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O. A. KOZINA, N. N. STRATIIENKO

MODEL OF PRIMARY PIVOTS' PRIORITIZATION IN STARTUPS

Обґрунтовано важливість і корисність пріоритезації первинних опорних точок. Показано, що процес відбору опорних точок є частиною експерименту по обґрунтуванню або спростуванню первинних гіпотез про ефективність обраних параметрів у розвитку проекту. Виконано огляд методів формулювання первинних гіпотез. Проаналізовано недоліки методів пріоритезації опорних точок. Показана необхідність роздільної підготовки гіпотез з якісними і кількісними оцінками. Запропоновано модель-схема розрізнення первинних опорних точок на статичні і динамічні. На наступних етапах життєвого циклу стартапів можливі інші методи пріоритезації опорних точок.
Ключові слова: опорні точки, пріоритет, стартап, гіпотези, експеримент.

Обоснована важность и полезность приоритезации первичных опорных точек. Показано, что процесс отбора опорных точек является частью эксперимента по обоснованию или опровержению первичных гипотез об эффективности выбранных параметров в развитии проекта. Выполнен обзор методов формулирования первичных гипотез. Проанализированы недостатки методов приоритезации опорных точек. Показана необходимость раздельной подготовки гипотез с качественными и количественными оценками. Предложена модель-схема различения первичных опорных точек на статические и динамические. На последующих этапах жизненного цикла стартапов возможны другие методы приоритезации опорных точек.
Ключевые слова: опорные точки, приоритет, стартап, гипотезы, эксперимент.

Importance and useful of primary pivots prioritization is grounded. It is shown that the selection of pivots is part of the experiment to confirm or disprove the primary hypotheses about the effect of the selected parameters on the development of the project. An analytical review of the methods for primary hypotheses formulating is carried out. The disadvantages of some methods of pivots prioritizing are analyzed. The necessity of separate preparation of hypotheses having qualitative and quantitative estimations of stakeholders is considered. A model-scheme of distinguish primary pivots on a set of static and dynamic ones is developed. Possibility to change the method of prioritizing pivots in next phases of the life cycle of a startup is accented.
Keywords: primary pivots, hypothesis, startup, priority, experiment.

Problem definition. The basis of the Lean Startup concept is a cycle of evolution: creation-measurement-learning, where the beginning of a cycle is a hypothesis, and the end is knowledge that is consumed by the evolution of the idea itself and can grow into the products necessary for clients. For startups trying to find product-market fit, lots of metrics can actually distract from the real work of launching a sustainable business. Tracked together, such metrics like: Burn Rate, Activation Rate, Daily Active Users to Monthly Active Users Ratio, Customer Churn Rate, Revenue Growth Rate help founders keep a pulse on the viability of the startup and signal when a course correction is in order [1]. It's easy to measure hundreds of different metrics for growing business. They answer the questions of how should a startup founder might measure the business at the highest level [2].

But in order to determine whether the startup is going to crash due to loss of interest of clients, it is necessary to continuously monitor the main parameters of the product being created, keep in touch with customers and stakeholders and most importantly then analyze received feedback. Where should you make the most effort to realize a startup? How correctly to formulate the primary hypotheses about the value of the product for potential customers? After all, depending on these formulations, you must choose and complete an experiment to collect responses and allocate static pivots with the highest priority or reconfigure the product and the entire business scheme as a whole.

Analysis of publications and recent researches. There are a number of reasons that lead to success or failure of startups. Using the model of startup management [3] founder of the startup should analyze the requirements of the potential market for a still unformulated idea yet at Origin stage of a startup. This is quite difficult, because most recommendations on this topic are very general [4–6]. It is clear that it is quite dangerous to rely on intuition and it is necessary actually to make multicriteria optimization of the objective function in conditions with high degree of uncertainty in the shortest time.

Identification, description and understanding of the essence and business value of the parameter compose a hotspot in planning the experiment to determine its priority. For this purpose hypotheses about value of selected pivots are usually formulated. There are such classes of hypotheses: Persona Hypothesis, Problem Hypothesis, Value (motivation) Hypothesis, Value Hypothesis, Usability Hypothesis, Customer Creation Hypothesis. Clever formulation of such hypotheses allows to answer a lot of questions, on which startup owners must have correct and objective answers even in Origin phase. These are examples of such questions that can also be used to write interviews with the stakeholders [7]: Does persona with interest to your project exist? Can you name or find 5-10 examples? Do you understand potential clients really well? Do you understand how they relate to your area of interest? Do the problems you're solving really exist? Is it more of a 'job to be done' or a need, desire? How important is the problem or problems? How is potential client solving them now? How much better than the best alternative is your product at delivering on the problem? Can you get this client's attention? Capture their interest? Connect with a strong fundamental desire?

As seen, some of these questions will give qualitative estimates of startup's pivots. Can they be considered as such, from which it is possible to obtain

quantitative estimates for prioritizing pivots? Most of the recommendations for identifying pivots, especially primary ones, are limited to topics for creating plan of interviews or a list of questions that need to be answered by experienced clients or experts who will define priorities to pivots [8].

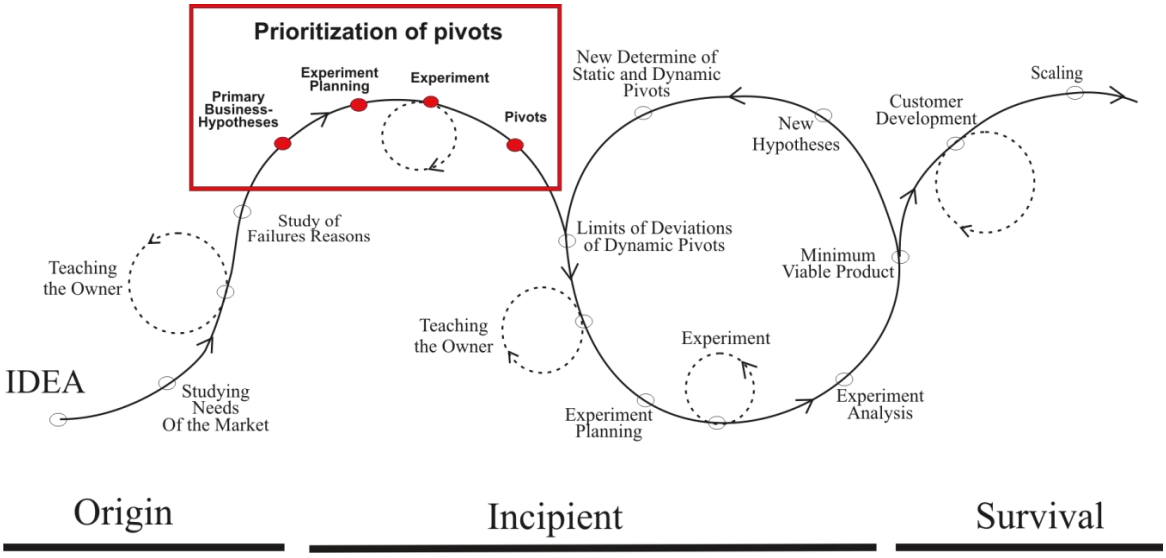

Fig. 1 – Generalized model of the initial stages of a startup growing

But priority-setting decisions in startup management should be based on evidence, objective reasons and principles accepted by the stakeholders as relevant for needs in their contexts [9].

In general, primary hypotheses reflect on the innovative functional parameters of a startup and represent the criteria for evaluating of business idea. In IT-projects, the criteria for evaluating an idea are considered as user requirements and for them the ranking techniques have developed [10]. Alternatively, for IT-startup there is possibility to create a realistic demo version of the product, post it online, attract to it some traffic and test required pivots. But if your startup is not IT-project? Or how do select static pivots if your startup has not passed on MVP phase?

Thus, today there is no model of prioritization of either hypotheses or pivots at various stages of the startup life-cycle.

The purpose of the work is to develop a non-specific model of separating the primary pivots of a startup according to obtained priorities, which should be applicable in various business areas.

Results and discussion. Let that for separates pivots it is necessary represent primary hypotheses in testable format that allows a structured experiment to prove or disprove them. The group of unchangeable static pivots possesses the property of unique identification of the innovation idea of a startup, and a group of changeable dynamic pivots enable the adjustment of the entire project and allow create a viable business model at the next stage. So, objective numerical testing of primary hypotheses is the process of planning, executing and analyzing the results of an experiment for distinguish on static and dynamic pivots of the project

In same time, at first, for planning the primary experiment to confirm the main business parameters of a startup, it is necessary to form a list of primary pivots that can be estimated numerically by potential clients and stakeholders of the project. Primary pivots, the answers to which can be expressed in a qualitative form only, must be additionally estimated by discrete choice experiments (DCE) [11]. Respondents choose their preferred option from set of answers, each of it varying over a range of scores. Then these individual answers are aggregated.

Secondly, it is necessary to formulate a list of primary hypotheses. Then, multiple-criteria decision analysis (MCDA) technique should be selected in order to plan an experiment for collecting opinions of stakeholders. According to all this propositions, some steps shown inside the rectangular on Figure 1 had been reformulate into the algorithm of determine of high-priority static pivots (Fig. 2).

Selection of MCDA technique depends first of all to current stage of the startup in its life-cycle. That is why the MoSCoW technique used for prioritizing primary pivots in a collaborative fashion is not good choice. As known, the MoSCoW method prescribes to distinguish between parameters on [12]:

- Business Value hypotheses. This parameter provides the most business value;
- Technical Risk hypotheses. This parameter gives a significant risk of project failure if not implemented successfully;
- Implementation Difficulty hypotheses. This parameter is the easiest to implement;
- Urgency hypotheses. This parameter have a high degree of urgency be implemented and in used by the stakeholders.

In incipient stage of startup life-cycle there is lack of rationale background how to rank competing pivots: why something is must rather than should.

In this situation method Quality Function Deployment (QFD) which focuses solely on what a

business needs to do to satisfy its stakeholders has good view. QFD supposes that overall stakeholders' satisfaction can be represented by a linear additive value function of the degree of attainment of stakeholders' demands [13].

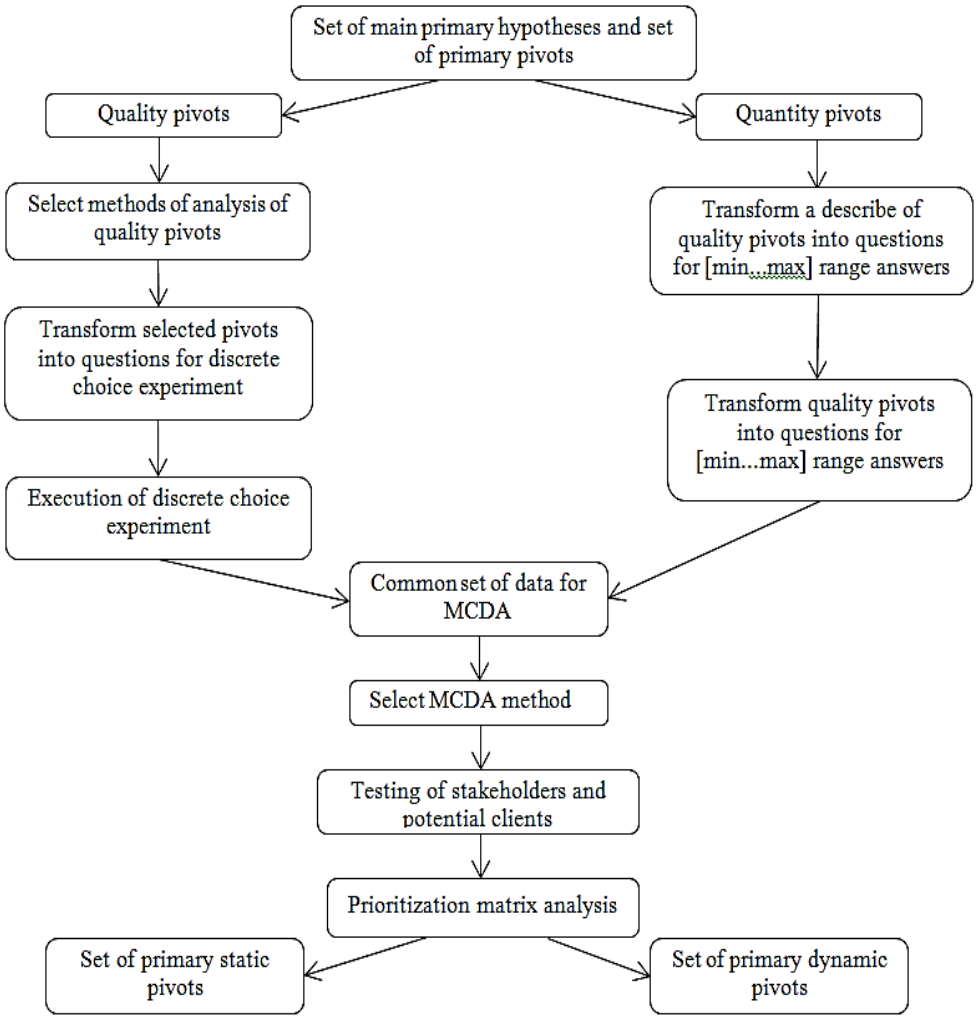

Fig. 2 – Algorithm of distinguish static and dynamic primary pivots by priorities

But it means that all pivots should belong to the same level of abstraction and it's impossible to analyze together parameters related to cost, the length of the product life cycle, long-term strategy or available resources of startup. Additionally, all pivots should be non-conflicting.

So, in order to take important decision in very high level of uncertainty which exist in prioritization of primary pivots we propose to use the Prioritization Matrix. In the Prioritization Matrix each row describes a type of primary hypotheses, for example:

- Business Value hypotheses. This parameter provides the most business value;
- Technical Risk hypotheses. This parameter gives a significant risk of project failure if not implemented successfully;
- Implementation Difficulty hypotheses. This parameter is the easiest to implement.
- Urgency hypotheses. This parameter have a high degree of urgency be implemented and in used by the stakeholders. Each column in the Prioritization Matrix describes the pivots from common set.

Demonstration example of filling the Prioritization Matrix for the smart house startup represent in Table 1, where the [1...9] range is used for estimation of pivots and the [0...5] range is used for estimation of weights of hypotheses.

Table 1 – Example of filling the Prioritization Matrix for the smart house startup

Pivots	Hypotheses				
	Business Value	Technical Risk	Implementation Difficulty	Urgency	Total
Weight of hypothesis	4	5	2	3	
Engineer support 24/7	2	0	1	1	13
Mobile access to admin panel	0	2	2	2	**20**
Multilingual interface	1	1	1	0	11
Size of the box ≤ 10×10 cm	3	3	1	4	**41**

Weights of hypothesis should be filed by team of the startup. For stakeholders' tests can be used any uniform

[min…max] scale with an unrestricted range. Results of stakeholders' tests give the relative importance of the pivot to according hypothesis and are filed in the Prioritization Matrix also. Than results of the multiplication of these scores on weight of according hypothesis are cumulates in total column. Pivots with the highest total scores receive greater priority than those with lower scores.

Pivots with maximum priority compose the set of primary static pivots; remaining pivots form the set of primary dynamic pivots. From table 1 pivots «Size of the box ≤ 10×10 cm» and «Mobile access to admin panel» form the set of primary static pivots and pivots «Engineer support 24/7» and «Multilingual interface» form the set of primary dynamic pivots.

This easy technique can be easily accomplished and repeat with new values in short time, but it may also lead to the use of incorrect unjustified assumptions. And the main difficulty lies in the inability to immediately determine that obtained results about pivots' splitting are incorrect, because at this stage there is no reference data.

Starting from the next cycle, with repeated prioritization of pivots, it is necessary to revise and reformulate the hypotheses, expose them to new weights or even use other prioritization techniques for pivots. Because there are already results of primary prioritization, then it is possible to evaluate probabilities of existing of first and second kind errors, and also to develop a mechanism for returning the business-model to the previous state.

Conclusions. The problem of definition of most important parameters in innovation project on the primary stage is considered. The subject area is examined; an analytical review of the methods for solving the indicated problem is made. The developed model of distinguish between static and dynamic pivots based on the analysis of primary hypotheses allows to establish the priorities of pivots in the initial phase of a startup from any industry. Using of proposed model can reduce the probability of startup failures at an early stage. Other models of pivots' prioritization can be used at other stages of startup life-cycle.

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Відомості про авторів / Сведения об авторах / About the Authors

Козіна Ольга Андріївна – кандидат технічних наук, доцент, Національний технічний університет «Харківський політехнічний інститут», професор кафедри обчислювальної техніки та програмування; тел.: (050) 526-46-60; e–mail: kozina@kpi.kharkov.ua.

Козина Ольга Андреевна – кандидат технических наук, доцент, Национальный технический университет «Харьковский политехнический институт», профессор кафедры вычислительной техники и программирования; тел.: (050) 526-46-60; e–mail: kozina@kpi.kharkov.ua.

Kozina Olga Andriivna – Candidate of Technical Sciences (Ph. D.), Docent, National Technical University "Kharkiv Polytechnic Institute", Associate Professor at the Department of Computer Equipment and Programming; tel.: (050) 526-46-60; e-mail: kozina@kpi.kharkov.ua.

Стратієнко Наталія Костянтинівна – кандидат технічних наук, доцент, Національний технічний університет «Харківський політехнічний інститут», доцент кафедри програмної інженерії та інформаційних технологій управління; тел.: (057) 707-64-74; e-mail: strana@kpi.kharkov.ua.

Стратиенко Наталия Константиновна – кандидат технических наук, доцент, Национальный технический университет «Харьковский политехнический институт», доцент кафедры программной инженерии и информационных технологий управления; тел.: (057) 707-64-74; e-mail: strana@kpi.kharkov.ua.

Stratiienko Nataliia Kostiantunivna – Candidate of Technical Sciences (Ph. D.), Docent, National Technical University "Kharkiv Polytechnic Institute", Associate Professor at the Software Engineering and Management Information Technologies Department; tel.: (057) 707-64-74; e-mail: strana@kpi.kharkov.ua.