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## **The risk in strategic decisions of small innovative companies - model approach from the perspective of the entrepreneurial process**

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### **Abstract**

This paper presents an attempt at a model approach to strategic decisions related to entrepreneurial activities associated with risk in terms of the process. Describing the relationship between risk and resources, the paper indicates the possible use of the model for empirical research.

It seems, that the use of the relationship between the level of risk and characteristics of resources along with processes associated with their transformation has the potential to organise the analysis of entrepreneurial behaviour in terms of both the theoretical and the empirical analysis. The presented approach provides opportunities for reflection on the behaviour of enterprises in terms of the resource-based theory and the competence theory. In addition, the linking of the entrepreneurial process with characteristics of resources and the level of risk can facilitate conducting empirical analyses concerning entrepreneurial behaviour, the relation of entrepreneurial strategies to the economic analysis or finally the impact of public support on entrepreneurial behaviour.

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## **Risk in strategic decisions of small innovative companies – a model approach from the perspective of the entrepreneurial process<sup>3</sup>**

### **Introduction**

Small business innovation has been the subject of many studies in the recent years at the level of management and economics, worldwide [Storey 1994, Shane 2004, Acs and Audretsch 2004, Mazzarol and Reboud 2009], as well as in Poland [Matusiak 2011, Stawasz 2011, Poznańska and Kraj 2009, Świadek 2011, Jasiński 2006, Głodek 2005, Niedzielski 2003]. Nevertheless, this issue remains not fully explored. In particular, the nature of development of undertakings based on new knowledge, which is the basis for innovation, has been modestly explored [Mazzarol and Reboud 2009, Acs et al. 2009, Łobacz 2012]. Still little is known about processes implemented by innovative entrepreneurs, including decision-making processes determined by the level of risk and the perception of this risk.

In this context, it seems reasonable to undertake research on business innovation in terms of the process, taking into account methods and motives of actions carried out by entrepreneurs which determine their behaviour. In order to make it possible, models

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allowing a systematic approach to entrepreneurial processes, which are often described as chaotic, highly heterogeneous and difficult to express in a model, are needed.

This paper presents an attempt at a model approach to strategic decisions related to entrepreneurial activities associated with risk in terms of the process. Describing the relationship between risk and resources, the paper indicates the possible use of the model for empirical research. Analysing the existence of such connections, the authors concentrate on formulating assumptions for considerations concerning the entrepreneurial process and strategic decisions. It should be noted that this paper is only an introduction to further studies in this field.

### **1. Development of resources in the entrepreneurial process**

According to Schumpeter's theory, entrepreneurship is seen as an active attitude directed at the implementation of new ideas designed to enter the market and replace existing business systems which are less efficient in socio-economic terms [Schumpeter 1934]. According to this approach, entrepreneurial processes should be linked directly to the action to launch a new offer onto the market, not necessarily to the establishment of a new company [Casson 1982, Amit and Schoemaker 1993, Shane and Venkataraman]. It can be defined as an activity by which self-employed individuals or individuals working within an organisation<sup>4</sup> take actions in order to exploit emerging opportunities in an innovative, proactive and risk-sensitive way [Todorovic and Suntornpithug 2008].

The level of these three factors, i.e. innovativeness, proactiveness and risk-taking, defines the so called entrepreneurial posture<sup>5</sup>. It refers to processes, practices and decision-making methods characteristic of entrepreneurs who pursue new ventures [Lumpkin and Dess 1996]. Therefore, it impacts the commitment to the implementation of processes associated with the development of a new undertaking. Additionally, this

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<sup>4</sup> This approach encompasses the so called corporate entrepreneurship or intrapreneurship concerning the implementation of entrepreneurial activities within an existing organisation. This phenomenon is possible only when the existing organisation is characterised by the entrepreneurial culture as opposed to the corporate culture. See, e.g.: Hisrich and Peters 1986.

<sup>5</sup> This phenomenon is also referred to as an entrepreneurial strategy [Su et al.], entrepreneurial business orientation [Lu et al. 2006] or entrepreneurial orientation [Todorovic and Suntornpithug 2008].

posture allows to carry out risky activities in a dynamic environment. It also facilitates actions based on early signals coming from the internal and external environment [Lumpkin and Dess 1996]. It is, therefore, a set of interrelated processes comprising many different activities related to the identification of new opportunities and possibilities, as well as investments in the resource base of the company [Alvarez and Busenitz 2001]. Hence, it is often defined as a state of mind of companies involved in the implementation of new business ventures [Rauch et al. 2004].

The essence of the entrepreneurial process is, therefore, seeing opportunities and transforming them into market offers [Kuratko, R. Hodgetts 2004]. They should be perceived as a process, carried out at the level of the individual and the organisation, by which new ideas are introduced to the market [Kao 1991, p. 25]. Thus, the entrepreneurial process involves more than just the activities associated with the company's operations<sup>6</sup>. Mazzarol [2011] sees it in the context of the identification and exploitation of market opportunities, as well as the acquisition of resources to meet the perceived market need. From this perspective, entrepreneurship is based on two fundamental elements:

- search for market opportunities and
- configuration of resources<sup>7</sup> that enable taking advantage of these opportunities.

It follows that the entrepreneurial process is associated with the search for and transformation of resources that enable the achievement of adopted goals. These resources can be owned by the entrepreneur or be beyond his/her direct control [Stevenson and Jarillo 1990]. According to the resource based-view [Penrose 1959, Barney 1991], resources can be defined as assets, tangible and intangible, permanently or temporarily associated with the company, that enable the company to take actions, implement strategies and increase efficiency [Wernerfelt 1984]. Resources include assets,

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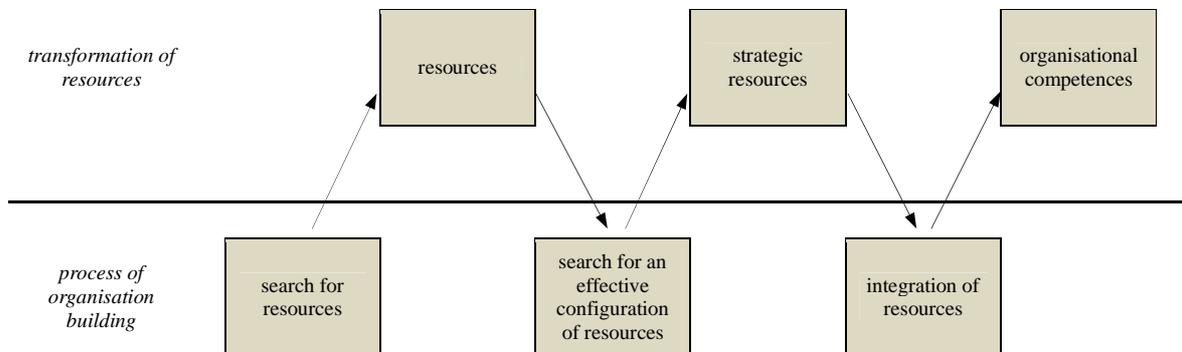
<sup>6</sup> This approach indicates the whole life cycle of a company, from its inception to its exit from the market. Various models and concepts are widely presented in: *Przetwianie i rozwój...*, pp. 62–64 and 71–104.

<sup>7</sup> In Casson's models, the entrepreneur is an important element of the market game, responsible for coordinating scarce resources [Casson 1982]. It is consistent with Say's approach perceiving the entrepreneur as an entity responsible for economically advantageous relocation of scarce resources in the economy [Say 1815].

capabilities, organisational processes, special attributes, knowledge, etc. According to the resource-based theory, the company needs to acquire and develop its resources, as well as capabilities that enable their use over time in order to move through subsequent phases of development [Wright et al., 2007]. This approach is developed in terms of the process by the theory of competence, which describes how resources are developed and converted to another form [Freiling 2004, Freiling 2008].

The entrepreneurial process is a continual search for resources and configuration of these resources so as to ensure the possibility of optimal performance. Resources and competences assigned to the company distinguish this company from other entities, which allows the company to operate in the market in a way which is different from its competition [Barney 1991]. According to this approach, capacity building is similar to the creation of routines specific for the given organisation [Nelson and Winter 1982]. They enable effective operation, as well as define the company's competitive position. Due to its competences, the company can transform acquired resources (tangible and intangible) into strategic resources [Amit and Schoemaker 1993]. Thus, resources are development path dependent, which makes them difficult to copy by other entities, hence they constitute the basis for maintaining a sustainable competitive position. Processes associated with the creation of strategic resources are described in detail by Dierickx and Cool [1989]. They point out the following determinants associated with the creation of strategic resources: time compression diseconomies, mass effect, key linkages between resources, erosion of resources and randomness of their formation. As a result of the integration and interlinking of strategic resources, it is possible to create organisational competences that constitute a complex system of capacities enabling operation. These relationships are presented in Figure 1.

Figure 1:  
Activities directed at transforming resources into organisational competences



Source: Łobacz 2012.

This presented-above model can be described as one of the elements of the entrepreneurial process which is directly linked to a similar formula of operation related to the creation of market offers, including offers based on new knowledge created or acquired from the market [Łobacz 2012]. The course of this process depends on the actual or potential entrepreneur and refers in particular to strategic decisions determined by the level of actual and perceived risk connected with the activity undertaken.

## 2. Strategic decisions and risk in the entrepreneurial process

In various models of strategic management in small business, it is the entrepreneur who plays an important role in the formulation of strategy and the introduction of particular market offers into the market [Storey 1994, Gibb and Davies 1990]. Although the company's strategy can be seen as a result of the impact of a variety of factors, the role of the entrepreneur in strategic management is of key significance [Garnsey 1996]. The personal attitude of the entrepreneur is particularly important in the search for new market opportunities and meeting customer needs [Kickul and Gundry 2002]. Similar effects were observed with respect to strategic decisions concerning the use and configuration of resources, e.g.: types of financing [Michaelas et al. 1998, Meyers, Mazzarol and Reboud 2009].

Risk in particular is associated with entrepreneurial decisions. Capacity and propensity for risk taking are often indicated as the main personality traits of the entrepreneur [Cromie, Callaghan, Jansen 1991]. Therefore, the manner in which risk is estimated can vary considerably between different small businesses. It is pointed out that the overwhelming part of these differences is related to the individual approach of the given entrepreneur [Smallbone 1995], as the perception of market opportunities is of very subjective nature [Shane 2004].

The approach to risk is associated with the perception of variation of future results of operations, the probability of their occurrence and the expected (predicted) value [March and Shapira, 1987]. According to the classical decision theory, people with an aversion to risk avoid variation and are ready to sacrifice part of the expected value to reduce this variation. People willing to take risks prefer, in turn, a relatively high risk and are ready to sacrifice some of the expected value to increase variance. From this perspective, people first calculate the expected profits, then analyse the risk [March and Shapira, 1987].

Profit<sup>8</sup> is the economic surplus remaining after the payment of costs of resources used. It constitutes the so called entrepreneurial advantage, a reward for the risk incurred while carrying out business activity [Matusiak 2010]. Matusiak [2010] indicates that risk (and liability) bearing and profit management are the main features of the entrepreneur who is directly or not directly involved in managing the company<sup>9</sup>. However, the entrepreneurial advantage is seen as an accidental and occasional value [Blaug 2004], highly individually determined [Shane 2004], which makes expressing it in the traditional economic models difficult. It is also difficult to assess clearly risks associated with the implementation of entrepreneurial activities.

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8 Profit is one of the most controversial categories associated with entrepreneurship and the cause of the negative attitude towards capitalist systems. Profit as a reward for action is an incentive for the introduction of more effective systems of operations; at the same time, it is a source of social inequality and economic stratification. See: Noga 2009

9 For instance, in the case of academic entrepreneurs, the phenomenon of the occurrence of the so called substitute entrepreneurs is often encountered [Clarysse et al. 2005, Łobacz and Głodek 2012]

The analysis of the ratio of the level of risk to the planned return is, therefore, an important field of analysis in terms of strategic decisions related to the process of entering into specific ventures [Mazzarol and Reboud 2005]. There are a number of formal methods for the analysis of this relationship, including in particular the calculation of the net present value (NPV) and internal rate of return (IRR). The use of these methods is, however, problematic due to the significant degree of unpredictability of many variables affecting the results of entrepreneurial processes [Gatignon and Robertson 1993]. They usually require the creation of a number of assumptions concerning the future, which in the case of entrepreneurial activity is often not possible and time-effective or is inadequate to constant changes in business operations introduced by enterprising organisations [Sarasvathy 2001, Ries 2011]. This often results from difficulty in access to relevant market information [Stawasz, Głodek and Stos 2012].

In addition, studies have shown that the approach of entrepreneurs to risk is generally not based on structured and formal calculations. On the contrary, they usually reject the justification based on the probability theory, sometimes even deny the existence of risk. At times they accept it but do not believe that it applies to them. Busenitz [1999] indicates that entrepreneurs seeking to introduce new solutions to the market make use to a greater extent of the heuristic approach, taking into account their own preference and prejudice, which strongly influences the perceived risk of the particular situation.

Thus, the approach to risk can be directly associated with the so called entrepreneurial orientation. It is indicated that the entrepreneurial posture is one of the key dynamic capabilities of the enterprise, i.e. “organisational and strategic routines arising from past experience by which managers alter their resource base to generate new value-creating strategies” [Eisenhardt and Martin 2000]. With regard to the entrepreneurial orientation, risk taking is the willingness to engage resources in activities whose failure can lead to high costs, while potential benefits are uncertain [Wiklund and Shepherd 2003]. Decision-makers are guided by the expectation of achieving high returns through capturing market opportunities [Lumpkin and Dess 1996].

On the supposition of a constant level of profit, it can be assumed that the level of risk is the key element of strategic decision-making. From this point of view, it can be said that resources play an important role in making strategic decisions. Their volume and

characteristics may influence the decision-making situation and, consequently, decisions concerning the implementation of the particular project. The resource-based theory directly assumes that the ability to effectively compete in the market is a feature of entities that have developed a sufficient degree of fit at the strategic level (dynamic fit) between controlled resources and the implemented strategy along with opportunities coming from the environment [Obłój 2007]. With regard to the risk level, it means the reduction in its level in the case of a better fit of resource organisation to the particular project. The level of risk, perceived and actual, is associated with resources used to carry out activities and with the method of their management. It should be noted, however, that relatively little attention is paid in literature to the analysis of how these two factors are linked.

### **3. Risk associated with resources as an element of strategic decisions**

Risk can be expressed quantitatively by using estimates of possible loss which occurs in the case of a particular event and the probability of its occurrence. From this perspective, risk increases with every situation that rises the probability of the occurrence of the given event, as well as in the case of an increase in the level of potential loss. Mazzarol and Reboud [2009] model the formula of thus understood risk in relation to entrepreneurial activities (more or less innovative) as a product of these two values expressed in terms of qualitative and subjective categories, according to the presented-above perception of entrepreneurial activities.

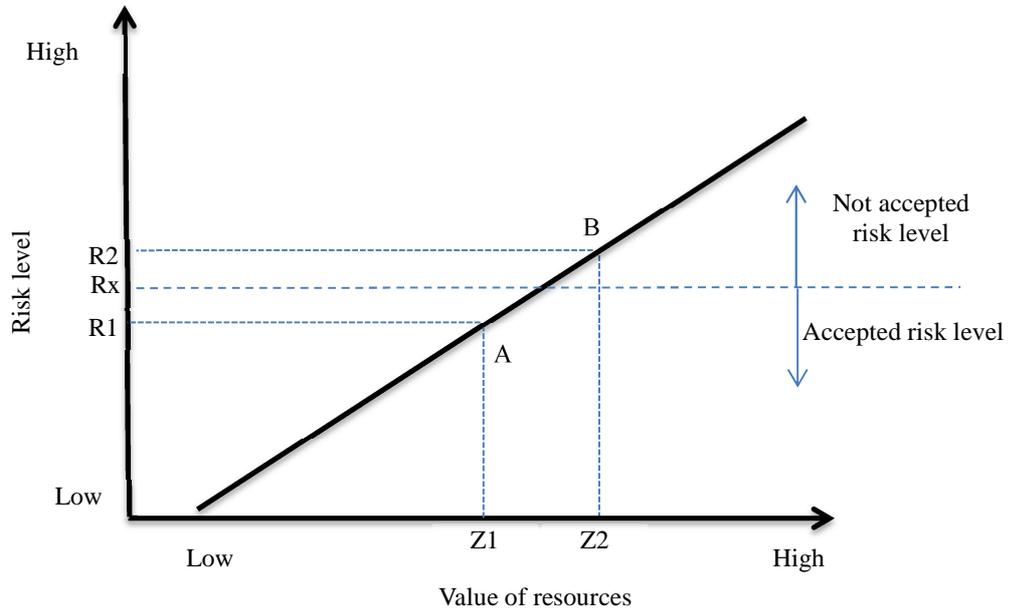
Based on the assumptions made by Mazzarola and Reboud (2009) that define the level of risk as the product of the volume of a possible loss and the likelihood of its occurrence, these two factors can be linked with resources associated with the possible implementation of the project by the given/organisation in the following manner:

1. The volume of the potential loss can be represented by the **value of resources** to be engaged in the particular undertaking. From the perspective of the process (compare: Figure 1), it will be the **value of expenditures on the acquisition and transformation of resources**.
2. The probability of the situation when a loss occurs may be related to the level of the quality of resources that are to be used, which in the context of the

resource-based theory can be seen as the achieved **level of organisation of resources in relation to the particular project**. This component includes the overall relationship between the characteristics of resources involved and the potential of the company in terms of their effective use in the process. With regard to the effects of the above-described process associated with the transformation of resources in the entrepreneurial process (compare: Figure 1), it will be the **level of organisational competences gained through activities aimed at their transformation**.

Both components have different characteristics with respect to the level of risk, i.e., they display an inverse relationship. Taking into consideration the first of these components, it can be said that the implementation of the project that requires a greater amount (value) of resources is associated with a higher level of risk than the project that requires smaller commitment of resources. This relationship is presented in the schematic terms in Figure 2. Point A in the figure is the project for which the level of risk resulting from the relationship of both resource components equals R1. It is lower than for the project which, with a similar level of resource organisation, requires a higher value of resources involved (point B) and for which the level of risk equals R2.

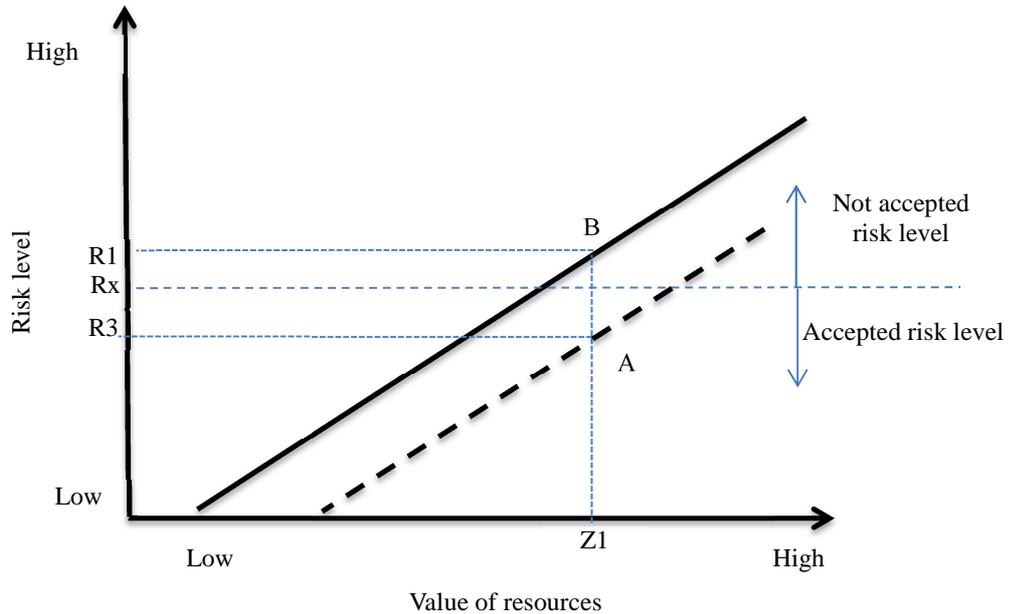
Figure 2:  
Determinants of project risk from the point of view of resources and the potential of the entrepreneur/organisation to use them - differences in the levels of risk depending on the value of resources planned in the project



Source: The authors' own compilation

The above-presented relation can be affected by the inclusion in the process of the analysis of the factor associated with the level of organisation of resources planned for the implementation of the project. At the given value of resources, a better potential of the entrepreneur in terms of their organisation is related to a potentially lower level of project risk. This situation is presented schematically in Figure 3 by the shift from curve K to  $K_1$ . Point B is the project for which the level of risk is R1. It is higher than for the project in which, with a similar value of resources involved, entrepreneurs/organisations have at their disposal resources at the higher level of organisation (point A) and for which the level of risk is R3.

Figure 3:  
Determinants of project risk from the point of view of resources and the potential of the entrepreneur/organisation to use them - differences in the levels of risk depending on the level of the organisation of resources involved



Source: The authors' own compilation

In both cases described above, the level of maximum acceptable (under the circumstances) risk, marked as  $R_x$ , can be included in the analysis of the decisions made. The situation described by Figure 2 and Figure 3 deals with the situation A which is below the level of acceptable risk and with the situation illustrated by point B in which the risk of execution is above this level.

#### 4. The entrepreneurial process and the development of resources as factors in strategic decisions

Assumptions about the relationship between the value of resources involved in a specific entrepreneurial project along with the level of their organisation, determining the method of its implementation, and the level of project risk outlined above allow to include the entrepreneurial process in these considerations. As noted earlier, this process is characterised by a high degree of volatility, as well as by an individual approach related in particular to the perception of market opportunities, which causes difficulty in the

approach based on the rational, structured analysis. The assumptions made, therefore, may be a platform providing structure for the analysed issues.

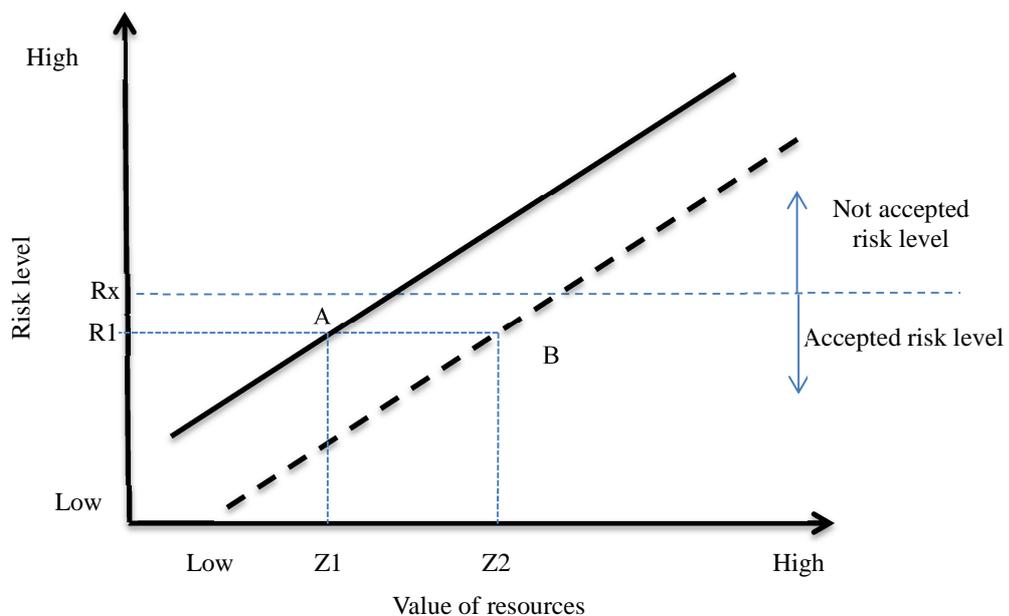
In the presented model, it is assumed that the entrepreneurial process analysed from the point of view of resources is a process aimed at the acquisition of resources and their transformation into organisational competences [Łobacz 2012], i.e. it is a process aimed at a gradual increase in the level of resource organisation, hence it is associated with the improvement of economic parameters of the potential project, including the risk reduction. This approach enables a static and dynamic view of the level of risk associated with the planned project, thus taking into account the characteristics associated with entrepreneurial projects, including innovative and technological projects.

The use of the thus outlined approach provides interesting possibilities to structure analyses and discussion in the field of entrepreneurs' conduct in relation to strategic decisions. In particular, it relates to decisions concerning the **commitment to making use of market opportunities**. Assuming that entrepreneurs, planning a new venture, assess the ratio of benefits to the risk involved, in the context of resources they make decisions concerning rationality of their involvement. The presented process approach, apart from the indication relating to the justification of commitment as such (whether to get involved at all or not), allows also to carry out the analysis of issues associated with the level of this involvement. This level can be observed at all stages of the process, i.e. at the stage of search for resources, search for effective configuration of resources and integration of resources, taking into account the fact that the value of resources increases through the subsequent implementation of the listed activities according to the theory of resource development proposed by Dierickx and Cool [1989]. This involvement can be applied to the planned project, as well as to the next ones that are based on the original project. Linking resources with risk in this manner confirms the fact that the development of a venture depends on the ability to increase the level of organisation of resources needed for the implementation of new projects.

The presented model also allows to examine the possibility of bringing the project to the level of risk acceptable for the particular entrepreneur as it can be seen that a rise in the value of resources involved increases the risk of the project, which may stop the entrepreneur from its implementation. However, the implementation of activities

associated with the entrepreneurial process related to the search for, configuration and integration of resources, allows the reduction of risk arising from the commitment of resources and, consequently, is conducive to making the decision to implement projects at an acceptable level of risk. This process is illustrated by Figure 4. Due to the more effective organisation of resources, the relationship between resources involved and the level of risk has gone from  $K$  to  $K_1$ . In this situation, despite the increase in the value of resources planned for the project, the total project risk ( $R_1$ ) has remained at a level below the level of acceptable risk ( $R_x$ ).

Figure 4:  
Determinants of project risk from the point of view of resources and the potential of the entrepreneur/organisation for their use



Source: The authors' own compilation

Based on the above, the necessary areas of commitment can be specified. In particular, the engagement of the company's own resources and the use of its competences in the process of their organisation. It seems possible to lower the risk by reducing the commitment to the company's own resources (e.g.: in regard to financial resources) [Grande et al. 2011]), as well as by using external competences to better organise resources, for instance, availing of services provided by business consultants

[Łobacz 2011, Łobacz and Głodek 2012] or using resources/competences of external business partners [Łobacz 2012].

The use of the results of the above considerations regarding risk and resources has also potential application in the analysis of strategies related to the entrepreneurial process. Availing of new market opportunities may require new resources (other than the previously used). Therefore, processes related to the organisation of resources, including in particular those aimed at their acquisition and configuration, may be related to competences in their dynamic use (dynamic capabilities) that affect the level of risk reduction [Eisenhardt and Martin 2000]. A relevant parameter in this case is also the characterisation of resources as such, particularly their flexibility which affects the ability of their rapid reconfiguration [Su et al. 2011]. It seems that the presented approach is particularly useful in the analysis of processes in the framework of ventures that commercialise new knowledge (including new knowledge of technical nature). Limited possibilities of making use of ready-made patterns and the need to dynamically respond to an unstructured environment (new, emerging sectors) require a significant commitment on the part of entrepreneurs to building their own business ventures. The entrepreneurial process is in this case essential.

### **Summary**

The analysis presented in this paper and the proposed solutions are related to considerations that combine elements of the economic analysis and entrepreneurial processes. Taking into account the dynamics of entrepreneurial processes analysed in scientific literature, it can be said that they present a particular challenge as an area of economic analysis. Hence, capturing the relationship existing between the entrepreneurial process and strategic decisions taken in its framework is a significant challenge. It seems, however, that the use of the relationship between the level of risk and characteristics of resources along with processes associated with their transformation has the potential to organise the analysis of entrepreneurial behaviour in terms of both the theoretical and the empirical analysis.

The presented approach provides opportunities for reflection on the behaviour of enterprises in terms of the resource-based theory and the competence theory. In addition,

the linking of the entrepreneurial process with characteristics of resources and the level of risk can facilitate conducting empirical analyses concerning entrepreneurial behaviour, the relation of entrepreneurial strategies to the economic analysis or finally the impact of public support on entrepreneurial behaviour.

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