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Current Issues and Solutions in Investment Decision-Making

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Abstrakt: Problems and issues when dealing with risk and thus investment decisions are not solely affecting financial institutions. Number of companies have faced negative consequences of unwise decisions, another ones have not been able to respond to positive market developments. Focus on the appropriate tools for decision-taking within the process of investment and risk measurement is crucial for making the right decisions. Modern methods like real options analysis and fuzzy set theory are the ones to suggest. Furthermore communication and integration of the investment decision-making processes within strategic fit of the company and their structure increases not only affirmation with overall business goals but provides businesses with flexible and more holistic mindset of their employees.

Kľúčové slová: investment management; real options analysis; fuzzy set theory; managerial decision making

JEL klasifikácia: C22; C51; Q11; Q13

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1. Introduction

Long-term care costs make up a small (most OECD countries spend between 1 and 1.5% of their GDP In the wake of the financial crisis several assumptions about governance matters have been broken. One of them has been the widespread failure of risk and investment management in what were regarded as institutions which were regarded as masters on the field. The problems associated with these claims have been disproportionate management of risk and investment not on enterprise basis but on product or division. Also managers dealing with risk and investment decisions were separated from management and often even regarded as hindrance and not as an essential part of the company's strategy. Their status within the company was to low to enforce risk awareness policies or propose structural and procedural changes. Communication from lower levels towards the managerial top were not taken seriously. Most important of all – boards were in a number of cases ignorant of the risk when it came to investments (OECD, 2009).

Problems and issues when dealing with risk and thus investment decisions are not solely affecting financial institutions. Number of companies have faced negative consequences of unwise decisions, another ones have not been able to respond to positive market developments. Though risk management has been regarded as something extraneous and only connected to implementation of financial standards and legal requirements (e.g. Sarbanes Oxley Act in the US) in the 1990s (Tonello, 2007, in: OECD, 2009), this is changing. Corporate governance provides a broader context of internal control mechanisms, including enterprise risk management and investment decision-making frameworks, which may improve the situation.

Until this happens companies are still faced with problems and issues when it comes to investment decision-making. Where do these mostly stem from? Are they as significant? Our paper is focusing on current managerial issues when regarding the investment decision-making process. By using a literature review analysis we provide an analytical view on these issues and provide proposals for solutions.

2. Methodology

For the upcoming selection of studies and their analysis the method of literature review will be used. There are numerous reasons for this decision, including it being an objective and thorough summary and critical analysis of the relevant available research and non-research literature on the topic studied. The goal of the method is to form the basis for following conclusion on the solutions which will be posted as answers and applicable remedies to the identified issues with the entrepreneurial investment decision-making process (Hart, 1998, in: Cronin, Ryan and Coughlan, 2008).

Research questions

The following research questions have been formulated for the upcoming analysis:

1. What are the main current issues in investment decision-making of economic subjects?

2. What solutions may the literature provide to overcome these current issues?

While the first question provides the reasons for companies to fail in proper investment decisions and thus suffer financial penalties or not be able to gain prospects due to not being able to use positive market situation for their profit, the second uses the results from the analysis and provides the reader with insight about ways to overcome those shortcomings.

Hypotheses

Due to the fact that methods to be used for determining and measuring the risk of an investment are well known, our assumption is that in regards to the first research question there will be mostly managerial issues at stake when dealing with problems in investment decision-making. These may tangent areas of selecting the right tool for measuring risk and investment outcomes but also regarding the post-analysis issues connected with implementation of the results, meaning communication within the company, weight of such decisions within strategic planning and their

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integration into those. In short:

1. Main issues in investment decision-making stem from bad implementation, communication and integration of these decisions within the company rather than the methodology itself.

Regarding the second research question our hypothesis is that if main issues arise from managerial malfunction, these have to be addressed at the strategic and top managerial spheres within the company or business unit. Thus problems in communication, integration or implementation of the investment analysis process are to be taken into account as structural issues and have to be challenged within the organizational procedures and organizational culture. Thus:

2. Managerial problems have to be dealt with at strategic and organizational level by top management. As these decisions tend to have a strong impact on organization as such, an impact on organizational culture is expected.

3. Investment Decision-Making

Strategic investments are shaping the world of today – mergers and acquisitions, expansions into new lines of business, e-business developments are on the rise – and as such they tend to reshape the organizations there are happening in and to first. They involve long-term significant financial commitments, benefits which are mostly slow to materialize and levels of uncertainty which are hard to assess.

King (1975, in: Hopper, 2007) almost 40 years ago suggested that an overly narrow view of capital investment decision-making may lead to a theoretical and empirical over-emphasis on refining appraisal techniques at the expense of developing other stages of the decision-making process. Even today the rational and economic decision-making models are dominant in comparison with rather limited, political or incremental decision-making approaches. His model, shown in Figure 1 describes this process as one with several phases:

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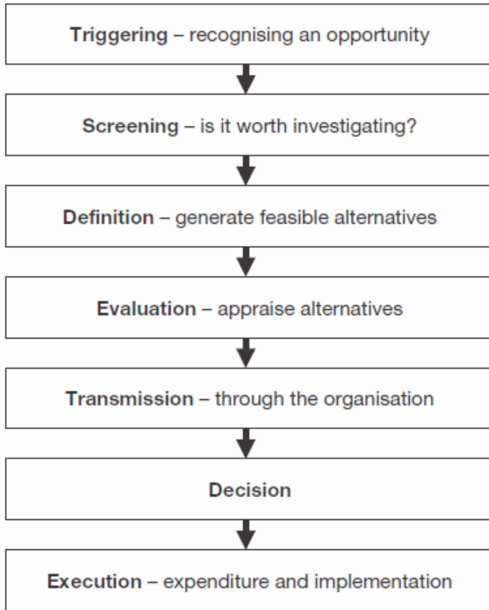

Figure 1: King's model of the investment decision-making process

The appraisal of investment would formally happen at the Evaluation phase, where financial analysis, risk analysis and economic decision criteria would be taken into account. However strategic thinking has been already happening so far. The project has been conceived, identified as fitting the organization and approved as feasible for evaluation. The scope is clear, as is its aims, features and outcomes have been conceptualized and rendered. So, while evaluation is focused on rational economic tools, the complex strategic decision-making analysis is a thing of the past already.

Therefore pre-decision controls, as strategic planning, application and approval procedures, preliminary exercises to define expenditure and hurdle rates or capital investment policies should – in a broader view of the investment decision-making process – be taken into account. These important decisions made before the actual formal analysis stage play a part in shaping investment decisions as much as the results of the analysis itself, thus we do also look at the overall decision-making process as relevant towards the question of issues in investment decision-making processes.

Certainly within the formal analysis the rational model seems to best fir the straightforward operational investment decisions. Where there is low environmental uncertainty and high consensus among decision participants as to goals, alternatives and likely outcomes, rational economic analysis such as internal rate of return (IRR) and net present value (NPV) are offering unambiguous, transparent and persuasive means of appraising investment options (Hopper, 2007).

Investment decision-making process is regarded as a multi-phase process also by other authors: it goes from initiating an investment proposal, through appraisal and approval to management and implementation. Moreover the stages of the process are interconnected and partially overlapping. Entrepreneurial businesses do aggressively seek growth and increased profits and do not limit their investments to projects with quantifiable expected outcomes, they do rely on qualitative assessments based mostly on subjective judgments, preliminary requirement being that they do accept the limits of predictability. Monitoring the investment and implementation process is as important and crucial

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step as is learning from mistakes from previous project or within a project itself. Post audits and after action reviews are performed to identify shortcomings that may be avoided next time, e.g. through better process design.

Evaluation of investment proposals involves appraising both the opportunity and the risk as a single step. DCF (discounted cash flow) techniques such as NPV and IRR have received much attention in the last decades as computers and software are cheaper and easier available. Simpler payback techniques however are also still popular.

4. Literature Review on Current Issues in Investment Decision-Making

Using the methodology of literature review three studies will be used to provide insight into current issues in investment decision-making. These include Northcott and Alkaraan's (in: Hopper, 2007) views on strategic investment appraisal, Chittenden and Derregia's (2004) focus on capital investment decision-making and a Financial Times study in association with Oliver Wyman (2009) about strategic decision-making in the face of uncertainty.

Investment Decision Making

Typical examples of strategic investment decisions include company acquisitions and mergers, the introduction of major new product lines, investment in long-term marketing initiatives, the installation of new manufacturing processes, the introduction of advanced manufacturing and information technologies, and substantial shifts in production capability (Hopper, 2007).

Significance of investment decisions

As investment decisions mostly stem from the strategic alignment of the company or business unit, the strategy as a business concept is key element to their understanding. Strategy of a company, as the long-term plan for how an organization intends to compete in its environments and what sorts of structures, resources and actions are required to achieve these intentions, is reflected in these investment decisions, since the outcomes of investment decision-making are guided by strategic goals. However investment decisions also shape strategy, as assets or technologies acquired are at organization's further disposal.

Current Issues

According to findings by Hopper (2007) several studies have examined the use of various investment appraisal techniques over past years and in general they have focused on the relative popularity of discounted cashflow techniques (IRR and NPV) compared to simpler, but less rigorous, approaches such as payback period (PP) and accounting rate of return (ARR). Some papers also have studied the use of risk analysis methods as a special aspect of investment appraisal, e.g. sensitivity analysis, hurdle rate adjustments , probability analysis or the capital asset pricing model approach.

According to these studies (Pike, 1996; Abdel-Kader and Dugdale, 1998; Arnold and Hatzopoulos, 2000; Alkaraan and Northcott, 2006; all in: Hopper, 2007) the use of different methods is still prevalent (98 per cent of firms used multiple financial analysis techniques in 2002). The usage of methods is however in contradiction with their importance. There is not a common result as less sophisticated techniques (payback and ARR) are sometime more important than NPV or IRR and vice versa. Still, even though more in-depth analytic tools are available practitioners tend to still continue using simpler financial analysis methods.

The explanation for these may be found in shortcomings of the NPV and IRR techniques in capturing strategic and non-financial aspects of projects. Subjective evaluation of the project coupled with a simpler financial analysis may be of sufficient value. Also the added value towards the decision-making process by these highly sophisticated tools is too small to render their selection. Also the trend towards using multiple techniques also plays a role. The positive outcome of these studies however is that they suggest that “managers see financial evaluation as a key part of the assessment of strategic investment proposals” (Hopper, 2007, p. 211).

When regarding project risk analysis tools, those seem to be growing in popularity according to Arnold and Hatzopolous (2000, in: Hopper, 2007), especially the methods of required rate of return, shortened payback periods and the profitability analysis seem to have increased in significance. However the most widely used risk analysis technique, the sensitivity / scenario analysis still dominates the pool, since 1980s. The reason for this being its

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perceived simplicity and intuitive appeal.

Wittenberg (in: Financial Times, 2009) cites the following reasons for low usability and emergence of analytical tools within the strategic investment decision making process, as they struggle with:

- Alignment of effective risk management processes within the organizations
- Selection of the appropriate tools or methods for measuring risk
- Application of sufficient resources towards the implementation and utilization of available
- risk information
- Communication of risk information to those who need it.

His critique is that henceforth "risk management is disconnected from financial and strategic decision making processes and provides limited value" (Financial Times, 2009, p. 4). From this perspective the explicit integration of risk into the strategy development process is one of the most crucial aims of business risk management on corporate level. According to the study one of the direct impacts of an increased awareness of emerging risks is a greater focus on risk management.

The study also provides a comparison of risk measurement tools currently employed in contrast to the tools that should be employed according to the respondents. And while simple tools like SWOT analysis and internally generated indicators are predominantly used in these scenarios and are used accordingly, the biggest discrepancy towards overuse is the use of internal company experience in form of internal experts – means no real analysis but intuition based on previous experiences. Many organizations did actually state that they are being aware of over-relying on internal tool and experts and meant to put higher emphasis on external sources and statistical or probabilistic analysis in the future. Risk measurement tools like risk mapping and decision tree analysis but also simulations and scenario analysis are on the other hand side tools which are underused and should be practiced more frequently. This discrepancy may be linked especially to issues of understanding the added value of these tools and fear from the level of transparency they provide according to some of the questioned.

The problem by using internally generated indicators or a SWOT analysis can clearly be seen in the same study when asked about the efficacy of these tools. The aforementioned were maybe overused, however comparatively poor in their effectiveness, while internal experts as a method provided still a very high level of efficacy while being overused.

Another issue with risk and thus investment measurement is the mentioned case of distribution of information – or more precisely, the lack of such. Departments and functional groups in organizations must receive the emerging risk information if they are going to reflect on it and change their planned behavior. The Financial Times' study (2009) provides insight into this issue too. It states that there is no single department or function that is given risk information, rather it varies from business unit to business unit. The dissemination of the risk information is highly skewed towards the departments it originates from, thus majority organizations provide this information to finance and treasury departments, however only in approx. two thirds of cases this information reaches the managerial team or the board of directors or the strategic planning and innovation centers. This means that non-executive directors spend quite a lot of time in the dark and are given late or no information while still needing to do groundbreaking decisions. And while human resources are still considered one of the vital and critical parts of the company, less than 25 % of respondents regularly provide emerging risk data to this department.

Organizations do not only tend to be challenged by identification and assessment of emerging risks but even further more by its interpretation and alignment of the data to the company's strategies and operations, which leads in many cases to insufficient or unjust application of appropriate company resources and time towards its management. Effectively, one third of the organizations cannot effectively interpret the risk information in terms of the impact on their organizations' strategy or operating goals.

The main reason for this is the missing linkage between business and market insights and the data results coming from an investment decision-making process. The potential in discovering not only the reasons for a certain

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investment but also for the integration across organizational units is a step needed to be taken. Many companies do tend to come to a more proactive approach only after they experienced a couple of hiccups or mistakes in the past. Also changes in the overall atmosphere in the marketplace may have changed the view of the businesses towards addressing emerging risks, mostly pointedly the credit crisis. While prior to that approx. ten to fifteen per cent have been involved in risk monitoring, the number has risen to forty or fifty per cent nowadays.

Another blocking stone towards integration of risk information may be the overall rigid perspective of a business strategy. Due to the volatility of the market today the need for a more flexible approach is needed.

Chittenden and Derregia (2004) produced a cease study brief which concluded that companies performing successfully were more aggressive and demanding in their investment generation process. They also regarded investment to be essential to their future growth and profitability. Their preparation to accept projects with less clear prospects was higher, also they were taking more risk but also expecting greater rewards. The investment analysis was conducted with high standards and monitoring was done early and succesively to identify weak performance as soon as possible. Post audits were also conducted and companies tried to learn from their mistakes. According to their brief this behavior was absent from average performing companies.

5. Propositions for Solutions

The current market provides solutions to reduce the impact of uncertainty on business operations through leasing, hiring, renting and outsourcing. These types of solutions help smaller companies with conservation of limited financial resources but also provide enhanced operational capacity and flexibility. Finance directors frame and subsequently manage investment process by looking at the options available and their financial and strategic values. Capital budgeting alone with its traditional assortment of techniques, although crucial, is no longer a relevant process for businesses.

Investment decisions thus have to be made in context of the business's strategy. These are missing from basic DCF methods of investment appraisal. Practitioners appreciate the limitations of traditional investment appraisal techniques, which mostly are dependent on the circumstances that surround the investment proposal. High performing entrepreneurial businesses have a very proactive. They accept that prediction is biased with inaccuracy, though use closer monitoring of projects to remedy problems and learn from them. Short-term and long-term investments are acknowledged and weighted against strategic goals, e.g. if creating a first mover advantage (Chittenden and Derregia, 2004).

In the following sections we focus on several of the identifies issues companies face nowadays when dealing with investment decision making processes and propose further solutions to their improvement.

A Greater Focus on Investment and Risk Management

According to Financial Times study (2009) some of their respondents have indicated that their organizations have recently written down their risk management processes or added personnel. Some are also cutting bureaucracy and creating centralized risk management teams rather than having several cross-functional committees.

However not only focus on dedicated resources but also towards techniques which provide the answers needed is crucial. These connected with managerial judgment, as both are key to strategic investment decision-making, will yield proper results. As judgment is enhanced through learning, new techniques should enhance analysis, promote learning or preferably do both – such as real options analysis or fuzzy set theory, as they focus on enhancing the rigor and comprehensiveness of economic analysis. Still, both have components about possible future or need some project elements which need to be subjectively chosen. Newest fuzzy theory models do focus on becoming more compatible with the thinking process of the decision makers (Zhinan et al., 2016). Possible other tools like balanced score card, strategic cost management and technology road-mapping may provide immense information for forthcoming strategic investment decisions, but they cannot mitigate the risk. Also they are inexact and their efficacy depends on managerial judgment.

Still, learning should be the primary focus in these situations according to Hopper (2007), who lists several ways

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in which strategic analysis techniques can support leaning. They promote broad thinking which ensures innovative ideas arising for example through use of mix-max teams, external competition or market insights. The tools also guide the search for information as their structure enables the project to be examined from all appropriate angles, analysis techniques and reduce the uncertainty and safeguard that no foreseeable risks are overlooked. Resulting key variables from analysis should also be used in approaches that require decision-makers to reach a consensus on the scope. This further provides a basis for the discussion and analysis necessary for a thoughtful consideration of important project aspects.

Frequency of Investment and Risk Measurement

Also the frequency of risk assessment has risen out of necessity to these organizations according to Financial Times (2009), some of them actually did create daily routines for specifically looking after and estimating their currency risks and the hedges that they put in place to reduce those risks. The aim of these changes is mostly to understand the risk and the potential rewards, as these two things go hand in hand. Capital allocation is thus determined by the rewards outweighing the potential risks.

Systematic reviews of past decision processes can by Hopper (2007) improve procedures, information and analysis tools for future investment decisions. This takes into account that reflection and feedback on times and tools used is necessary to ensure organizational learning and thus building a knowledge base to underpin managerial judgment.

Distribution of Investment and Risk Information

The methods of communication of emerging risk information are mostly done in executive committee meetings (almost 73 % of organizations do so according to Financial Times (2009). Any other form of communication is rather sporadic, unplanned or on a need-to-know bases, as periodic updates distributed formally by an internal team are being used not even by half of the responding organizations. Audit committee meetings and annual updates are potential vehicles used to communicate this information, however as they are being done on a one-time basis, these do not provide ante-information.

The crucial part is being played by the senior managerial team. If the team members are not aware of the significance of the risk information and do not disseminate it to their departments, the analysis is useless. Thus strengthening their responsibility and accountability to their teams is a needed change happening. Also unified language about risk, getting acceptance that risk is not something to avoid but to manage, is a needed change to be implemented.

Transparent, understandable and inclusive are according to Hopper (2007) more likely to facilitate participation and discussion in the decision-making process. This will enhance the sharing of organizational knowledge and learning and improve the acceptability of decision outcomes to individual business stakeholders involved inside the company.

Integration of Investment and Risk Information

While organizations note that there are challenges in communication and dissemination of risk information across their companies, they still believe that their organization's are “very” or even “highly” effective at integrating emerging risk information into a variety of processes (Financial Times, 2009). These processes include especially strategic planning, capital allocation and capital investments and operational planning. However not even half of the organizations do incorporate these findings into their strategic planning exercises, which rather reflects the bias of the executives surveyed and not the typical approach towards this information in general.

Risk information should be integrated into the key performance metrics, strategies and operations of the organization at hand to ensure that the risk taken is commensurate with the rewards over a comparable time horizon. Only through such improvements to internal processes the arrangements and time-frame of information may support ongoing business decisions.

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6. Conclusion

In conclusion to our analytical view we may surmise the previous with the following statement. Market mechanisms such as leasing, renting, outsourcing and subcontracting enable many companies to avoid some or all capital investment decisions. Successful firms take a problem solving approach to investment decision-making and the development of project based processes. They also accept that problems and issues are part of the process and make sure these are detected and not ignored when arising. Business success of course depends partially on market conditions however what distinguishes entrepreneurial business units is their aggressive pursuit of opportunities and determination to make their investments a success. They combine DCF techniques with payback to evaluate payoffs beyond a payback time limit but also take into account their strategic goals and involvement of crucial stakeholders within the company.

Focus on the appropriate tools for decision-taking within the process of investment and risk measurement is crucial for making the right decisions. Modern methods like real options analysis and fuzzy set theory are the ones to suggest. Furthermore communication and integration of the investment decision-making processes within strategic fit of the company and their structure increases not only affirmation with overall business goals but provides businesses with flexible and more holistic mindset of their employees. Connected with a learning organizational culture which provides feedback on mistakes and creates a learning environment which improves processes and creates frequent monitoring results helps firms with adaptability to market conditions and gives them an edge against competitors.

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