination	
sum	

Users should fill numerical data (positive values between 0 and 100). The last cell of the second column is control - the value should be 100%.

Table 4 in this module allows the user to determine the frequency of using different types of channels.

Table 4. Distribution channels evaluation

Type	Share /%/
Salesman	
Store	
Intermediator	
Website	
Hotline	
Exhibitions/fairs/conferences	
Direct mail	
sum	

Users should fill numerical data (positive values between 0 and 100). The last cell of the second column is control - the value should be 100%.

Key Partnerships

1. Label. Value: the network of suppliers and partners that make the business model works
2. Description.

Field Types:

– Textboxes - one or more, for free text writing (button ‘+’ for one more textbox adding).

– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Types

Field Type: Checkboxes (user chooses 1 or more options)

– strategic alliances between non-competitors;
– cooperation with competitors;
– joint ventures to develop new business;
– buyer-supplier relationships to assure reliable supplies

Revenue Streams

1. Label. Value: the cash a company generates from each customer segment
2. Description.

Field Types:

– Textboxes - one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Pricing mechanism.

Field Type: Checkboxes (user chooses 1 or more options)

– asset sale;
– usage fee;
– subscription fees;
– ending/renting/leasing;
– licensing;
– brokerage fees;
– advertising

Value added is an additional tool for companies which want differentiate themselves from each other and thus create a competitive advantage. Value added could be connected to the product itself (quality, brand), could be formed directly in the purchase (accessibility, cost) or customer experiences it after buying (cost reduction, risk reduction). This assessment is made using the following table:

Table 5. Dividing values according to phases of selling process

Before purchasing	During purchasing	After purchasing
quality …… %	price …….. %	cost reduction ……. %
adaptation …….. %		
brand …….. %	accessibility …… %	risk reduction ……. %
production power …… %		
novelty ……. %	comfort …….. %	
design …….. %		

Users should fill numerical data (positive values between 0 and 100).

As revenues represent one of the most important blocks of the business models, SMEs could select a maximum of three key revenue streams. The assessment could be made using the following table:

Table 6. Revenue streams evaluation

Types	Share /%/
Selling of products	
Selling of services	
Rent/leasing	
Fees for the use	
Advertisement	

License	
Brokerage fees	
Subscription	
Other	
sum	

Users should fill numerical data (positive values between 0 and 100). The last row will contain the sum of all the rest (100%).
The choice of payment methods could be made using the following table:
Table 7. Payment forms choice

Types	Share /%/
Transfer/deposit account	
Cash	
Debit or credit card	
Check	
Food vouchers	
Cash on delivery	
Barter	
sum	

Users should fill numerical data (positive values between 0 and 100). The last cell of the second column is control - the value should be 100%.

Cost Structure

1. Label. Value: all cost incurred to operate a business model
2. Description.

Field Types:

– Textboxes - one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Types.

Field Type: Checkboxes (user choose 1 or more options)

– cost-driven;
– value-driven;
– fixed costs;
– variable costs;
– economies of scale;
– economies of scope

In the module cost structure users can analyse the highest costs of running businesses. Regarding these costs SMEs can be divided into two groups:

– The first one consists of cost-controlled enterprises, which minimize the costs.
– The second one is value-driven, which is primarily focused on value creation.

Overview of costs of activities and resources can be accomplished using the next table:
Table 8. Costs of key resources and activities evaluation

The most costly activities	Share /%/	The most costly resources	Share /%/
Production/operation		Machines and technologies	
Input logistics, purchasing, warehousing		Workers	
Sale support, customer services		Material	
Sale and marketing		Buildings	

Research and development		Lands (location and infrastructure)	
Other		Finance	
Logistics		IT	
Education		Sale network	
Innovations		Managers	
Service		Knowledge and experiences	
Building		Energy	
Corporate culture		Brand and reputation	
Consulting		Other	
Output logistics, warehousing, distribution			
Communication with customers			

Users should fill numerical data (positive values between 0 and 100).

Key Resources

1. Label. Value: the most important assets required to make a business model works
2. Description.

Field Types:

– Textboxes - one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Types.

Field Type: Checkboxes (user chooses 1 or more options)

– Physical;
– Intellectual;
– Human;
– Financial

The key resources define the part of a company whose existence is necessary for creating value and its level of quality affects the quality of the product or service. Resources could be evaluated using the method VRIO [8]:

Table 9. Key resources evaluation

Resource	V	R	I	O	Average	IS	O by IS
Knowledges and experiences (know how)							
Brand and reputation							
Sale network							
Machines and technologies							
IT							
Managers							
Finance							
Lands (location, infrastructure)							
Workers							
Buildings							

Legend: V - value, R - rarity, I – imitability, O -organization, VRIO scale: 0 - and are not needed, 1 - local level 2 - regional level, 3 - national level, 4 - Central European level, 5 - European level, 6 - the world level, IS – importance of sources (1 - least important, 7 - the most important), O by IS - order of significance of source (Figure 1)

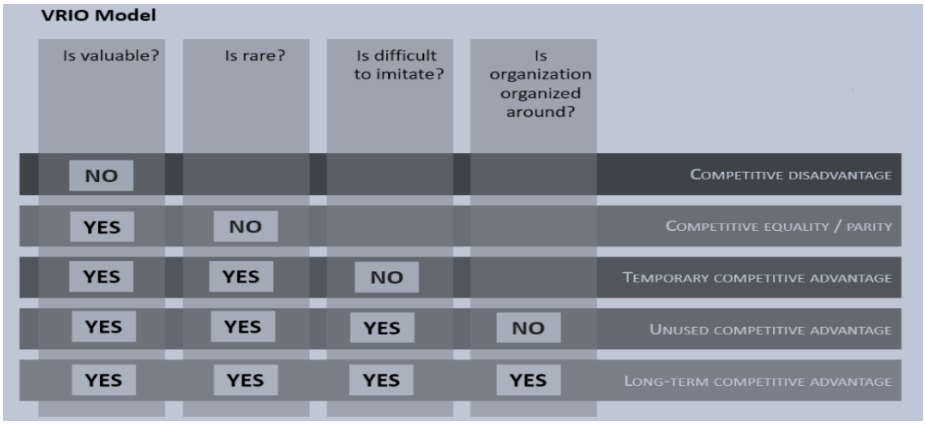

Figure 1. VRIO Model

An easy way to identify such resources is to look at the value chain and SWOT analysis. The users can identify them by asking the following questions:

– Which activities lower the cost of production without decreasing perceived customer value?
– Which activities increase product or service differentiation and perceived customer value?
– Have your company won an award or been recognized as the best in something? (most innovative, best employer, highest customer retention or best exporter)
– Do you have an access to scarce raw materials or hard to get in distribution channels?
– Do you have special relationship with your suppliers? Such as tightly integrated order and distribution system powered by unique software?
– Do you have employees with unique skills and capabilities?
– Do you have brand reputation for quality, innovation, customer service?
– Do you do perform any tasks better than your competitors do? (Benchmarking is useful here)
– Does your company hold any other strengths compared to rivals?
– Finding rare resources:
– How many other companies own a resource or can perform capability in the same way in your industry?
– Can a resource be easily bought in the market by rivals?
– Can competitors obtain the resource or capability in the near future?
– Finding costly to imitate resources:
– Do other companies can easily duplicate a resource?
– Can competitors easily develop a substitute resource?
– Do patents protect it?
– Is a resource or capability socially complex?
– Is it hard to identify the particular processes, tasks, or other factors that form the resource?

In order to find out if the company is organized to exploit these resources, the users have to give answer to the following questions:

– Does your company have an effective strategic management process in organization?
– Are there effective motivation and reward systems in place?
– Does your company’s culture reward innovative ideas?
– Is an organizational structure designed to use a resource?
– Are there excellent management and control systems?

The key capability defines those characteristics of a firm that directly affect the quality of the competitiveness model. The user may evaluate of capabilities with VRIO method [9].

Table 10. Key capabilities evaluation

Capabilities	V	R	I	O	Average	IS	O by IS
Innovation							
Speed							
Cooperation between							

departments							
Learning							
Company culture							
Communication							
Management system							
Cooperation inside the departments							
Social atmosphere							

Legend: V - value, R - rarity, I – imitability, O -organization, VRIO scale: 0 - and are not needed, 1 - local level 2 - regional level, 3 - national level, 4 - Central European level, 5 - European level, 6 - the world level, IS – importance of sources (1 - least important, 7 - the most important), O by IS - order of significance of source

The user completes the tables using the results of the appropriate modules on the InnoModel. An opportunity is provided to import results from the appropriate analyzes.

Key Activities

1. Label. Value: the most important things a company must do to make its business model works
2. Description.

Field Types:

– Textboxes - one or more, for free text writing (button ‘+’ for one more textbox adding).

– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Types.

Field type: Checkboxes (user chooses 1 or more options)

– Production;

– Problem Solving;

– Platform/Network

The key activities co-create value of product. According to Porter value chain, they are divided into primary, which directly create the product, and secondary, which help to improve it. Their evaluation is carried out with the following two tables:

Table 11. Primary activities evaluation

Primary activities	Number of companies	Share /%/
Sale and marketing		
Production/operation		
Sale support and customer services		
Input logistic, purchasing, warehousing		
Output logistics, distribution		
sum		

Table 12. Secondary activities evaluation

Secondary activities	Number of companies	Share /%/
Technology: research, development, technical preparation		
Management and development of human resources		
Infrastructure: planning, finance, IS/IT, law services		
Procurement		
sum		

Users should enter numerical data (positive numbers between 0 and 100). The last cell of the third column is control - the value should be 100%.

Some of activities are often outsourced to experts. The next table allows users to evaluate outsourced resources

Table 13. Outsourcing of resources and activities evaluation

Outsourced resources	Share /%/	Outsourced activities	Share /%/
Material		Input logistic, purchase, warehousing	
Machines and technologies		Production/operation	
Finished products		Sale and marketing	
Knowledge and experiences		Logistics	
Finance		Sale support and customer services	
IT		Research and development	
Sale network		Output logistics, warehousing, distribution	
Buildings		Guidance	
Workers		Service	
Brand and reputation		Education	
Location and infrastructure		Other	
Managers			
Other			

Users should enter numerical data (positive numbers between 0 and 100).

Customer Relationships

1. Label. Value: the type of relationship a company establishes with specific customer segments
2. Description.

Field Types:

– Textboxes - one or more, for free text writing (button ‘+’ for one more textbox adding).
– ListBox, containing all entered elements. When user hovers the mouse one of the description elements, buttons “Edit” and “Delete” will appear. The description elements will be draggable so user could easily rearrange them.

3. Driven by:

Field Type: Checkboxes (user chooses 1 or more options)

– Customer Acquisition; Customer Retention; Boosting Sales;

4. Types.

Field Type: Checkboxes (user chooses 1 or more options)

– personal assistance; dedicated personal assistance; self-service; automated services; communities; co-creation.

Structured in this way, InnoModel will provide an opportunity for company management to better understand the links between the key elements of their companies based on a working scientific approach. Here is the place of the CE experts, with training and specialized assistance, links with scientific clusters from higher education institutions and prominent specialists in the field [10]. The goal is - InnoModel to be useful tool available to specialists from different fields, especially for managers who have not studied economic and management sciences [11].

Conclusion

After the implementation of the above-mentioned structure, the web-based InnoModel tool main screen look as follows (Figure 2):

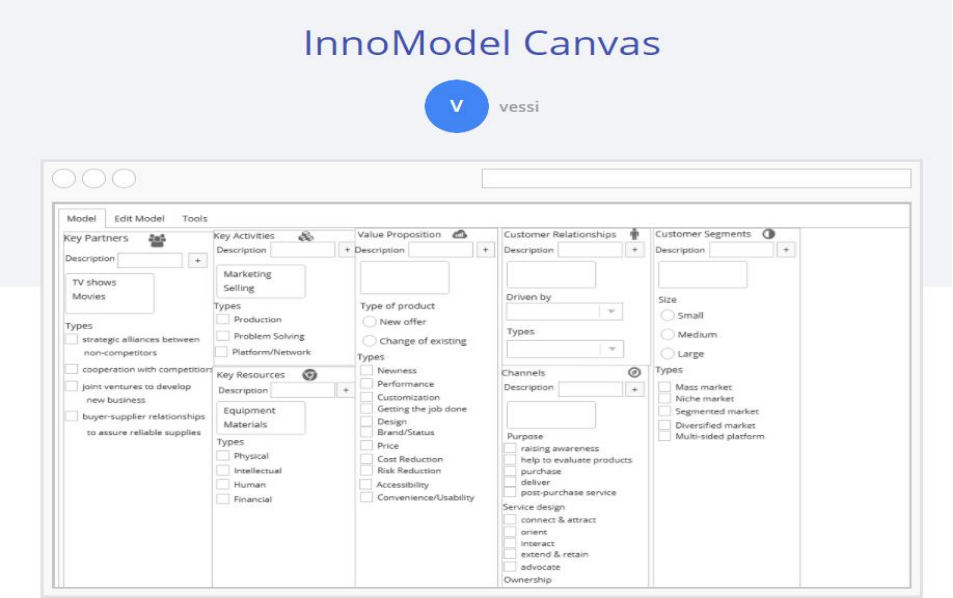

Figure 2. InnoModel Screen

The user interface prototype is accessible through the following link: http://www.innoplatform.eu/index.php/en/innotoolsselectpath/bcmallrec

In practice, one of the InnoTools has been implemented. Various assistive modules, analytical, reference, etc. can be further developed.
The tool can be used defined for creating various experimental business plans, and selection of the optimal one based on preliminarily defined criteria, for the successful operation of a business, identifying sources of revenue, the target customer base, products, and details of financing by graphic representation of the business model basic elements, designed as system modules.

References:

[1]. Baden-Fuller, C., & Mangematin, V. (2013). Business models: A challenging agenda. Strategic Organization, 11, 418–427. doi:10.1177/1476127013510112
[2]. А, Тошков, Я. Желев, Е. Николова, М. Монова-Желева Развитие на икономика, базирана на знания и иновации чрез изграждане на Офис за Технологичен Трансфер: Необходимост, концептуален модел и логическа рамка (първа част), Конференция на ОТТ, “Иновационни технологии за развитие на бизнеса в Югоизточен регион” , 2015, ISSN: 1314-7846
[3]. Angel Toshkov, Connection between high-school education and curriculum design of bachelor degree of computer sciences, computer systems and technologies and telecommunications systems and technologies, ICERI2011, Madrid, 14-16 November 2011, Spain, Madrid, ISBN 978-973-703- 697-1, p.p. 6763-6768
[4]. Zhelev, Y., Toshkov, A., Nikolova, E., & Zheleva, M. (2015). Бизнес конкурентноспособност чрез наука с помощта на ОТТ. Компютърни науки и комуникации, 4(2), 67-95. изтеглен на от https://csc.bfu.bg/index.php/CSC/article/view/97, ISSN: 13147846
[5]. Angel Toshkov, “The quality of teaching and the quality of management - key factors for the success in the crisis”, GEBA 2011, Alexandru ioan cuza university of Iasi, Iasi, Romania, October 20-22, 2011, ISBN 978-973-703-697-1, p.p. 164-168
[6]. Terry Hill, Roy Westbrook, SWOT analysis: It's time for a product recall, Long Range Planning, Volume 30, Issue 1, February 1997, Pages 46-52.
[7]. Emet Gürel, Merba Tat, SWOT analysis: a theoretical review, The Journal of International Social Research, Volume: 10 Issue: 51, August 2017
[8]. https://www.strategicmanagementinsight.com/tools/vrio.html
[9]. https://www.toolshero.com/strategy/vrio-analysis/

[10]. Angel Toshkov, "Influence of globalization of knowledge over the quality of teaching students in Bachelor degrees who are studying in the fields of informatics, computer technics and communication technologies", ICERI2011, Madrid, 14-16 November 2011, Spain, Madrid, ISBN 978-973-703-697-1, p.p. 6752-6756
[11]. Angel Toshkov, "Globalization, the ongoing financial, economic and demographic crisis and their impact on the quality of university education in Bulgaria", GEBA 2011, Alexandru ioan cuza university of Iasi, Iasi, Romania, October 20-22, 2011, ISBN 978-973-703-697-1, p.p 159-163.