

Managing Risks of Venture Entrepreneurship

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Received: June 13, 2014 Accepted: July 15, 2014 Online Published: November 14, 2014

doi:10.5539/ass.v10n23p191

URL: <http://dx.doi.org/10.5539/ass.v10n23p191>

Abstract

The authors ground the necessity of managing risks of venture entrepreneurship; construct algorithm of formation and introduction of a system of risk-management while operating venture entrepreneurship; analyze the rationality of its realization at the regional scale and influence on venture entrepreneurship; and conduct regressive analysis of dependence of financial economic state of enterprise LLC 'Innovazstroy' on introduction of the developed system of risk-management. The study is a regression analysis, with which the authors calculated the coefficient covariance determination of approximation and draw conclusions about the dependence between introduction of risk-management system and growth of clear profit of LLC 'Innovazstroy'. Developed as a result of the study the model of quantitative and qualitative measuring risk small enterprises all over the world use: risk evaluation (VAR), maximal potential risk (MPE), risk-appétit and risk stock, in order to measure and to unite market, credit, operational and other risks. It is necessary for entrepreneur to know actual cost of risk, which influences on their activity.

Keywords: venture entrepreneurship, risk management, innovational economy, economic growth, economic effectiveness

1. Introduction

The beginning of the new century is characterized by new approaches to national economy functioning. Nowadays the overwhelming majority of the countries of the world consider development and introduction of innovational technologies as a necessary basis of economic growth provision.

Innovational economy is grounded on scientific knowledge and innovations, on readiness to realize inventions in manufacturing practice. An important feature of innovational economy consists in its ability to lead the results of scientific labour to consumer by market mechanisms, providing thus effectiveness of practical use of innovational product. According to present evaluations nowadays in the developed countries from 50 to 90% of GDP growth is determined by innovations and technological progress (Popkova et al., 2013a).

Under these conditions the more popular becomes the venture entrepreneurship, which is the driver of development of innovational economy. Development and introduction of innovational projects is related to high risks, and in this connection development of mechanisms on effective managing these risks for development of venture entrepreneurship is needed.

2. Method

The developed algorithm of introducing risk-management system was introduced at a venture enterprise LLC 'Innovazstroy' of Volgograd in 2012. The Table 1 shows the changes in financial-economic indicators of analyzed venture enterprise in 2012-2013.

As it is seen from Table 1, in the result of the system of risk-management the financial economic indicators of the enterprise under the research significantly improved. So, the revenue has grown by 77,409.36 thous. rub. (128.18%), clear profit has grown by 104,236.57 thous. rub. (336.46%), profitability to revenue has grown 2.6 times, profitability to expenses – 4.5 times.

Table 1. Financial economic indicators of LLC 'Innovazstroy' in 2012-2013

Financial economic indicators	01.01.2012	01.01.2013	Increase, thous.rub.	Growth rate, %
Revenue, thous. rub.	274 730,90	352 140,16	77 409,26	128,18%
Production cost, thous. rub.	224 153,62	165 342,15	-58 811,47	73,76%
Pre-tax profits, thous. rub.	50 577,28	186 798,01	136 220,73	369,33%
Profit tax, thous. rub.	11 153,20	38 478,54	27 325,34	345,00%
Clear profit, thous. rub.	44 082,90	148 319,47	104 236,57	336,46%
Profitability (to revenue)	16,00%	42,12%	0,26	263,25%
Profitability (to expenses)	20,00%	89,70%	0,70	448,52%
Cost capacity	80,00%	58,00%	-0,22	-72,50%

In order to detect the dependence between introduction of risk-management system and growth of clear profit of LLC 'Innovazstroy' let us conduct a regressive analysis on the basis of data of Table 2.

Table 2. Dependence between introduction of risk-management system and growth of clear profit of LLC 'Innovazstroy'

Year	2012				2013				
	Quarter	1	2	3	4	1	2	3	4
Risk, %	50	48	45	42	40	37	36	33	
Clear profit, thous. rub.	11,020.7	11,170.	10,920.	10,970.	37,079.	37,329.	36,929.	36,979.	
	3	73	73	73	87	87	87	87	

As the result of accounting using Mathcad program were achieved the values $b_1=3,2$, $b_0=-1,4$ and the following equation of pair linear regression:

$$\hat{y}(x) = 3,2 - 1,4x \quad (1)$$

Index $b_1=-1,4$ shows that at decrease of risk by 1% increase of clear profit by 1.4 thous. rub. occurs. Correlation coefficient for the obtained model is $r_{xy}=0,926$. This means, that it is possible to make a conclusion that there is a close interconnection between the risk level and volume of clear profit of LLC 'Innovazstroy'. Let us account the determination coefficient:

$$D = r_{xy}^2 * 100\% = 92,6\% \quad (2).$$

Consequently, the growth of clear profit of LLC 'Innovazstroy' by 92.6% is explained by risk decrease. Let us evaluate the model of linear regression by a mean error a approximation, which constitutes 5% for the obtained model. Therefrom it is possible to make a conclusion, that the model is qualitative. Let us evaluate the model of linear regression by Fisher's F-criterion. Let us pull forward a zero hypothesis: $H_0: b_1=0$.

$$F = \frac{r^2}{1-r^2} * (n-2) = \frac{0,92^2}{1-0,92^2} * (8-2) = 33,06 \quad (3).$$

$F_{tbl}(crit)=5.99$. Because $F_{obs} > F_{tbl}$, then equation of regression is significant at given level. That is why hypothesis H_0 is not correct.

That is why accordingly to the obtained equation of linear regression, at decrease of risk by 1%, increase of clear profit by 1.4 thous. rub. occurs. The connection between considered characteristics is strong and direct ($r_{xy}=0,926$). Variation of clear profit by 92.6% (D) is explained by risk variation. Approximation error (5%) shows that good correspondence of planned and factual data. Because $F_{obs} > F_{tbl}$, hypothesis H_0 about

occasional nature of detected dependence and statistic insignificance of equation's parameters, indicators of strength of links is declined.

Graphically the detected dependence can be illustrated by the following way (Figure1):

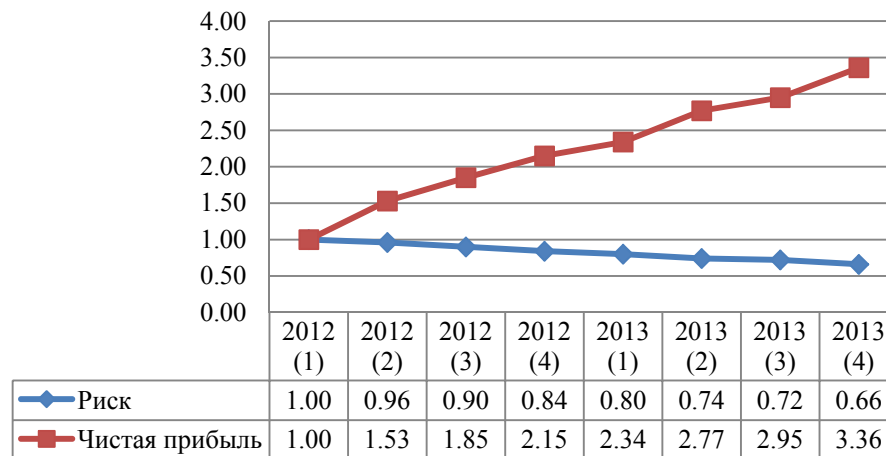


Figure 1. Graphical representation of dependence between decrease of risk and increase of clear profit of LLC 'Innovazstroy' in 2012-2013

In order to evaluate effectiveness of introducing the risk-management system in LLC 'Innovazstroy' let us divide positive effect of its introduction, expressed in increase of clear profit, by the costs of its introduction, we have $104\,236,57/35108,00=2,96$. Consequently, the positive effect from introduction of the risk-management system in the analyzed enterprise almost three times exceeds costs on its introduction, which is an evidence of high effectiveness of this system.

3. Results

Characterizing the system of risk-management as algorithm of realization of certain interconnected actions, one should consider that organization in broad sense represents totality of processes and actions, leading to formation and improvement of interconnections between the components of the whole (Volosatova et. al., 2014).

Having considered the main issues of formation of risk-management structure and system of risk classification, we suggest an algorithm of forming system of managing entrepreneurial risks, which consists of six consequent stages:

- 1) detection and identification of risks by using methods of evaluating risks (qualitative, quantitative, mixed);
- 2) analysis and prioritization with further reverification of interdependencies and origins of most important risks;
- 3) planning of responding to risks;
- 4) monitoring and financial control of risks;
- 5) risk correction while financing entrepreneurial activity;
- 6) analysis of financial results.

This research offers an algorithm of formation and introduction of risk-management while running venture entrepreneurship (Figure 2).

One of the levels of system of risk-management is its evaluation.

The model of risk evaluation, in our opinion, should be imposed the next requirements:

- 1) adequacy to modern external and internal conditions of enterprise existing;
- 2) reliability and objectivity of conclusions;
- 3) sufficient accuracy;
- 4) economic rationality (costs on conducting analysis should not exceed additional revenues from using results of evaluative activity).

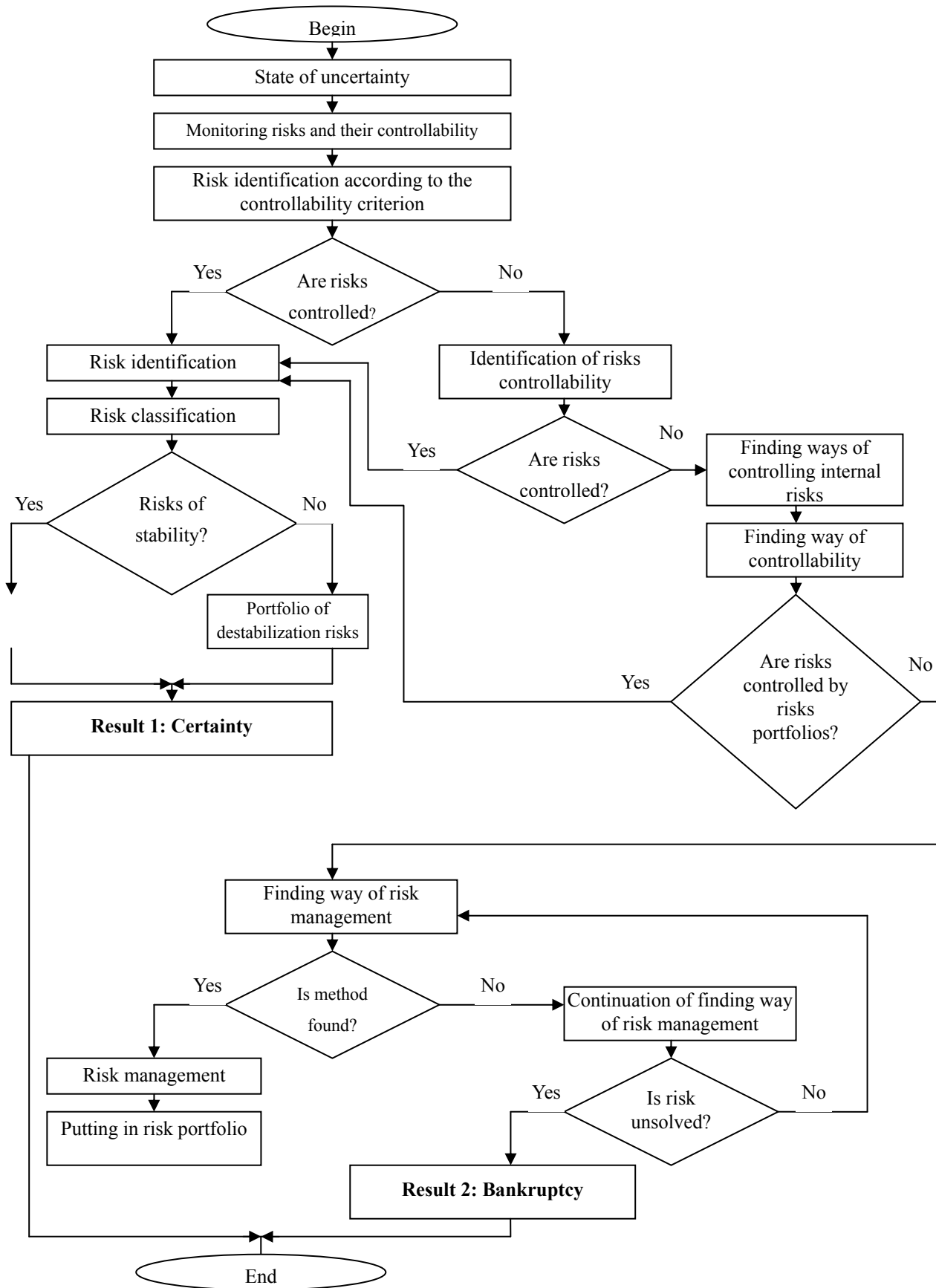


Figure 2. Algorithm of risk management while operating venture entrepreneurship

Consider an algorithm of realizing methodic of risk-management in venture entrepreneurship more fully. Business is constantly in state of uncertainty, because the external environment is absolutely unpredictable, which is determining the necessity of monitoring risks and their controllability, and then identification of risks by criterion of controllability (Kirsch et al., 2009).

In the result of conducting measures, it is necessary to determine if the risks are controlled. In the case of uncontrollability it is rational to find ways of controllability of external risks, and methods and approaches of controllability of internal ones. In the case when in the result of conducted searches such methods were not found, functioning of enterprise can be quitted, otherwise, it is necessary to transit to classification of risks according to stability. Nowadays companies of small business have to develop culture of risk-management, as necessary condition for achieving high level of entrepreneurial activity with low level of risks. The culture of risk-management is more developed in large enterprises, relating to financial sector of economy, as most dynamic at the moment.

Organization of risk-management represents a system of measures, directed on rational combination of all its elements in unite technology of risk management process. Consider the risk-management system we developed for venture entrepreneurial activity, and precisely processes of formation and its further introduction at enterprise.

The first stage of organizing risk-management is detection and identification of risks, that is determination of type of risks, which would be an object of analysis with the help of use qualitative and quantitative approaches. For that, it is possible to use methods of forecasting, exactly, method of mathematical extrapolation, which assumes mathematical description of regularities of business-process, occurred in the past, and extrapolation it on future.

It is also rational to use the methods of expert forecasting, including scenary method and Delphi technique. The last supposes conducting surveys in 3-4 rounds, avoiding personal contact of experts and respondents in order to support anonymity of evaluations, critics and argumentation. The scenary methods is constituted in foreseeing situations by a group of some people, who define potential consequences (Mulcahy 2013).

Also within the framework of the first stage one should determine the targets of risk and targets of risky capital investments. The essence of risk within the trade sector, as it was established before, is the result, which should be obtained and which can be expressed by gain, benefit, revenue, etc. in this case, as in any other entrepreneurial activity, the target of risky capital investments is earning maximal profit.

After quantitative and qualitative identification of risks it is necessary to switch to the second stage – analysis and prioritization of financial and specific risks. With the help of analysis transformation of information about risks into form, simplifying decision-making, occurs. Prioritization assumes detection of most important risks, which would be worked with.

The third stage is planning of respond to risks, which assumes process of developing methods of increasing potential opportunities and decreasing threats of risks. Planned measures on responding to risks should correspond the level of risk, be efficient, realistic and timely.

The next stage includes monitoring and financial control of risks, that is determination of remaining risks, realization of plan of risk management and evaluation of measures on their optimization. The most wide-spread system of monitoring is Strategic Issue Management (SIM), the advantages of which are risk sensitiveness and opportunity of preventive risk management.

Correction of risks while financing entrepreneurial activity is the fifth stage of algorithm. Correction of risks assumes removal of remaining risks while optimal financial planning economical activity (Brinkerhoff, 2000).

At this stage of organization of risk-management system the main role should belong to financial manager, their psychological qualities. Financial manager, working with risk issues (risk manager), should have two rights: a right of choice and a right of responsibility for it. Besides that, managers of risks of transnational corporation also have a veto on realizing operations in the markets of the developing countries and dispose certain levers of controlling foreign subsidiaries through programs of risk management they develop, which consider risk factors all the word over.

As a conclusion it is necessary to analyze financial results of entrepreneurial activity, to evaluate how fully the risks are eliminated, and to determine the ways of enterprise development in future.

4. Discussion

Any action, related to risk, is always purposeful, because absence of a purpose makes any decision, related to risk, senseless. Purposes of risk and risky capital investments should be clear, concrete and corresponding to risk and capital. With the help of correct formulation of risk, risk information, rules and standards, administrative decisions and experimental project group analysis and prioritization of risks are conducted. As the result, the range of main risks, documentary description of them and risk probability (Letts et al., 1997).

Risk probability represents possibility of realization of risk consequences, described by statements. Basing on analysis a the obtained information, and taking into account purposes of risks, it is possible to give a definition of probability of events, including insured accidents, by detecting the extent of risk and evaluating its cost. It seems to be necessary to determine required limits for practical analysis of risk.

One should consider determining annual value of abilities of a company, expressed in non-admission of risks, in particular cases – calculation of losses, significant by economic consequences. The main purpose of analyzing risks is orientation of resources, necessary for removal of risks, to the sector of largest business. Conducting additional analysis is able to detect those directions, which can give certain benefits in the case of their careful studying in future.

As the model of quantitative and qualitative measuring risk small enterprises all over the world use: risk evaluation (VAR), maximal potential risk (MPE), risk-appétit and risk stock, in order to measure and to unite market, credit, operational and other risks. It is necessary for entrepreneur to know actual cost of risk, which influences on their activity (Low, 2006).

Within the framework of this, it is necessary to define the cost of risk as factual losses, which entrepreneur bears in the particular period of their activity, and costs, necessary for decrease the size of these losses or costs on payment of such damages and their consequences. Have conceived a right evaluation of actual cost of risk, the financial manager can objectively conceive the size of possible losses, which defines the opportunities for further ways to their prevention or decrease. In the case of absence of opportunities to prevent losses, the manager has to provide their compensation.

Response to risk can occur with the help of avoiding risks, transmission of risks, decreasing risks or risk taking. In the first case occurs complete avoidance of threat or weakening of risks, being under threat. Risks can be transmitted to the third party, which means to transfer responsibility on others. Owing to transmitting of risks, essential stabilization of expenses on risk damage compensation is achieved.

The most widespread form of transmitting risks is damage insurance, when for fixed payment the responsibility for damage compensation for this or that factor is taken by another organization. The advantage of insurance and other forms of transmission and separation of responsibility by risks is constituted in fixation of expenses by risk articles, which significantly simplifies budgetary and financial planning, and, as consequence, potentially encourages decrease of expenses on payment of interest of short-term obligations.

The most optimal is decrease of risk probability with the help of preventive measures. If none of the three methods were impossible to realize, the risk remains to be take risk. The choice of method of response to risk depends on right understanding of risk extent, which constantly threatens people, property, and financial results of economic activity. For that, different companies develop different approaches to risk evaluation at enterprises. So, within the structure of largest investing bank Lehman Brother's the policy of risk-management was conducted within the framework of specialized committee and subsidiaries by analytics of market risk, credit risk, operating risk, model verification.

Evaluation and re-thinking of methods of risk-management should be developed more carefully, because they constitute the basis for further effective work of a small enterprise. In this case, it seems for us to be necessary:

- To evaluate economic activity of present program of risk management;
- To study influence of potential changes of external material, economic and political conditions on structure of risks;
- To take necessary measures on improving strategy and tactics of managing risks, accepted in company.

Evaluation and re-thinking appear to be the most difficult stages from the subjective point of view, because they are related to changes of established working order, necessity to retrain staff in order to develop primary skills of risk management, which can reevaluate serious basis, which the work is constituted on.

In order to form effective system of monitoring and controlling it is necessary to determine zones of monitoring, to provide criteria of incoming data. In the result of correct controlling and monitoring, the measures on removal or prevention of risks would be carried out with success.

In order to manage risk specialized groups of people, for example, sector of insuring transactions, sector of venture investments, department of risky capital investments (that is venture and portfolio investments), etc. can be organized.

While choosing strategies and methods of risk management, use of certain stereotype, made up from experience and knowledge of risk manager during their work, which serves as a basis of getting automatic skills, occurs. Getting skills of stereotyped actions offers the manager an opportunity to act operatively and more optimally in such situations. In the absence of single-type situations risk manager should move on directing from stereotype decisions towards looking for optimal, acceptable for them risky decisions (Maitland, 2006).

At that it is necessary to consider the multi-versioning of risk-management system, related to diversity of approaches to solving administrative problems. Multi-versioning of risk-management assumes union of standard and non-commonplace of financial combinations, flexibility and singularity of these or those actions in a particular economic situation. Under such conditions, the most significant within the process of risk-management is the purpose-settling, which corresponds with economic interests of management object.

5. Conclusion

Thereby, managing risks of entrepreneurial entities is one of the most important issues of management in the contemporary stage. The responsibility of business for detecting and timely risk processing at all levels of management is increasing. Observance of the corporate rules of risk management not only increases revenues, but gives additional opportunities for expanding entrepreneurial activity, getting partners and entering the international market.

In whole, risk management should be considered as capacity of entrepreneurial structures, able to take the risks and to start managing them, to form and run interactive algorithms of transforming uncertainty, which should encourage increase of competitiveness of a venture enterprise, which nowadays resists risks of internal and external environment (Perlmutter & Adams, 1990).

At that, development of venture entrepreneurship at the regional level, as prescribed, is in direct dependence on possibility to manage risks, which increases due to using algorithm of developing and introducing risk-management systems within the framework of venture entrepreneurship. This algorithm, including risk monitoring and identification, represents the process of step-by-step determining opportunity to control risks by use of setting controllability with the help of actual portfolios of risks (stability risk portfolio, destabilization risk portfolio) (Al Dhaafri et al., 2014).

Using the suggested algorithm during developing and introducing risk-management systems in a regional venture sphere can lead to possibility of venture enterprises to resist destabilization of environment and transformation of uncertainty conditions.

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