MODEL FOR STRATEGY OF TECHNOLOGY NEW VENTURES ON GLOBAL MARKET

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Abstract: New technology ventures (technology startup companies) have an extreme importance in the highly developed innovation technological world. Indeed, the world of technology entrepreneurship is so quickly developing that research of the characteristics and reasons, what makes a company successful are of essential importance for the success and the modeling of a successful strategy for any company in this sphere. This article represents the results from a research, focused on the basic types of strategies for technology new ventures, their categorisation and method of strategy modeling and also presenting a model for strategy for an innovative technology new venture operating on a global new or emerging market.

Keywords: strategy, model, technology, new venture, entrepreneurship, innovation, startup, strategic management.

JEL: M42

1.   Introduction

This article presents a model for strategy of technology new ventures which have a high degree of innovation capacity and start their business with products or services offering them to global emerging (new) market.

The article includes presentation on the innovative 3D+ Strategy Classification for Technology startups, developed by the author, as well as fully developed features of a strategy for an innovative technology new venture offering products for the global new or existing market. The presented strategy is developed following an innovative process, developed by the author, which is based on the Balanced Scorecard (BSC) Methodology. It includes improvements by adding additional perspective, as well as a simplified process of applying the methodology, specifically suited for technology startup companies.

The developments presented in this article are based on an international research amongst 153 entrepreneurs from the technology sphere in Europe

2.   Description, modelling and methods. Presenting the innovative 3D+ Strategy Identifying and Analysing Classification Matrix (3D+ SIA Classification Matrix) and an improved BSC methodology for technology new ventures.

Modelling strategies for technology new ventures is a matter of highest importance for the success of any startup company. And due to the specificity of technology start-up

companies and the inapplicability of some of the tools in the classical strategic management for entrepreneurship activities, there is an increasing need to study and analyze the specifics, tools, methods and models to support strategic management of technology startup companies.

The existing tools and instruments in strategic management are not directly applicable for technology startup companies' activities, 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 acquainted with all the tools and sometimes they don't find them useful.

This is very true for strategic modeling tools. The most famous and applicable one is Porter's Generic Forces Classification of strategies. It is applicable, but for technology new ventures it is not sufficient. Additionally some good instruments have been developed recently specifically for startup companies, such as: Business Model Canvas, Lean Methodology, etc., which are parts of or support the overall strategic management of the company, but problem with strategic modeling for technology new ventures is still unsolved at general.

The proposed in this article strategy model is based on the following results, developed by the author:

(1) A research in the field of strategy modeling amongst 153 participants in the technology entrepreneurship sphere

(2) Developed 3D+ Strategy Classification Matrix (3D+ SIA Classification Matrix – 3D+ Strategy Identifying and Analyzing Classification Matrix) with developed 10 typological strategies, based on Porter's Generic Strategies (4 typological strategies), Ansoff's Product-Market Matrix (4 typological strategies), a 3D matrix for strategic classification of S. Peng and Z. Bae (7 typological strategies) and qualitative and quantitative research by the author amongst 153 entrepreneurs in the technological sphere

(3) An innovative model of the classical Balanced Scorecard Methodology with additional perspective - Product perspective, added by the author, as a result from the conducted research.

The proposed strategy for technology new ventures is one of the 10 typological strategies for technology new ventures, developed by the author and it includes:

(1) Definition of typological vision of the typological strategy

(2) Full developed tables of the typological strategy 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

(3) Description of the entire process of strategic modeling, offered by the author

(4) Presenting 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 Analyzing Modeling System (SIA-MS), which is part of a further development of an entire strategic management system for technology new ventures, implemented by the author

2.1. The innovative 3D+ Strategy Identifying and Analysing Classification Matrix (3D+ SIA Classification Matrix)

The presented innovative 3D+ Strategy Identifying and Analysing (SIA) Classification Matrix is based on the following classical strategic modeling tools:

(1)   Porter's Generic Strategies

(2)   From the Marketing Strategies – Ansoff's Product-Market Matrix.

(3)   A classification framework developed by S. Park 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 developed companies.

The proposed by the author 3D+ Strategic Classification Matrix is based on the upper mentioned three classification frameworks and identifies 10 types of typological strategies, specifically focused, hoewever, on technology startup companies, which are influenced by four directions, according the implemented research amongst 153 technology statup companies. The chosen four 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"}

Fig. 1. New strategic classification framework is a combination of Porter's Generic Strategies and Ansoff's Product-Market Matrix
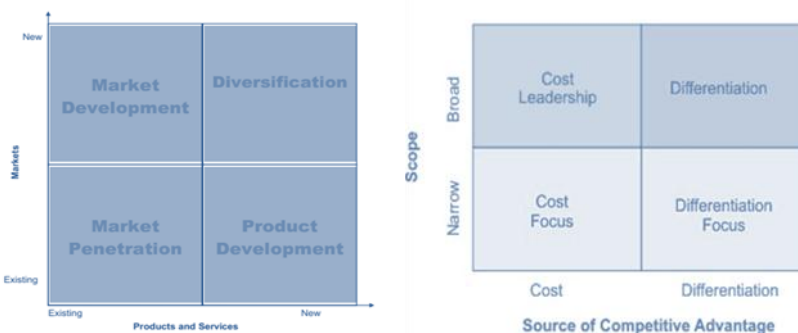
The new strategic framework is classifying strategies according the following process: (1) initial classification is made according technological innovative capabilities of the company, market scope and market maturity. After defining the eight basic typological strategies, additional strategic

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 3D+ Strategy Identifying and Analysing Classification Matrix (SIA Matrix)

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

local market		
new (emerging) market	3	4
existing market	1	2
	low innovation capabilities	high innovation capabilities

| global market		
new (emerging) market	3	4
existing market	1	2
	low innovation capabilities	high innovation capabilities

$$. NVTS = f(IC, MS, MM, SCE) \tag{1}$$

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

The ten basic typological strategies for technology new ventures were verified through a research by the author, amongst 153 entrepreneurs. The typological strategies 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 algorithm, based on the results of the implemented research and are showing results, confirming the suitability of the chosen dimensions. 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.

Fig. 3. Proposed by the author 3D+ Strategy Identifying And Analysing Classification Matrix (3D+ SIA Classification Matrix)

SIA Matrix (Strategy Identifying and Analyzing Matrix)
Model of 3D+ Classification of
Typological Strategies for Technology New Companies
(developed by the author)
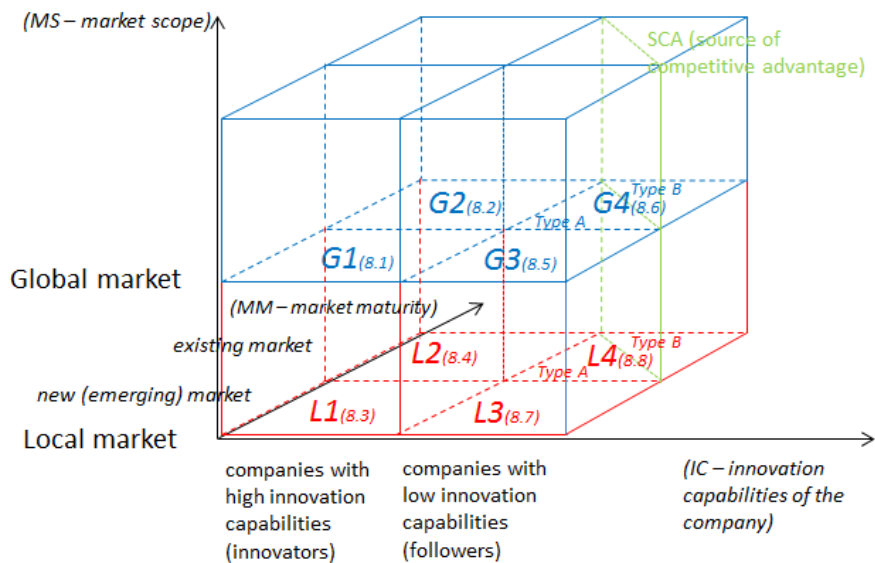
*NVTS = f(IC, MS, MM,SCA)
**Visions and abstract strategies are developed by the author, using the innovative BSC model, described in this article.

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: These 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 companies are 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: These types 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: These types 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: These types 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: These types 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 emerging product

Vision: These types 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: These types 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: These types 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.

The presented in this article developed strategy for technology new ventures is G1 – an innovative technology new venture operating on a global new or emerging market.

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, which is presented next.

2.2.   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.

The classical 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. The updated Balanced Scorecard methodology includes an added by the author product perspective, as shown on the next figure.

Fig. 4. Updated Balanced Scorecard Model
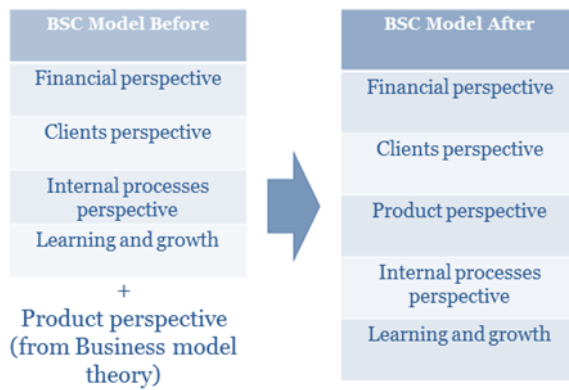
The Product perspective connects on one side - how the company is answering to Clients needs with its product and on the other - how the company will optimise its internal processes to meet the clients' needs by improving the offering of this product. The information filled in the Product perspective 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.

A preference towards using the updated Balanced Scorecard Model from entrepreneurs was found in the research.

Table 1. Updated Balanced Scorecard - preference from entrepreneurs in technology sphere (research)

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

The following 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 the particular typological strategy. The used in this article BSC model is limiting the cascading hierarchical way of applying BSC methodology to a single level application, suitable for the technology startup companies.

Fig. 5. Basic steps in the process of strategic modeling
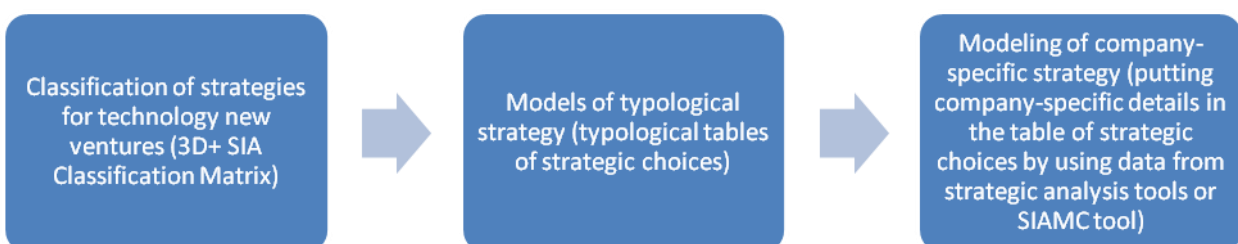
After the development of the main characteristics of the ten typological strategies, and building the strategic maps, an interactive opportunity for choice and adjustment of the strategies for the particular technology new ventures is offered to the entrepreneurs through a developed e-system "SIAMS" (Strategic Identifying and Analysing Modeling System - http://www.strategy-startup.com - currently under translation), developed according this strategic modeling process and methodology of strategy classification.

3. Research implementation and resulting model presentation. Model for strategy of an innovative technology new venture operating on global new or emerging market

The presented in this chapter model describes a typological strategy for a technology new venture with high innovative capacity and introduction to the market of innovative products, operating at the global emerging (new) market. The model is created on the basis of the presented in this article developed process for modeling of strategies and a 3D+ Strategy (SIA) Classification Matrix for technology new ventures.

3.1 Research implementation

The research on development of models of strategies was implemented amongst 153 entrepreneurs from Bulgaria and abroad 136 participants from Bulgaria and 17 participants from other countries (Ukraine, Japan, Germany, Austria, Spain, Belgium, Italy, Canada and USA).

Fig. 6. Screen-shot of the questionaire from the research on link: goo.gl/5bh8mK.

The age range of 80% of the participants is between 25 and 44 years of age, which is the most active age [16] amongst the entrepreneurs.

The research was imeplemented, based on questionnaries including key questions on strategic modeling, spread online and on paper amongst 153 entrepreneurs (67% men and 33% women). The questionnaries themselves were developed after research on the topic and five interviews with entrepreneurs in the technology sphere in Bulgaria.

Fig. 7. Structure of the questionnaire (developed by the author)

Part 1 (questions 1 to 4)

basic participants data with defining the stage of business idea development

Part 2 (questions 5 to 8)

data for applied strategic tools and strategic analysiss models for development of innovative tool

Part 3 (questions 9 to 14)

| questions for strategic categorisation of the participant companies | defining the leading strategic modeling factors according the categorisation |

Part 4 (question 15)

preference towards a particular BSC model from the participants

Part 5 (question 16)

preference towards a using an innovative strategic management software instrument from the participants

The questionnaire identified basic information about the participants, the level of development of their business idea, basic questions for the categorisation of the company, questions for strategic modeling, strategic advantages and strategic threats and information about the usage of strategic tools and instruments.

All qualitative and quantitative results from the implemented research, corresponding to the presented in this article typological model for strategy, are presented next.

2.3. Typological vision

New markets are created through inventing of new technologies or applying of existing technologies into new products. The key role of this process of creating new markets/industries/products is taken by technology new ventures. The early stages of technology development for them are connected with high level of competition between the different technologies, standards, frameworks, etc. The advantage characteristics, especially in the IT sector, are connected with the importance of technological standards and their competition with the other standards, products, companies and technologies. The companies having high innovation potential and operating on a global new or emerging market could win competitive advantage and spread theirtechnological specifications, such as platforms, designs ot standards, by active participation in the international technology society. The spreading and acceptance of their innovative technology specifications has a direct connection with the competitive advantage they are going to have on the market and their successful development. This process is often conneted with strategic partnerships with the key players - leaders in the field and

participants in the chain of offering the product to the users. The success of such companies depends on:

    (1)   The advantage to be first on the market;

    (2)   Speed of emerging of competitive technologies;

    (3)   Companies capabilities and additional assets;

    (4)   Speed of entering at the market of the competitive companies;

    (5)   Levels of acceptance of the technology by the users/partners.

Basic characteristics of this typological strategy are focus on the speed of entering the market and estblishing winning positions with partners and users, very high potential for growth, very high research and development costs and very high market uncertainty. They are also connected with a high level of internationalisation, which should be considered in advance.

The basic focus on introduction of such innovative technologies /products/ is: focus on distinguishing of such innovative technology from existing ones and presenting users the strongest sides of the technology. Such technologies also demand education of the users on the application of the new technology during presenting to the market.

The strategic advantages of such technology new ventures, according the implemented research, are:

    (1)   The uniqueness of the technology/product

    (2)   Easy access to and application of the technology/product

    (3)   High quality of the product/technology

The following tables are presenting the results from the implemented research amongst 153 technology entrepreneurship companies, which are used as a basis for development of the model of the presented typological strategy.

Table 2. Frequency of innovations (research)

№	Frequency of introducing innovations in the products	
3	Constantly	31%
4	Frequently	38%
5	Sometimes	23%
6	Rarely	8%

№	Strategic advantages of innovative technology new ventures on global new or existing market	
7	Uniqueness of the product on the market	88,2%
8	Easy access and application of the product	82,4%
9	High qulity of the product	70,6%
10	Additional services to the presented product	29,4%
11	Belonging of the product to the well accepted technologies at the market	29,4%
12	Known brand or image of product	23,5%
13	Narrow specialization of the product (highly specialised product)	17,6%
14	Higher degree of compatibility of the product with the	11,8%

№	Strategic advantages of innovative technology new ventures on global new or existing market	
7	Uniqueness of the product on the market	88,2%
	local specifics, norms, state requirements, etc.	
15	Lower price of the product	5,9%

The strategic threats in front of this type of companies, according the implemented research, are:

(1)   Lack of easy access to the product from the target group of users/clients

(2)   Lack of information amongst the clients/users about the work and application of the product

(3)   Emergence of competitive product ith higher quality and higher price

(4)   Weak resource planning of the company

Table 4. Strategic advantages for this type of companies (research)

№	Strategic threats of innovative technology new ventures on global new or existing market	
16	Lack of easy access to the product from the target group of users/clients	76,5%
17	Lack of information amongst the clients/users about the work and application of the product	64,7%
18	Emergence of competitive product ith higher quality and higher price	52,9%
19	Weak resource planning of the company	52,9%
20	Emergence of competitive product at lower price	47,1%
21	Lowering the number/frequency of innovations brought to the market	47,1%
22	Changes in the standards or legal changes	5,9%

The results from the implemented research are corresponding to the basic directions of the typological vision of the strategy, as wel as with the aspects in the innovative products and technologies innovation management.

The developed Key success factors for the successful implementation of this vision are:

•   High financial results and increasing profit

•   Preference of customers to our product over that of its competitors

•   Good company image

•   Maintain a high quality product

•   Product uniqueness on the market

•   Easy access and application of the product

•   Informing customers about the benefits of the product or service

•   Quality interface and facilitate use of the product or service

•   Building or participation in eco-system of technological standards

•   Building/offering of existing eco-system for the product's usage

•   Protecting of the innovations of the product with patent

•   Increasing number of customers

- •   Price of the product in the high pricing segment
- •   Reliable operation of product
- •   Quality customer service
- •   Introducing of innovations to the market
- •   Qualified personnel
- •   Synchronization and teamwork
- •   Motivating working atmosphere

The Key Success Factors are going to be ordered by their belonging to one of the five perspectives in the proposed updated Balanced Scorecard model – financial perspective, customers' perspective, product perspective, internal processes perspective, learning and growth perspective.

The Key Success Factors then are presented divided by perspectives and spread in a Strategic map, showing the interconnections of influence between them. The map shows how each of the success factors is supporting and influencing the other Key Success Factors.

Fig. 8. Strategic map of the Key Success Factors according the innovative Balanced Scorecard model.

Internal Processes Perspective

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┌──────────────────┐          ┌──────────────┐          ┌──────────────────┐
│ Successfully     │          │ Maintaining a│          │ Customer         │
│ introducing      │          │ high quality │          │ awareness of the │
│ innovations at   │          │ product      │          │ benefits of the  │
│ the market       │          │              │          │ product or       │
│                  │          │              │          │ service          │
└──────────────────┘          └──────────────┘          └──────────────────┘
          ┌──────────────┐
          │ Quality      │
          │ customer     │
          │ service      │
          └──────────────┘
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Learning and Growth Perspective

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          ┌──────────────┐
          │ Qualified    │
          │ staff        │
          └──────────────┘
┌──────────────────┐                    ┌──────────────────┐
│ Synchronisation  │                    │ Motivating       │
│ and teamwork     │                    │ working          │
│                  │                    │ atmosphere       │
└──────────────────┘                    └──────────────────┘
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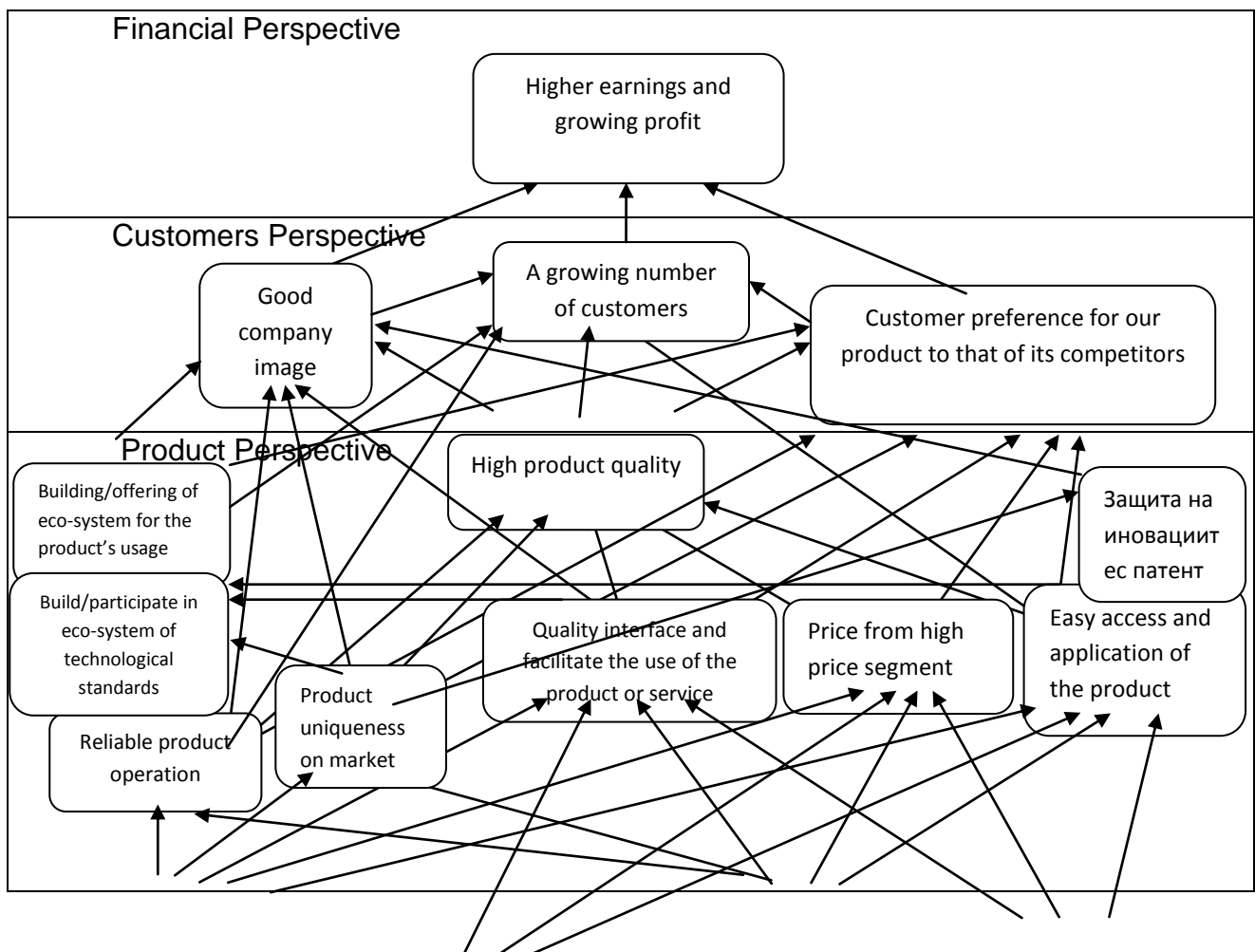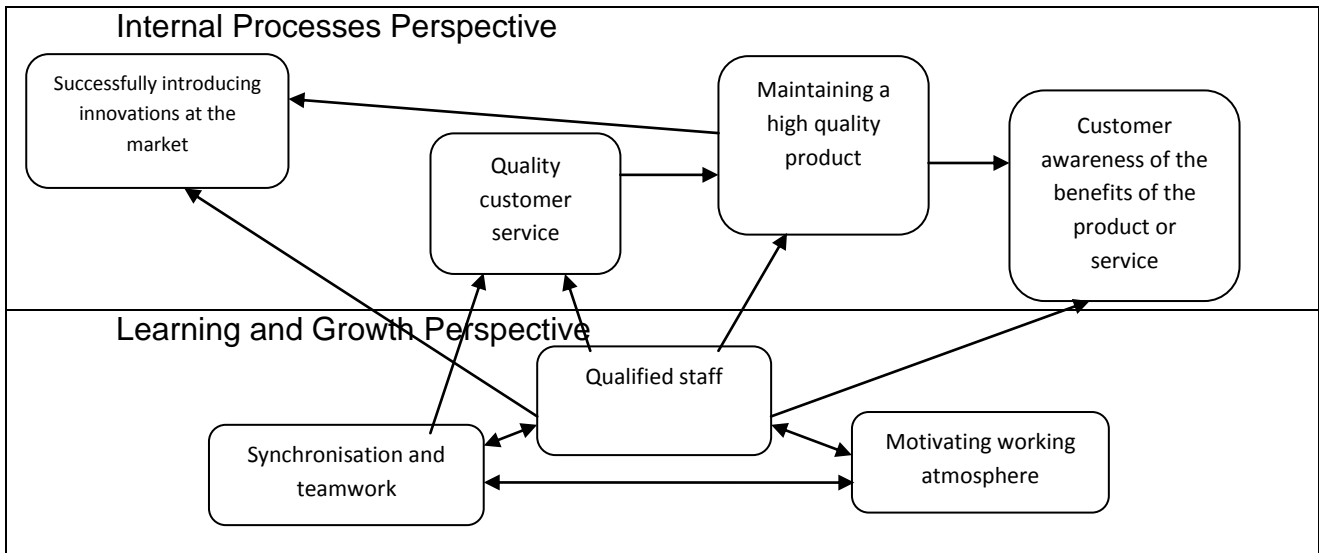
The Strategic maps of Key Success Factors helps in defining of the most important factors of a given strategy, which reflects on the further defining of priorities for the activities connected with these factors. After the defining of the Key Success Factors, the particular Strategic objectives should be defined. These objectives are supporting reaching of the overall Strategic Goal of the Company, which is directly connected with the vision and mission of the company, and an implemented strategic analysis, which is not part of this article. For each Key Success Factor, at least one Strategic objective should be defined.

Table 5. Key Success Factors and the connected with them Strategic goals

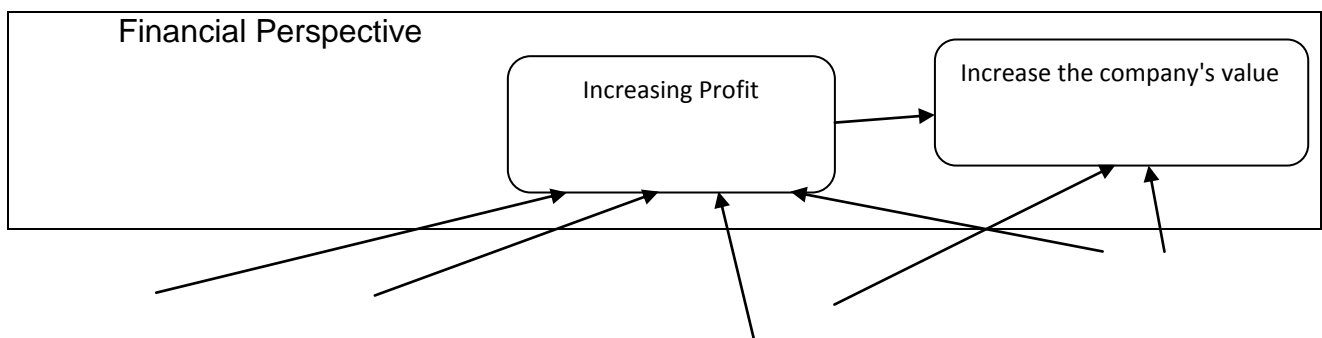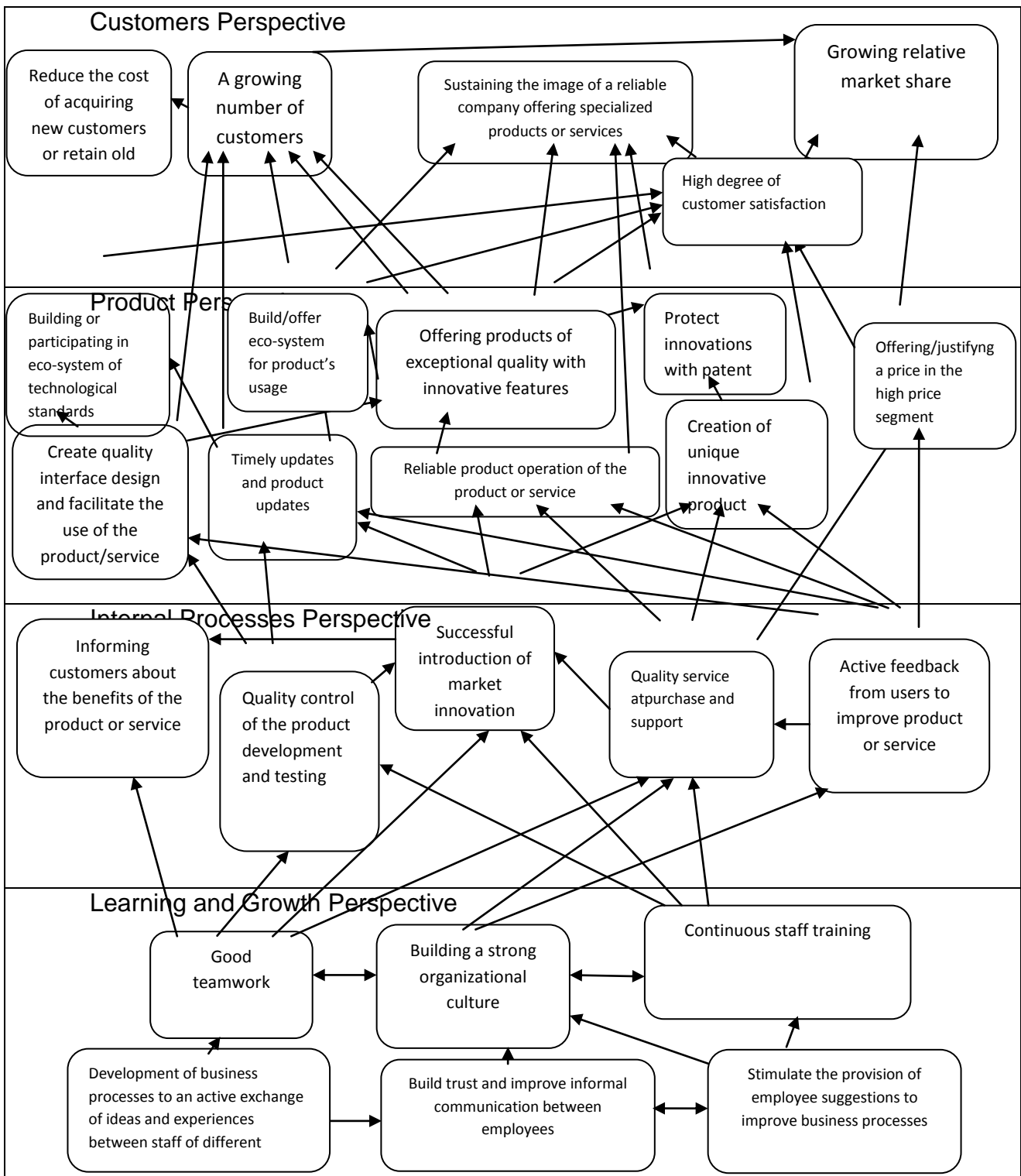| Key Success Factors	Strategic objectives
Financial perspective	
Higher earnings and growing profit	Increase the company's value
	Increasing Profit
Customers perspective	
Customer preference for our product to that of its competitors	Growing relative market share
	A growing number of customers
	Reduce the cost of acquiring new customers or retain old one
Good image of the company	Sustaining the image of a reliable company offering specialized products or services
A growing number of customers	A growing number of customers
Product perspective	
High product quality	Offering products of exceptional quality with innovative features
Reliable product operation	Reliable product operation of the product or service
	Timely updates and product updates
Easy access and application of the system	Insuring easy access and application of the product
Building/offering of existing eco-system for the product's usage	Offering eco-system for the product's usage
Product uniqueness on the	Creating of unique product, solving problem in

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market	unique /innovative way, product differentiating from the rest products at the market
Protecting of innovations by patent	Protection of the innovations/products with patents
Quality interface and facilitate the use of the product or service	Creating of quality interface and facilitate use of the product or service
Building or participation in eco-system of technological standards	Building or participation in an existing eco-system of technological standards
Price from the high price segment	Offering/Justifying a price from the high price segment
Internal processes perspective	
Customer awareness of the benefits of the product or service	Clearly inform customers about the benefits of the product or service
Maintaining a high quality product	Quality control of the product development
	Quality product testing
Quality customer service	Quality service when buying
	Quality service at support
Successfully introducing innovations at the market	Successful introduction of market innovation
	Active feedback from users to improve product
Learning and Growth perspective	
Qualified staff	Continuous staff training
Synchronization and teamwork	Good teamwork
	Stimulate the provision of employee suggestions to improve business processes
	Development of business processes to an active exchange of ideas and experiences between staff of different directions
Motivating working atmosphere	Building a strong organizational culture
	Build trust and improve informal communication between employees
	Continuous staff training

Next step is preparation of a Strategic map for the Strategic objectives of the typological strategy.

Fig. 9. Strategic map of the strategic objectives of the company

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The successful implementation of each activity requires setting the correct order and tracking progress in the implementation of activities leading up to the goal. To achieve the strategic objectives, key performance indicators by which to monitor progress in achieving the objectives should be set, indicators should be quantifiable. The next step in the process of modeling strategy is the definition of performance indicators for each strategic objective.

After determining the key performance indicators, the maximum level targets to achieve, for a chosen period, should be determined. They are specific to each company and are associated with a detailed analysis of the internal and external environment for the

company. Further examination and monitor performance are carried out precisely on these indicators.

In order to reach the strategic goals, the company determines the main activities to implement in order to achieve the strategic objectives for each indicator according to which the company will report the result of the success of these activities by the set targets for the certain key indicators.

In this step of strategy modeling, the company will have full information about the chosen strategy - from the strategic vision (the vision of the company) to the main activities that must meet a set of relationships between key success factors and activities to achieve the strategic objectives of the technology new venture.

Relationships between key success factors, strategic objectives, result indicators and activities to achieve the goals of modeling proposed in this article strategy are shown in the next table.

Table 6.Interconnection between key factors of success, strategic objectives, key performance indicators and actions for achieving the strategic objectives.

Key factors for success	Strategic Objectives	Key performance indicators	Target values (determined by the company)	Actions to achieve the objectives
Financial Perspective				
Higher earnings and growing profit	Increase the company's value	value of the company	* To be determined	Periodic analysis of the company's price
	Increasing Profit	number of sales value of net worth compared to indirect costs	* To be determined	Implementation of marketing policies to increase the number of sales Reducing the value of indirect costs
Customer perspective				
Customer preference for our product to that of its competitors	Growing relative market share	% Market share	* To be determined	Expanding the product range ad campaign
	A growing number of customers	number of customers number of new clients number of loyal customers	* To be determined	Expanding the product range ad campaign Application of optimal pricing
	Reduce the cost of acquiring new customers or retain old one	cost of acquiring a customer	* To be determined	Optimizing marketing expenses Applying optimal pricing policy
Good image of the company	Sustaining the image of a reliable company offering specialized products or services	level of customer satisfaction number of complaints	* To be determined	Applying public relations and social responsibility Receive feedback from customers
A growing number of customers	A growing number of customers	number of customers number of new clients number of loyal customers	* To be determined	Promotion of innovation and capabilities of the product or service ad campaign held at an appropriate price policy
Product Perspective				
High product quality	Offering products of exceptional quality with innovative features	degree of product innovation	* To be determined	Development and subsequent upgrade of enhancing quality innovative elements of the product or service
Product uniqueness on the market	Creating of unique product, solving problem in unique or innovative way, product differentiating from the rest products at the market	Level of satisfaction of the customers from the product and its unique features	* To be determined	Development and subsequent upgrade of enhancing quality innovative elements of the product or service
Building or participationin an	Building or participationin an eco-system of	evaluation of the popularity of the innovations in the eco-	* To be determined	Research of the key and most perspective standards in for the eco-system

eco-system of technology standards	technology standards	system number of partners in the eco-system procent of working/popular modules of the eco-system number of clients of the eco-system		Research and attracting key partners in the eco-system
				Research of the key figures in the system Development of eco-system for the chosen technology standards Promotion of the eco-system in the product's usage
Protecting the innovations with patent	Protection of the innovations with patent	Procent of innovations, developed by the companby, protected with patent	* To be determined	Receiving of patents for the product innovations, developed by the company
Building/offering an eco-system for usage of the product	Building/offering an existing eco-system for usage of the product	Procent of working modules in the eco-system Number of users of the eco-system Number of partners in the eco-system	* To be determined	Research of the key participants in the eco-system Development of the system Attracting of key partners in the eco-system Promoting of the eco-system for usage of the product
Easy access and application of the product	Ensuring of eacy access and application of the product	level of customer satisfaction number of reuests, connected with the access or uwage of the product	* To be determined	Granting of easy process of access to the product or service
Reliable product operation	Reliable product operation of the product or service	number of defects number of complaints number of canceled sales period	* To be determined	Improving the testing process of product study of the most common problems in functioning Shortening the period to remedy the identified problems in functioning
	Timely updates and product updates	period of implementation of improvements in identifying their needs number of updates	* To be determined	Shortening the period to eliminate the identified problems in functioning Shortening the period for upgrades and updates
	Reaching a high degree of customer satisfaction	level of customer satisfaction	* To be determined	Receive assessment and feedback from customers
Quality interface and facilitate the use of the product or service	Create quality interface design and facilitate the use of the product or service	positive feedback from customers level of customer satisfaction	* To be determined	Creating a Quality interface and facilitate the use of the product or service Receive assessment and feedback from customers
Price in the high price segmnt	Offering/Justifying price from the high price segment	position in the high price category	* To be determined	Researching of competitive products and prices Informing clients for product's advantages and features
Internal process perspective				
Customer awareness of	Informing customers about the benefits of the	volume of information provided positive feedback from	* To be determined	presenting information to customers about the benefits of the product or service Research on

the benefits of the product or service Customer awareness of the benefits of the product or service	product or service Informing customers about the benefits of the product or service	customers volume of information provided positive feedback from customers		the level of understanding by customers of the benefits of the product or service presenting information to customers about the benefits of the product or service Research on the level of understanding by customers of the benefits of the product or service
Maintaining a high quality product	Quality control of the product development	number of product quality inspections number of products passing the quality check	* To be determined	Develop a strategy for checking the quality of the product and the process of its implementation
	Quality product testing	number platforms for which the product is tested number of test modules of the product	* To be determined	Develop a strategy for testing the quality of the product
Quality customer service	Quality service when buying	level of customer satisfaction number of complaints	* To be determined	Process optimization in the purchase of the product Training of staff Feedback from customers
	Quality service at support	level of satisfaction of customers number of complaints avg. number of calls from customers at issue	* To be determined	Process optimization of product support Training of staff Feedback from customers
Successfully introducing innovations at the market	Successful introduction of market innovation	number of successfully drive innovation in the market as part of a product or service of new products or services	* To be determined	Study the needs of the market and consumers Develop a policy for decommissioning strategies Staff Training Analysis of the deduced innovation
	Active feedback from users to improve product	number of contributions from consumers number of users giving feedback	* To be determined	Optimization of the process of preparation of the product ideas Feedback from customers
Learning and Growth perspective				
Qualified staff	Continuous staff training	number of trainings % Staff trained % Employees passed the exams % Employees qualify for the level of qualification	* To be determined	Preparation of a staff training Training of staff Analysis of the results of the training

Synchronization and teamwork	Good teamwork	number of regular meetings of officials from different directions number of team-buildings	* To be determined	Conducting regular meetings of officials from different directions Conducting team-buildings
	Stimulate the provision of employee suggestions to improve business processes	number of team-buildings number of proposals to improve business processes		Create an environment to give suggestions to improve the business processes of employees An active policy to stimulate the provision of employee suggestions Conducting team-buildings
	Development of business processes to an active exchange of ideas and experiences between staff of different directions	number of regular meetings of officials from different directions number of team-buildings	* To be determined	Building processes and systems stimulate the exchange of ideas and experiences between staff of different directions Conducting regular meetings of officials from different directions Conducting team-buildings
Motivating working atmosphere	Building a strong organizational culture	number of team-buildings number of company-branded products in company number of regular meetings of officials from different directions	* To be determined	Creating and implementing a strategy for building a strong organizational culture
	Build trust and improve informal communication between employees	number of regular meetings of officials from different directions number of team-buildings	* To be determined	Conducting regular meetings of officials from different directions Conducting team-buildings Building a center of communication in the workplace
	Continuous staff training	number of trainings % Staff trained % Employees passed exams	* To be determined	Preparation of a staff training Training of staff Analysis of the results of the training

Key factors for success	Actions to achieve the objectives	weight of KFS (max-4 min-1)	weight of operation (up to 4-min-1)	Priority (up to 16-min-1)
Financial perspective				
Higher earnings and growing profit	Periodic analysis of the company's price	4	2	8
Higher earnings and growing profit	Implementation of marketing policies to increase the number of sales	4	4	16
Higher earnings and growing profit	Reducing the value of indirect costs	4	3	12
Customer perspective				
Customer preference for our product to that of its competitors	Expansion of the product range	4	2	8
Customer preference for our product to that of its competitors	Advertising campaign	4	4	16
Customer preference for our product to that of its competitors	Application of optimal pricing	4	4	16
Customer preference for our product to that of its competitors	Optimizing marketing costs	4	3	12
Good image of the company	Applying public relations and social responsibility	4	2	8
Good image of the company	Feedback from customers	4	4	16
High product quality	Development and subsequent upgrade of enhancing quality innovative elements of the product or service	4	4	16
A growing number of customers	Promotion of innovation and capabilities of the product or service	4	4	16
A growing number of customers	Advertising campaign	4	4	16
Product perspective				
High product quality	Development and subsequent upgrade of enhancing quality innovative elements of the product or service	4	4	16
Product uniqueness at the market	Creating of unique product, solving problem in unique or innovative way, product differentiating from the rest products at the market	4	4	16
Easy access and application of the product	Granting of easy access to the product or service	4	4	16
Building/offering an eco-systm for product's usage	Research of the key participants in the eco-system	4	4	16

Building/offering an eco-systm for product's usage	Development of an eco-system	4	4	16
Building/offering an eco-systm for product's usage	Attracting key-partners for the eco-system	4	4	16
Building/offering an eco-systm for product's usage	Promoting of the eco-system for product's usage	4	4	16
Protection of the innovations of the company with patent	Receiving of patents for the product innovations developed by the company	4	4	16
Build/participate in an eco-system of technological standards	Research of the key and most perspective technological standards for the eco-system	4	4	16
Build/participate in an eco-system of technological standards	Research and attracting of key partners for the eco-system	4	4	16
Build/participate in an eco-system of technological standards	Research of the key participants in the system	4	4	16
Build/participate in an eco-system of technological standards	Development of an eco-system with the chosen technological standards	4	4	16
Build/participate in an eco-system of technological standards	Promoting of the eco-system for the company's usage	4	4	16
Reliable product operation	Improving the testing process of the product	4	4	16
Reliable product operation	Study of the most common problems in functioning	4	4	16
Reliable product operation	Shortening the period to eliminate the identified problems in functioning	4	4	16
Reliable product operation	Shortening the period for upgrades and updates	4	4	16
Reliable product operation	Receive assessment and feedback from customers	4	4	16
Quality interface and facilitate the use of the product or service	Creating a Quality interface and facilitate the use of the product or service	4	4	16
Quality interface and facilitate the use of the product or service	Receive assessment and feedback from customers	4	4	16
Tolerated higher price corresponding to the value added	Study of competitive pricing and products	4	4	16
Tolerated higher price corresponding to the value added	Informing customers about the benefits of the product or service	4	4	16
Internal Processes perspective				
Customer awareness of the benefits of the product or service	Presentation of information to customers about the benefits of the product or service	4	4	16
Customer awareness of the benefits of the product or service	Research on the level of understanding by customers of the benefits of the product or service	4	4	16
Maintaining a high quality product	Develop a strategy for checking the quality of the product and the process of its implementation	4	4	16
Maintaining a high quality product	Develop a strategy for testing the quality of the product	4	4	16

Quality customer service	Process optimization in the purchase of the product	3	3	9
Quality customer service	Training of staff	3	4	12
Quality customer service	Feedback from customers	3	4	12
Quality customer service	Shortening the period to eliminate the identified problems in functioning	3	4	12
Quality customer service	Shortening the period for upgrades and updates	3	3	9
Successfully introducing innovations at the market	Preparation of a staff training	4	4	16
Successfully introducing innovations at the market	Training of staff	4	4	16
Successfully introducing innovations at the market	Analysis of the results of the training	4	3	12
Successfully introducing innovations at the market	Study the needs of the market and consumers	4	4	16
Successfully introducing innovations at the market	Training of staff	4	4	16
Successfully introducing innovations at the market	Analysis of the deduced innovation	4	3	12
Successfully introducing innovations at the market	Optimization of the process of preparation of the product ideas	4	4	16
Successfully introducing innovations at the market	Feedback from customers	4	4	16
	Learning and Growth perspective			
Qualified staff	Preparation of a staff training	4	4	16
Qualified staff	Training of staff	4	4	16
Qualified staff	Analysis of the results of the training	4	4	16
Synchronization and teamwork	Conducting team-buildings	3	3	9
Synchronization and teamwork	Create an environment to give suggestions to improve the business processes of employees	3	3	9
Synchronization and teamwork	An active policy to stimulate the provision of employee suggestions	3	3	9
Synchronization and teamwork	Building processes and systems stimulate the exchange of ideas and experiences between staff of different directions	3	3	9
Synchronization and teamwork	Conducting regular meetings of officials from different directions	3	4	12
Synchronization and teamwork	Conducting team-buildings	3	3	9
Motivating working atmosphere	Creating and implementing a strategy for building a strong organizational culture	4	4	16
Motivating working atmosphere	Building a center of communication in the workplace	4	4	16
Motivating working atmosphere	Conducting team-buildings	4	3	12

Motivating working atmosphere	Conducting regular meetings of officials from different directions	4	4	16
Motivating working atmosphere	Preparation of a staff training	4	4	16
Motivating working atmosphere	Training of staff	4	4	16
Motivating working atmosphere	Analysis of the results of the training	4	4	16

Setting priorities in the implementation of activities is followed by the final step to determine the people from the team responsible for the implementation of the respective activities. This table contains basic information which at the final step of creating a company-specific strategy is enriched with information about the priority of each task and responsibility, which in turn is a smooth transition to the next step in the strategic management - the implementation of the strategy and its execution. After implementation of these steps the company has outlined a strategy and is ready for its implementation.

This model of the presented strategy for a technology new venture is focused on global companies with highly innovative potential, operating at global new or emerging market.

4.   Conclusion.

Modeling strategies for technology new ventures is characterized by many features and factors of the external and internal environment for the companies. The rapid development of technological entrepreneurship requires study of the major types of strategies for entrepreneurial companies and development of the appropriate processes and tools for modeling of strategies, identifying key success factors, etc. The proposed model for strategy of technology new company is focused on companies with high degree of innovation capabilities, operating on global new or emerging market. The model contains the main factors and elements from the developed process for strategy modeling for technology new ventures. The presented model, tools, process and classification are subject of further research and experiments.

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