Innovative Instrument, Classification, Model and Methodology for Strategic Modeling for Technology New Ventures

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Abstract— This work presents the results from a research in the field of strategy modeling for technology new ventures in its final stage – presenting an innovative e-system for strategy modeling for technology new ventures (technology startup companies) developed by the author. The innovative methodology for strategy modeling for technology new ventures is developed following a developed by the author innovative algorithm for strategy modeling for technological startup companies and number of instruments and process modifications implemented in the system in the strategic modeling process. The algorithm and all included in the system instruments and modifications in the process, have been confirmed by a research, conducted amongst 153 participants (136 from Bulgaria and 17 from other countries). The presented system is aimed towards introducing a unified system for strategic modeling, including a smooth transition between the processes of strategic analysis, strategic formulation and strategic implementation. This is achieved by: (1) introducing an unified instrument for strategic analysis and identification of the key characteristics and competitive advantages for the companies, developed by the author; (2) application of a threedimentional framework for categorisation of the basic typological strategies for technology new ventures, together with further full development of the typological strategies, based on a modified model and process of balanced scorecard methodology, developed by the author and (3) a process guiding the entrepreneurs from typological strategies characteristics towards concrete strategies characteristics and activities for their technology new ventures, which represents a smooth transition towards the next stage of strategic management – the strategic implementation stage. The presented innovative e-system can be used as a basis for further development of the innovative e-system for strategy modeling towards a full strategic management e-system, specifically designed for technology new ventures, covering all stages of the strategic management process.

Keywords— strategic, modeling, management, e-system, research, technology new ventures, technology, entrepreneurship, strategies, canvas, methodology

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I. INTRODUCTION

THIS paper is presenting the results from the research on creating an innovative methodology and supportive e-system for strategic management for technology new ventures. The paper includes the following results, developed by the author: (1) innovative strategy identification and analysis modeling canvas (SIAMC canvas), developed by the author, including questions for each category in the instrument, as well as developed process of its usage; (2) developed 3D+ strategic classification matrix (SIA Clasification Matrix – Strategy identifying and analysing Classification Matrix), based on Porter's Generic Strategies (4 typological strategies), Ansoff's Product-Market Matrix (4 typological strategies) and a 3D matrix for strategic classification of S. Peng and Z. Bae (7 typological strategies).Differing from the upper mentioned inspirational classifications, however, the created by the author SIA Classification Matrix is offering 10 typological strategies, developed specifically for technology new companies, but also applicable to wider set of startup companies; (3) a definition of the typological visions of the typological strategies, defined in step (2); (4) An innovative model of the classical Balanced Scorecard Methodology (Financial perspective, Client's Perspective, Internal Processes perspective, Learning and Growth perspective) with additional perspective - Product perspective, added by the author, as a result from the conducted research. (5) full developed tables of all 10 typological strategies for technology new ventures (based on research about the strategic advantages and strategic threads of the company, connected with the visions of the typological strategies). The tables are created according the Balances Scorecard methodology, with the enriched by the author model; (6) An enriched process for creating of company-specific table of strategic choices with additional categories for creating of a specific company strategy for the companies, based on the common table of strategic choices from step (5); (7) description of the entire process of strategic modeling, offered by the author and (8) presenting of an innovative e-system for strategic modeling for technology new ventures, based on the described processes and tools. The e-system is called Strategy Identifying and Analysing Modeling System (SIA MS), which is part of a further development of an entire strategic management system for technology new ventures.

II. PROBLEM FORMULATION

The existing tools and instruments in strategic management are having difficulties in their application for startup companies, due to the fact that (1) they are not specifically designed for such kind of companies, (2) there are many tools and many times the information between them is overlapping, (3) startup team members usually are not ackquinted with all the tools and sometimes they don't find them useful. This is very true for strategic analysis tools, but also for strategic modeling tools as well. The most famous ones is Porter's Generic Forces Classification of strategies. It is true, but for technology new ventures it is not sufficient. There are currently emerging some good instruments, developed specifically for startup companies, such as Business Model Canvas, Lean Methodology, etc., which are parts of the overall strategic management of the company, but problem with strategic modeling is still unsolved at general.

What is proposed in this article is the result of a 4 year long research of the author in the field of strategic management for technology new ventures, and specifically for the second part of the management process – strategic modeling. The current article is proposing an innovative algorythm for developing of an e-system, supporting the process of strategic modeling for technology new ventures (technological start-up / entrepreneurial companies). The algorithm is based on a research amongst 153 entrepreneurs (136 from Bulgaria and 17 from other countries), an innovative modeling process, proposed by the author, a classification of the basic typological strategies, verified with research by the author, an updated model by the author of the balanced scorecard methodology and integration of developed by the author strategy identifying and analysing modeling canvas, as well as integration of all upper mentioned parts in the overall process of strategy modeling, realised through an online innovative strategic modeling e-system, which also will be presented in the current research.

III. PROBLEM SOLUTION

The current article is based on research amongst 153 entrepreneurs in the technology sphere, and presents the outcomes and the results from this research. The presented results from the research are extracted by using IBM SPSS Statistics 19 and IBM SPSS Modeler 14.

A. Overall process

The overall process of strategic management is applicable for technology new ventures. The place of strategic modeling process is at the second step of the process. The proposed model of the overall process was remodeled by the author, based on the implemented research.

Figure 1. Strategic management overall model, proposed by the author.

The focus of this article are the first two subprocesses in the strategic management process – strategic analysis and strategic modeling processes, which are including:

- Research and analysis on the classical strategic management tools usage (implemented by the author)
- Innovative Strategic Analysis Tool for technology new ventures – SIAMC canvas (developed by the author)
- Innovative Typological Classification Matrix – SIA Matrix (developed by the author)
- Enriched Balanced Scorecard Model with five perspectives (developed by the author)
- Developed typological strategies tables of strategic choices (developed by the author)
- Innovative process for creating company-specific strategies for technology new ventures, based on the provided typological strategies tables of strategic choices from the previous step

B. Classical strategic analysis tools – research and results

In the process of research, a selection of the most important classical strategic analysis tools for technology new ventures was made and the research was implemented on those tools. The research was implemented with duration of 12 months amongst 153 entrepreneurs from the technological sphere (136 from Bulgaria and 17 from other companies). The research was implemented as a questionaire and the data was processed with IBM SPSS Statistics 19 and IBM SPSS Modeler 14.

The research included 63% men and 37% women. Amongst all participants 65% have a previous formal education in the field of entrepreneurship and management, 15% have non-formal, standalone, education, and 20% have no such education. The results, however, show that only 41% of the participants in the research are using strategic analysis tools, 18% of them – sometimes and 41% of them are not using strategic analysis tools in their entrepreneurial activity. The results on figure 2 are showing the levels of usage of the following tools: SWOT analysis, PEST analysis, GAP analysis, Unique Selling Proposition analysis, Business Model Canvas and Balanced Scorecard Methodology. Although the last two are also in the next steps in the strategic management process, their importance is high also for developing the tools and processes in the current research, and for this reason they were included in this important part of the research.

Figure 2. Results from the research on the usage of strategic analysis tools in technology startup companies' activity (implemented by the author)

The results of the research show that SWOT analysis tool and Business Model Canvas are the most used tools by entrepreneurs. This will be used for the next steps in the modeling process.

The next step from the research was extracting the most important elements from all chosen strategic anaysis instrument (due to overlapping of information between some of the tools) and researching their levels of importance according the entrepreneurs in the technology sphere. The results are showing the elements with highest priority according the participants.

Figure 3. Elements of the classical strategic analysis tools with higher level of importance according the participants in

the research (implemented by the author)

The research showed very high levels of preference of type "high importance" and "average importance", which will be used as a basic of the modeling process if an innovative analysis tool.

After identifying the most important elements from the strategic analysis tools, the research is followed by defining of innovative process of strategic analysis for technology new ventures, using the innovative strategic analysis tool type of canvas.

C. Innovative strategy identifying and analysing modeling canvas (SIAMC)

The next step in the process was defining of an innovative strategic analysis canvas containing the following fields: (1) Clients; (2) Product or Value proposition; (3) Mission; (4) Strategic goals; (5) Competitors; (6) Necessary resources; (7) Market scope; (8) Pricing and revenue streams; (9) Key competences; (10) Key partners; (11) Channels of distribution.

Based in the current research and following the example of Business Model Canvas, the following innovative tool was created Strategic identifying and analysing modeling canvas (SIAMC tool).

Figure 4. Strategy identifying and analysing modeling canvas (SIAMC) (developed by the author)

Next step in the process was creating supportive questions for each of the parts in the modeling canvas, which are aimed at supporting and easing the usage of the tool from the entrepreneurs. The qestions are visible on figure 4. After definng the questions, the final step was defining a process of work with the tool. The process is based on the developed by Lafley and Martin process of strategic analysis and modeling, by taking three of the five steps of the model, those which are most suitable for the tool and as a result, the following A-B-C process was created: Define the borders of competition (A); Define your competitive advantage (B); Define your actions to achieve your goals (C). Further work on the process was made, by defining the belonging of each of the elements of the canvas to one of the steps in the process and by ordering the categories in the process of their usage. This is shown on Table 1.

Table 1. A-B-C process of work with the canvas, including sequence and belonging of the categories to the steps in the process (developed by the author)

Figure 5. Sequence of work with the categories of SIAMC tool (developed by the author).

With this step the process of developing an innovative strategic analysis process for startup companies, based on the implemented research is complete.

The next step in the process is defining of innovative strategy classification framework for technology new ventures.

D. Strategy classification framework - Strategy identifying and analysing classification matrix (SIA Matrix)

Strategic classification basic tools, part of the calssical strategic management process are: Porter's Generic Strategies and from the Marketing Strategies – Ansoff's Product-Market Matrix. They are still giving directions for all types of companies and are also applicable for startup companies, but for technology new ventures it is not enough. Another interesting classification framework is developed by S. Peng and Z. Bae. This is a 3D framework, based partially on the previously mentioned tools, consisting of three directions: technological innovation capabilities of the company, market maturity and market scope. According their strategies classification, implemented for Korean developed companies, there are 7 types of typological strategies for the companies. The proposed by the author in this article strategic classification model is based on the upper mentioned three classification frameworks. The basic directions are:

(1) Technological innovative capabilities of the company (from Z. Bae framework and from Ansoff's Product-Market Martix – level of innovativeness of the product (i.e. startup company)) = {"innovator" "follower"}

(2) Market Scope (from Z. Bae framework and Porter's Generic Strategies) = {"global market – continent, world", "local market – country, city"}

(3) Market Maturity (from Z. Bae framework and Ansoff's Product-Market Matrix) = {"new (emerging) market", "existing market"}

(4) Source of competitive advantage (from Porter's Generic Strategies) = {"price", "differentiation"}

Figure 6. New strategic classification framework is a combination of Porter's Generic Strategies and Ansoff's Product-Market Matrix

The new strategic framework is classifying strategies according the following process: (1) initial classification is made according technological innovative capabilities of the company, market scope and market maturity. After defining the eight basic typological strategies, additional strategic classification was made on each of them according the forth criteria source of competitive advantage. The research showed that only for the typological strategies, for which the level of innovative capacity of the company is loq anf they are operating on existing market (local or global), the situation is identical with the classical Porter's generic strategies and for this reason the classical typological strategies are applied there, according the source of competitive advantage. In this way there are 10 typological strategies, offered by the current strategy identifying and analysing classification matrix (SIA Matrix).

Figure 7. Proposed by the author 3D+ Strategy identifying and analysing classification matrix (SIA Matrix) – 2D presentation of the model

$$NVTS = f(IC, MS, MM, SCE) \qquad (1)$$

The chosen axes in the categorisation were checked for relation during the implemented research

The next step in the process of strategic modeling, proposed by the author, is development of the typological strategic visions according the proposed classification model.

E. Definitions of the typological visions of the typological strategies according SIA Matrix

There are ten basic typological strategies for technology new ventures, verified through a research by the author, amongst 153 entrepreneurs, which are divided based on four dimensions – the level of innovativeness of the company, the scope of the market they are operating on, the type of the market (new market – existing market) and the source of competitive advantage (which proved to be dividing factor only for G4 and L4 types of typological strategies). All typological strategies have common (for each type) directions of development, common key success factors and common strategic threads in front of their development. These factors are included in the algorythm, based on the results of the implemented research and are showing results, confirming the suitability of the chosen dimensions [7]. After the research was implemented, models of the strategies were created with IBM SPSS Statistics 19 and IBM SPSS Modeler 14. The results in the formulation of visions for the strategies and later models of developed strategies are listed below.

The ten typological strategies in the developed 3D+ classification according SIA Matrix are: (names of the typological strategies)

G1 – global innovator first on the market

G2 – global innovator in high-technology niche

G3 – global followers – fast imitation of products

G4.1 (Type A) – classical global strategy (Porter) – lower price

G4.2 (Type B) – classical global strategy (Porter) – differentiation of the product

L1 – local innovator – first localisation of the product

L2 – local innovator – introducing own localised substitute product

L3 – local follower company – localising existing product

L4.1 (Type A) – classical local strategy (Porter) – lower price (local focus)

L4.2 (Type B) – classical local strategy (Porter) – differentiation of the product (local focus)

The short descriptions of the visions of the typological strategies are presented below :

G1 – global innovator first on the market

Vision: Such types of companies are strong sources of innovation on the market. They usually offer innovative technological products and they are first on the market. Their advantages come from: (1) the advantage to be first on the market; (2) emerging of competitive technologies; (3) additional assets of the company; (4) the high speed of entering the market from the competitive companies and (5) the creation of ecosystem for the users in using the product.

G2 – global innovator in high-technology niche

Vision: This type of companies have high level of innovation capabilities and high level of technological expertise in certain area. They can be very successful by offering high quality, highly specialised technological narrow-niche products for specific technological niche, which

products have higher added value for the customers and higher specialised features for a technology niche specialised product, than competitors' products have when covering combined solutions with wider range of features (from different niches).

G3 – global followers – fast imitation of products

Vision: This type of companiesare followers on global new (emerging market). They can be very successful by offering quickly on the market products imitating the innovative ones, with lower price and usually not so high initial level of quality. Their success depends on their technological and management capabilities to bring products with similar functionality fast at the market.

G4.1 (Type A) – classical global strategy (Porter) – lower price

Vision: This type of companies are followers on a global existing market, having source of competitive advantage – lower price. They have strategies following the Porter's Generic Strategies Cost strategy for global market with all characteristics, which it has.

G4.2 (Type B) – classical global strategy (Porter) – differentiation of the product

Vision: This type of companies are followers on a global existing market, having source of competitive advantage – differentiation of the product. They have strategies following the Porter's Generic Strategies Differentiation strategy for global market with all characteristics, which it has.

L1 – local innovator – first localisation of the product

Vision: This type of companies are innovators on new (emerging) local markets. They have high level of innovation potential and are offering their innovative products for the local market. They can be very successful by offering localised products, meeting the local special needs and localisation opportunities (language, place, currency, laws, etc.). Their success depends on (1) the advantage to be first on the market; (2) emerging of competitive technologies; (3) additional assets of the company; (4) the high speed of entering the local market from the competitive companies and (5) the creation of ecosystem for the users in using the product.

L2 – local innovator – introducing own substitute localised products

Vision: This type of companies have high innovative capacity and can bring innovations to the market, but since they are competing on the local existing market, they can be successful by offering substitute products, which are specially localised for the market with its characteristics. The substitute products can be in the local language, according the local laws, currency, etc. (as in accounting software), can be localised substitute products for a local niche. These products are substitute localised products, but they are developed by the companies from this type.

L3 – local follower company – localising existing product

Vision: This type of companies are followers on new (emerging) local markets. They can be very successful by localising products, developed by other companies. Localising products on a new (emerging) local market will give advantage

for these types of products in front of the other products and is within the range of companies with lower innovative potential.

L4.1 (Type A) – classical local strategy (Porter) – lower price (local focus)

Vision: This type of companies are followers on a local existing market, having source of competitive advantage – price of the product. They have strategies following the Porter's Generic Strategies Focus Cost strategy for local market with all characteristics, which it has.

L4.2 (Type B) – classical local strategy (Porter) – differentiation of the product (local focus)

Vision: This type of companies are followers on a local existing market, having source of competitive advantage – differentiation of the product. They have strategies following the Porter's Generic Strategies Focus Differentiation strategy for local market with all characteristics, which it has.

After defining the visions of the strategies (based on the implemented research), next step is using the results from the research in developing the strategies (tables of strategic choices), according the updated by the author balances scorecard model, presented in the next chapter.

F. Updated balanced scorecard methodology

After defining the typological strategy of the company, the entrepreneurs are moved to the next section, which is defining of the strategic goals in front of their company, their strategic advantage and choosing the steps they are going to take in order to reach their goals.

This step is a combination of the categories of: 1) updated by the author balanced scorecard methodology, and 2) developed by the author strategy identifying and analysing modeling canvas.

The updated balanced scorecard methodology includes the following perspectives: financial perspective, customer perspective, internal processes perspective and learning and growth perspective, which are the classical perspectives in the balanced scorecard methodology [13], as well as added by the author product perspective.

The Product perspective connects on one side - how the company is answering to Clients needs with its product and on the other - how the company will optimise its internal processes to meet the clients' needs by improving the offering of this product. The information filled in the Product perspective is largely connected with what is developed in the value proposition segment of the business model canvas development.

The updated balanced scorecard methodology has the following order of the perspectives: 1) financial perspective, 2) customer perspective, 3) product perspective, 4) internal processes perspective and 5) learning and growth perspective. For each of these perspectives the key success factors, strategic goals and actions for achieving these goals should be defined.

Figure 9. Updated Balanced Scorecard model

The formulation of the classical strategy maps according the balanced scorecard methodology includes finding the

interconnections and dependabilities between the factors and strategic goals in all perspectives, for each of the ten typological strategies.

№	Research on Preference of Type of Balanced Scorecard Model Amongst Entrepreneurs in the Technology Sphere	
	Balanced Scorecard Model	Preference results
7	BSC without Product perspective	15%
8	Balanced Scorecard with Product perspective	85%

Table 2. Modified balanced scorecard preference from entrepreneurs in technology sphere (research)

After the modification of the Balanced scorecard model, entrepreneurs in the technology sphere showed higher preference towards the modified model with product perspective.

After the development of the main characteristics of the ten typological strategies, and building the strategic maps, an interactive opportunity for choice and adjustment of the strategies for the particular technology new ventures will be offered to the entrepreneurs through an e-system, developed according this strategic modeling process and methodology of strategy classification.

G. Modeling of typological strategies

After identifying the position of the company at the matrix, the typological strategy of the company is formed. It is based on modeling process, remodeled on the basis of classical strategic modeling process. The typological strategy modeling starts with defining a set of key factors of success, identified through the implemented amongst 153 entrepreneurs research. These key factors of success are connected with the main characteristics of the typological strategy and with the typological characteristics of that type of technology startup companies. These Key factors of success are laying the first step in the strategy modeling data. Their interconnections are visualized through strategic map of the key success factors. The list of key success factors is specific for the particular typological strategy. In order to improve the sustainable strategic development of the technology startup companies, the identified Key factors of success are organized according a modified Balanced Scorecard model.

Using the modified Balanced Scorecard model, a typological strategy is developed, following the process: (1) identification of Key success factors; (2) identification of typological Strategic goals for each of the Key success factors; (3) identification of Key performance indicators; (4) identification of typological strategic actions for reaching the typological strategic goals.

Figure 10. Typological Strategy Information Table Structure

After presenting the developed typological strategy to the entrepreneurs by the e-system for strategic management, next step in the process is modification and upgrading of the typological strategy table towards a specific company's strategy.

H. Modeling of company-specific strategies

The modeling of company-specific strategy is connected

with updating the table of typological strategy with company specific data in the upper mentioned categories, as well as adding an additional data categories in the following directions: (1) specifying category "target values", which shows the different for each company target values for reaching in achieving the strategic goals; (2) specifying specific actions for each group of typological actions, in reaching the strategic goals. The table of modeling of specific company's strategy has the following structure:

All upper mentioned Key Success Factors, Strategic goals, Key Performance Indicators and Typological actions are previously developed by the author and their content is described as research outcome . The resulted table has the following structure:

Figure 11. Company-specific Strategy Information Table Structure

Next finalizing step in the process of strategy modeling is implementing ranking by importance for each key success factor, as well as for each specific strategic action. This step can be implemented in the development of typological strategy and the results is formulation of overall ranking, which supports the process of strategic implementation and execution. Overall ranking (low=1; very high=5) is formed by attaching quantitative expression to this qualitative indicators and by multiplying the level of importance of the key success factors and the specific strategic actions. The result is an overall ranking by importance of the strategic actions for the technology startup company.

The next step in the process is adding category for person responsible for the implementation of each strategic action and defining of deadlines for its achievement.

In this way the information in the strategy table is containing all strategic choices of the technology startup company and further with ranking by importance and urgency, this table will be very useful in the processes of strategy implementation, execution and control.

The next step in the strategic management is strategy implementation, which is preparing the technology new ventures for strategy execution stage.

With this step the strategy formulation process is finished and an easy transition towards the strategy implementation is made.

At this stage of strategic modeling and strategy management the technology new ventures will have available all necessary information for entering the next step of the strategic management process, which can be a subject of research in future in connection with creation of optimised algorythm and e-system, supporting this process.

I. Overview on the proposed process of strategic modeling for technology new ventures

The process of strategic modeling for technology new ventures developed by the author has the following structure:

Figure 12. Basic steps in the process of strategic modeling

The process includes: (1) strategic analysis, using classical strategic analysis tools and SIAMC tool; (2) Classification of strategies, using SIA Matrix; (3) overview on the developed model of strategy for the corresponding typological strategy and (4) using the model of typological strategy as a basics for development of company-specific detailed model of strategy, using the proposed Balanced Scorecard model in this article.

After developing this theoretical model, an inovative e-system for strategic modeling for technology new ventures is created by the author. The system unites the described in this article instruments and methodology and has gone through aprobation and experimentation tests .

The process of strategy modeling is of key importance for every company, specially for technology new ventures. A good strategy, combined with a good implementation is an essential part of the success of startup companies and in technology sphere often competitive advantage come from better strategy and better execution.

IV. CONCLUSION

The rapidly changing environment in technology sphere is making the task of creating a successful technology new venture even harder. This, together with the specifics of the startup companies is leading towards the development of many new tools, supporting the success of startup companies. Strategy modeling is one of the most important activities of the company, and for this reason, the development of suitable methodologies, algorythms and supportive e-systems is even more necessary than ever.

The proposed methodology is uniting suitable measures from many different tools and methods, developed by the author. As a results a methodology for strategic modeling is proposed, which can be used as a basis for creation of supportive strategy modeling e-systems for technology new ventures. The algorythm is based on the classical strategic management process, strategy modeling canvas, developed by the author, updated by the author balanced scorecard model, verified by the author classification of basic typological strategies, results from a research, implemented by the author and a process and methodology for strategy modeling, which can be applied in a strategy modeling e-system, developed also by the author.

The proposed methodology for strategy modeling is subject of further research and experimentation by the author and is connected with the further development of an e-system, supporting the process of strategy modeling for technology new ventures.

APPENDIX

Due to picture size, appendix is after References.

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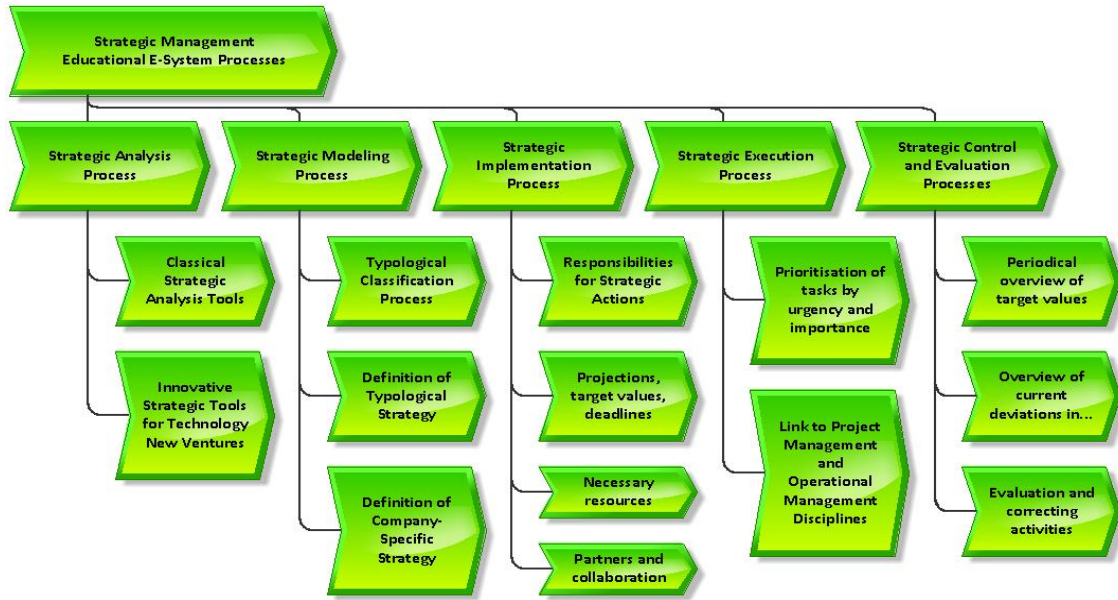
APPENDIX

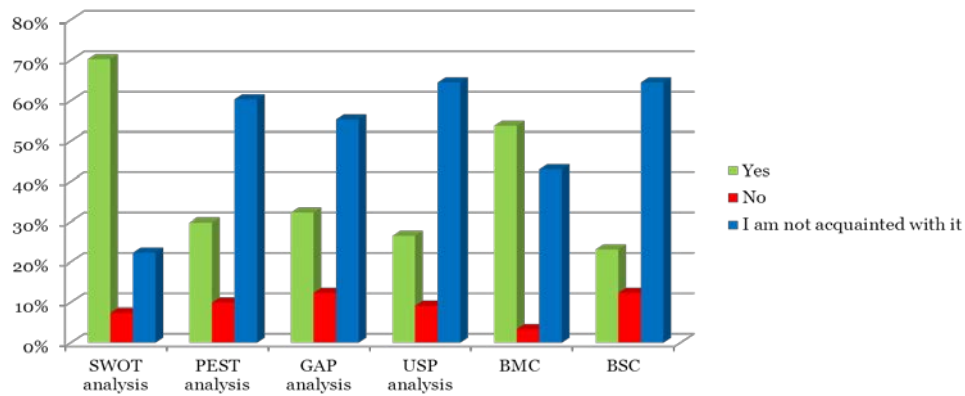Figure 1. Strategic management overall model, proposed by the author.

Figure 2. Results from the research on the usage of strategic analysis tools in technology startup companies' activity (implemented by the author)
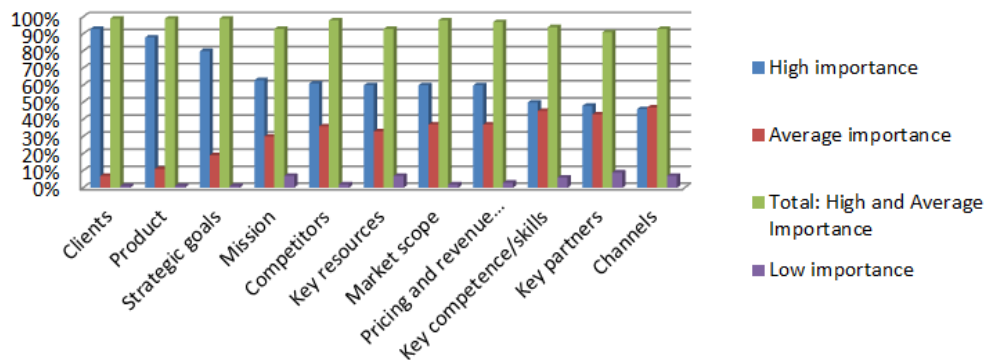
Figure 3. Elements of the classical strategic analysis tools with higher level of importance according the participants in the research (implemented by the author)

Mission
Mission, Vision, Priorities, Aspirations of the Company

Goals
Strategic general goals, the company wants to achieve

Key Partners
- How do the key partners add value to our product and gives us advantage?
- Who are our key partners? (Suppliers, distributors, other companies), etc.
- What partnerships in the channel of distribution can give us an advantage?

Key competitors
- How competitors are threatening our success?
- Who are our competitors/substitutions?
- In what are they better at? Is this the core competence and key reason for customers to buy such a product?

Key resources
How Key resources give us advantage?
- financial
- material
- human
- technological (innovation, patents, licenses)
- What resources do we need now and in future?

Value propositions
- How is our product adding value to customers? Why customers buy our product?
- How our product outperforms those of the clients?
- Towards which group of clients is our product pointed at?
- How our products create culture amongst clients?
- JTBD
- Design
- Unique selling proposition of the product

Key competences
- What key (core) competences do we need to have/acquire?
- How do these competences raise the motivation of customers to buy our product?

Channels
- What channels are we going to use? What are preferred by the clients?
- How used channels of distribution are giving us advantage?
- Which channels are giving us higher advantage – own or foreign?

Customer segments
- Who are our checked customers?
- Towards which group of customers is pointed out product? – customers, users
- What is customer's main motivation to buy our product?
- How can we get, keep, grow our customers?
- What is the most valuable feature of our product for our customers?

Scope
- What is the scope of our business? (geographical and professional and people group, focus or global)
- How we can have advantage based on the scope we are in?

Pricing and revenue streams
What is our price category?
How our business model gives us advantage?
How are our revenue streams giving us advantage?

Figure 4. Strategy identifying and analysing modeling canvas (SIAMC) (developed by the author)

Step (A) – scope of competition	Step (B) – competitive advantage	Step (C) – resources and implementation
Analyze categories: 1) Mission, 2) Goals, 3) Product/Value proposition; 4) Clients; 5) Market Scope;	Analyze categories: 6) Key competences; 7) Key competitors; 8) Key partners; 9) Pricing and revenue streams;	Analyze categories: 10) Key resources; 11) Channels of distribution;

Table 1. A-B-C process of work with the canvas, including sequence and belonging of the categories to the steps in the process (developed by the author)
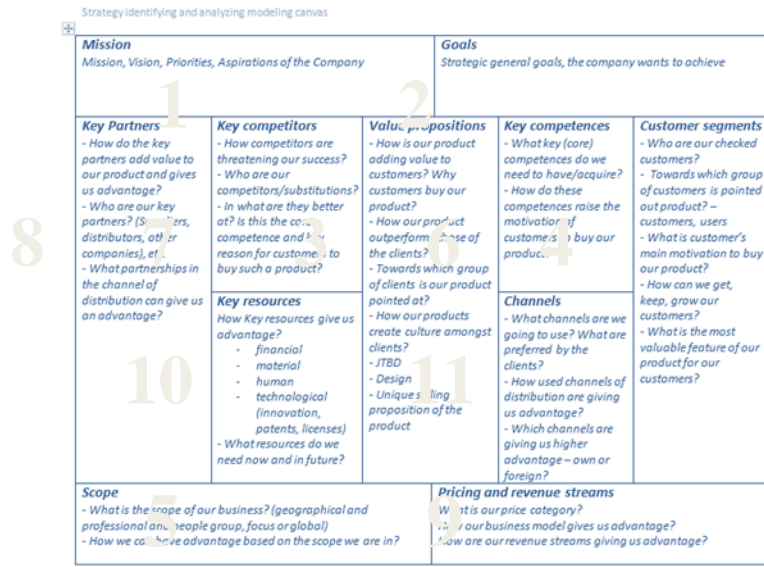
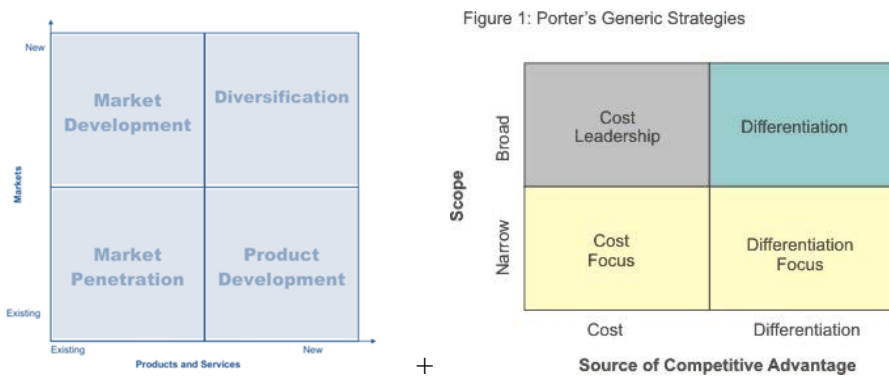Figure 5. Sequence of work with the categories of SIAMC tool (developed by the author).

Figure 6. New strategic classification framework is a combination of Porter's Generic Strategies and Ansoff's Product-Market Matrix (pictures from www.mindtools.com)
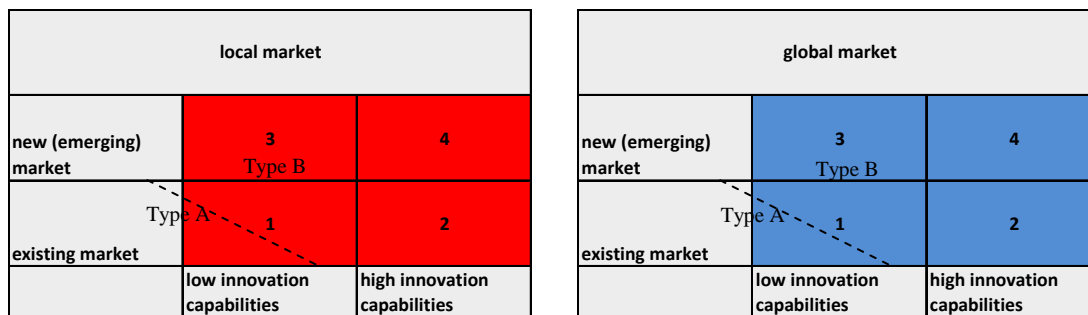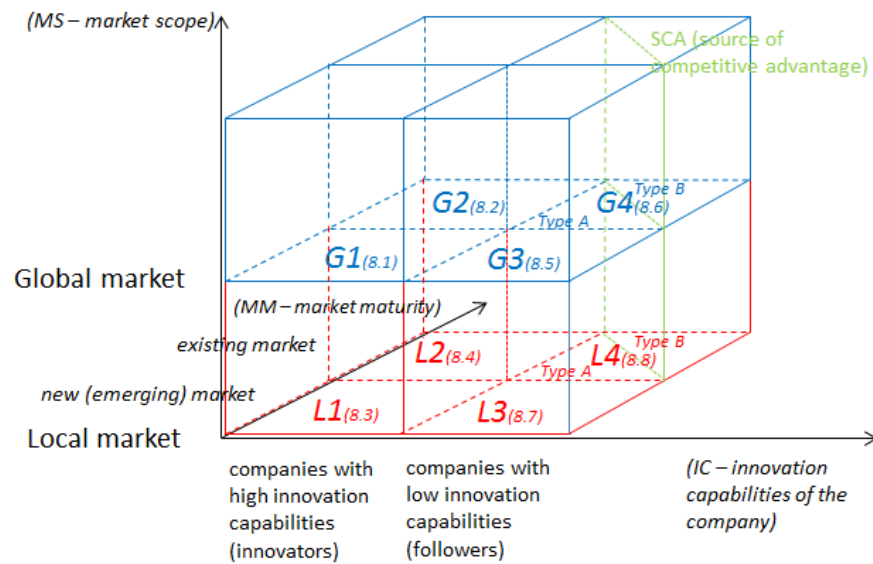

Figure 7. Proposed by the author 3D+ Strategy identifying and analysing classification matrix (SIA Matrix) – 2D presentation of the model

Figure 8. Proposed by the author 3D+ Strategy identifying and analysing classification matrix (SIA Matrix)
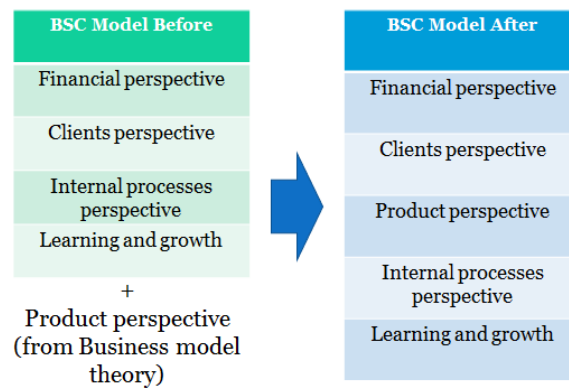

Figure 9. Updated Balanced Scorecard model

№	Research on Preference of Type of Balanced Scorecard Model Amongst Entrepreneurs in the Technology Sphere	
	Balanced Scorecard Model	*Preference results*
7	BSC **without** Product perspective	15%
8	Balanced Scorecard **with** Product perspective	85%

Table 2. Modified balanced scorecard preference from entrepreneurs in technology sphere (research)

Key success factors	Typological strategic goals	Key performance indicators	Typological strategic actions
Financial perspective			
data	data	data	data
Clients perspective			
data	data	data	data
Product perspective			
data	data	data	data
Perspective Internal processes			
data	data	data	data
Perspective Learning and Growth			
data	data	data	data

Figure 10. Typological Strategy Information Table Structure

Key success factors	Strategic goals	KPIs	Target values	General typological actions	Specific strategic actions
Financial perspective					
data	data	data	data	data	data
Clients perspective					
data	data	data	data	data	data
Product perspective					
data	data	data	data	data	data
Perspective Internal processes					
data	data	data	data	data	data
Perspective Learning and Growth					
data	data	data	data	data	data

Figure 11. Company-specific Strategy Information Table Structure

Strategic analysis using SIAMC and the classical strategic analysis instruments → Classification of strategies for technology new ventures (SIA Matrix) → Models of typological strategies (typological tables of strategic choices) → Modeling of company-specific strategy (detailed compay-specific table of strategic choices)
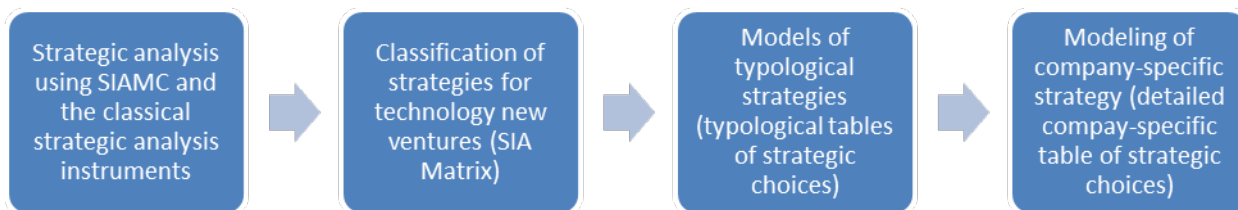
Figure 12. Basic steps in the process of strategic modeling