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Case Study on the Advantageousness of Outsourcing

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3. Theoretical framework of financial analysis.
4. Risks, advantages and disadvantages of outsourcing and possibility of their quantification
5. Case study on the advantageousness of outsourcing in a chosen company.
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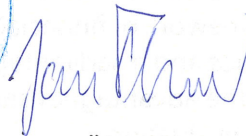
References:

- DOLEŽAL, Jan, Pavel MÁCHAL a Branislav LACKO. 2012. *Projektový management podle IPMA*. 2. vyd. Praha: GRADA Publishing. ISBN 978-80-247-4275-5.
- DVOŘÁČEK, Jiří a Ladislav TYLL. 2010. *Outsourcing a offshoring podnikatelských činností*. Praha: C. H. Beck. ISBN 978-80-7400-010-2.
- IAOP. 2014. *Outsourcing Professional Body of Knowledge*. 10th ed. Zaltbommel: International Association of Outsourcing Professionals. ISBN 978-94-0180-000-6.
- KNÁPKOVÁ, Adriana, Drahomíra PAVELKOVÁ a Karel ŠTEKER. 2013. *Finanční analýza: komplexní průvodce s příklady*. 2. vyd. Praha: GRADA Publishing. ISBN 978-80-247-4456-8.
- KORECKÝ, Michal a Václav TRKOVSKÝ. 2011. *Management rizik projektů: se zaměřením na projekty v průmyslových podnicích*. Praha: GRADA Publishing. ISBN 978-80-247-3221-3.
- PROQUEST. 2017. *ProQuest Article Database* [online]. Ann Arbor, MI, USA: ProQuest. [cit. 2017-09-28]. Retrieved from: <http://knihovna.tul.cz/>

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Annotation

The topic of this master thesis is “Case study on the advantageousness of outsourcing” in a chosen organisation. The work is divided into 4 chapters and in the first part focuses on the theoretical findings and literature research, in the second part then on the application of these findings in a case study.

The theoretical part explains the term outsourcing in general, the regarding theories, reasons for outsourcing, furthermore it enumerates the processes suitable for outsourcing, describes process approach and finally the framework for the evaluation. After that it states the theoretical framework of financial analysis, its methods, furthermore the project financial analysis and risk project management. Subsequently it states the risks, advantages and disadvantages connected with outsourcing and outlines the possibilities of their quantification, as well as how to evaluate a job performance.

These findings are then applied in the practical part in a case study in means of financial analysis, job performance analysis, risk analysis, value analysis, analysis of the strategic sourcing options and the relationship analysis and evaluation which leads to the main goal of the thesis – the evaluation of the advantageousness of outsourcing and improvement potential suggestions.

The thesis is based mainly on the qualitative research, using the expert methods, transformed in order to quantify them in combination with quantitative research of a real situation.

Key Words

Advantages and disadvantages of outsourcing, financial analysis of outsourcing, job performance, mistakes while outsourcing, outsourcing drivers, outsourcing evaluation, outsourcing influencers, outsourcing risks, outsourcing, process approach towards outsourcing, reasons for outsourcing, relationship strategy, risk analysis, risk project management, risks quantification, strategic sourcing options, value chain.

Anotace

Tématem této diplomové práce je “Případová studie na výhodnost outsourcingu ve vybraném podniku”. Práce je rozdělena do 4 kapitol a v první části se zaměřuje na teoretické poznatky a literární rešerši, v druhé části pak na aplikaci poznatků v případové studii.

V teoretické části práce je obecně vysvětlen pojem outsourcing, teorie, které s ním souvisí, důvody k outsourcingu, dále je uveden výčet procesů vhodných k outsourcingu, procesní přístup a konečně nastíněn postup evaluace. Dále jsou uvedeny základní teoretické předpoklady pro finanční analýzu, její metody, potažmo pro projektovou finanční analýzu a risk management projektu. Následně jsou uvedena rizika, výhody a nevýhody spjaté s outsourcingem a nastíněny možnosti jejich kvantifikace, potažmo jak lze hodnotit pracovní výkon.

V praktické části jsou pak aplikovány dané poznatky v případové studii pomocí finanční analýzy, analýzy pracovního výkonu, analýzy rizik, analýzy hodnot, strategického zajišťování zdrojů a vztahové analýzy a evaluace, jež vedou k hlavnímu cíli práce - zhodnocení výhodnosti outsourcingu a navržení případných zlepšení.

Jedná se zejména o kvalitativní výzkum, používající expertních metod, transformovaných pro možnost kvantifikace v kombinaci s kvantitativním výzkumem reálné situace.

Klíčová slova

Analýza rizik, chyby při outsourcingu, co ovlivňuje outsourcing, co vede k outsourcingu, důvody k outsourcingu, finanční analýza outsourcingu, hodnocení outsourcingu, hodnototvorný řetězec, kvantifikace rizik, outsourcing, pracovní výkon, procesní přístup k outsourcingu, projekt management rizik, rizika outsourcingu, strategické zajišťování zdrojů, strategie vztahů, výhody a nevýhody outsourcingu.

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List of Abbreviations

EU	European Union
FMEA	Failure Mode and Effect Analysis
HR	Human Resources
IAOP	International Association of Outsourcing Professionals
ISO	International Organization for Standardization
IV	Industry View
MCDM	Multiple-criteria Decision-making
NEDC	New European Driving Cycle
PDCA	Plan Do Check Act
RBV	Resource-based View of the Firm
RD	Research and Development
RDE	Real Driving Emissions
RV	Relational View
SLA	Service Level Agreement
SWOT	Strengths Weaknesses Opportunities Threats
TCE	Transaction Cost Economics
US	United States
USA	the United States of America
WLTP	Worldwide Harmonized Light-Duty Vehicles Test Procedure

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Introduction

The 4th industrial revolution has brought new challenges to the business environment. Organisations have been forced to start striving for higher efficiency and cost reductions, which has led to the necessity to specialise in a limited amount of key areas. This trend has prompted organisations to outsource and has redrawn the boundaries between their supply bases.

The goal of this thesis is “*Case Study on the Advantageousness of Outsourcing*” in a chosen organisation is to characterise the term outsourcing and explain the interdependencies with other theories, which influence its evaluation and describe the reasons, leading the companies of today to apply an outsourcing process. Furthermore, how to evaluate outsourcing, which will be partially demonstrated in the case study. As a subgoal, the author will examine the financial situation of the outsourcing process in a chosen organisation and its strategic sourcing options and finally find an improvement potential and propose her own approach.

This thesis is based mainly on the qualitative research of the current literature, whereas there are many influencing theories in diverse fields of expertise, the author attempts to interconnect. A part of the thesis uses the quantitative research, using a real data, retrieved from the employees of the examined organisation. A significant part of the research uses expert methods, which are greatly subjective and this could lead to a lower explanatory power.

This topic was chosen because of the fact, that even though the popularity of outsourcing has risen rapidly, it is connected with many myths and numerous organisations tend to fail in its implementation and above all, the author would like to suggest potential ways of improvement for the chosen organisation.

The thesis is divided into four chapters and firstly states the theoretical background and then moves on to the practical evaluation of a chosen outsourcing situation.

First, the outsourcing will be defined and the theories which have significantly influenced this practise will be summarized and explained in order to understand the outsourcing process and evaluation. After that, there will be a focus on the global outsourcing drivers, which have caused the necessity to involve outsourcing in business strategies and the particular reasons, companies have for outsourcing will be stated. The focus will then move on to the definition of processes, suitable for outsourcing and linked to the process approach, possibly used for the decision-making. In the last point of the first part of the thesis, the author will briefly outline the process of the outsourcing evaluation.

After that, the thesis will concentrate on defining the framework of financial analysis and risk assessment. As a tool of the financial analysis, there will be a description of the project financial analysis, followed by the explanation of project budget planning, which will describe the groups of costs, connected with any project, so it can be implemented to the outsourcing situation. Since decisions about outsourcing always carry a level of uncertainty and risk, the focus will then be on risk project management, including risk analysis.

The next part of the thesis will start to concentrate on the practical questions. Firstly, it will enumerate the advantages and disadvantages of outsourcing and state some of the mistakes, which are made by many organisations while outsourcing. Then it will state the risks connected with outsourcing and suggest how to analyse and quantify them. At the end, the focus will be on the possibilities of job performance evaluation, as it is one of the disadvantages/advantages of outsourcing.

Finally, the author will proceed with the implementation of the mentioned techniques and frameworks in a case study to analyse the situation of outsourcing process in a chosen company, whose name will not be mentioned in order to keep its strategical information secret. It will briefly explain the current outsourcing process and its background and move on to the financial analysis of its direct and indirect costs. The analysis will then be broadened by including a job performance analysis and move to a brief risk analysis, including their quantification and a new financial plan will then be suggested. After that, the author will propose the value chain of the organisation and analyse its strategic sourcing options. At the end, there will be a study of the outsourcing relationship, its strategy and evaluation. However, the real numerical data, acquired from the company, will be corrected by a coefficient in order to keep the concealment, which might slightly influence the results.

The author expects, there will be a significant difference between the costs of outsourcing and costs if performed internally, furthermore, that the risks will also influence the evaluation. In the last part, the author will suggest the possible development of the outsourcing process in the chosen company and predict the events, which might arise in the near future and propose, how to deal with them.

All the information will be summarised in a concise conclusion and it will be evaluated if all the expectations of this work have been met.

1. Theoretical Framework of Outsourcing

This chapter takes into consideration the basic information about the outsourcing and its global drivers. Furthermore, it states reasons why companies outsource and explains which processes are seen as suitable for outsourcing. Then it focuses on the process approach to outsourcing by describing current trends and at the end of the chapter it states possibilities for the evaluation of the whole outsourcing process.

1.1 Outsourcing

Outsourcing (Outside Resource Using) can be described as a **business practice of contracting or subcontracting an outside party to perform certain activities rather than using the internal employees**. Outsourcing can also be understood as a decision between two strategies – make or buy (Dvořáček and Tyll, ...). Outsourcing means that a company transfers one or more activities to an external organisation, which have been performed internally so far. It is also a long-term relationship with specialized service providers, orientating on the results. The activities, being outsourced, can focus on a single activity or on a set of them. Furthermore, an outsourcing contract can be arranged also for the whole end-to-end business process. Nowadays, large companies also tend to outsource activities, which were previously performed internally (IAOP, 2014).

IAOP (2014, p. 4) defines specific meaning to the term **results-oriented**: *“It suggests that the service provider is assuming responsibility for the people, processes, and technologies employed along with responsibility for ensuring that those resources deliver the results for which the customer has contracted”*. The mentioned **responsibility for the resources and results distinguishes outsourcing from other types of cooperation**.

Many researchers also mention the term “vertical integration” in connection with outsourcing. Vertical integration alludes to the level of activities` ownership either **forward** – towards the end user of the service or product and towards the customer (after sales, distribution, advertising, ...) or **backward** into the supply chain (warehouse management, inbound logistics, components manufacturing, ...). Vertical integration is close to the

outsourcing concept, influencing the decision on whether to source the activity from the external supplier or to perform it internally.

The term already mentioned “**make-or-buy**” signifies the decision-making process on whether to buy a component from an external supplier or to manufacture it internally. McIvor (2005) suggests the term “make-or-buy” being more appropriate than outsourcing whilst it signifies the necessity of a suitability evaluation of the internal and external supply. “*The term outsourcing implies that the decision to use an external supplier has already been made without any consideration whether it is appropriate for the organisation*” (McIvor, 2005, p. 7).

Many companies are forced to reduce costs and specialise in fewer key areas. As a result, the organisations started to outsource their in-house activities. Outsourcing has gained attention by researchers and practitioners and progressed from simple peripheral activities towards involving more critical business activities. Outsourcing can either “*involve the transfer of business support functions such as cleaning or security to external suppliers in order to obtain **higher levels of performance** at a **lower cost** with relatively little upheaval for the organisation*” (McIvor, 2005, p. 1) or it can cause **significant organisation changes** in organisations structure, such as the transfer of internal staff outside and complete re-definition of staff conditions along with adjustment of employee’s expectations. It is clear, that outsourcing is a really complex topic and it is increasing in its significance. (McIvor, 2005)

It is possible to outsource a manufacturing process or a part of it, construction works, support activities, HR, accounting and others. The chapter 1.5 further describes the activities suitable for outsourcing. For **successful** outsourcing it is crucial to carefully **evaluate, benchmark** and consider the **possible effects** on the company.

1.2 Outsourcing Influencers

Outsourcing is influenced by numerous areas such as economics, business strategy, inter-organisational relationships, statistics, project management, risk management and many others. McIvor (2005) describes 4 theories and suggests how to combine them while outsourcing and thus (McIvor, 2005, p. 40):

- transaction cost economics (TCE),
- the resource-based view of the firm (RBV),
- the industry view (IV),
- the relational view (RV).

The stated theories have a lot of interdependencies and support the evaluation and management of outsourcing.

Transaction Cost Economics

The biggest influence has been the Williamson's theory of **transaction costs economics** from 1975. This analysis associates the economic and management theories and applies them in order to establish the best relationship type an organization should develop. The transaction characteristics form the foundation of the efficacious governance structure. The governance structure is determined by the transaction properties. When the assets are highly specific, it applies to the serious investment in transaction-specific resources. The resources will be governed by markets in case of low assets and uncertainty specificity, with relatively frequent transactions between the buyer and supplier. Market governance can be defined as short-term, discrete contracts where the bargaining relationships between the suppliers and buyers are created to enable a transfer of property rights that are economically efficient. This governance structure is employed in case of the **standardised components**, which can be obtained from more suppliers. (Williamson, 1975)

The transaction cost economics approach suggests employing **contractual safeguards** in order to exclude any potential risks which might possibly come up in the relationship of the supplier and buyer by establishing a **governance arrangement**. This approach proposes to use contractual safeguards in case of asset specificity, performance measurement and uncertainty. The TCE approach reduces the **threat of opportunistic behaviour** of other parties, however it does not acknowledge the fact, that many industry organisations in collaborative and complex relationships have a high level of asset specificity, uncertainty and opportunism. The contracts themselves cannot, in many cases, protect from the risks connected with the uncertainty and opportunism. (Williamson, 1975; McIvor, 2005)

The Resourced-Based View of the Firm

The resource-based view sees the organisation as an **assets and resources coalition** which can create a competitive advantage if employed in a **unique way**. The unique way can become a long-lasting **source of competitive advantage** and result in outstanding performance. Teece et al. (1997) identifies the organisation-specific capability dimensions which can create an advantage. They also describe the development, deployment and protection of the competences and resource combinations. This approach emphasises the possibility of an environmental change caused by exploiting already existing internal and external organisation-specific competencies. The RBV relates to the **strengths and weaknesses analysis** of an organisation. The RBV researchers have created various criteria for the resources with a competitive advantage potential. They also criticise transaction cost economics for minimising the opportunistic potential, arising in the case of the asset-specific investments. The TCE saw an organisation as a negative opportunism avoider. The RBV sees an organisation as a **group of strategic resources of a high value as a possible source of a competitive advantage**. Reve (1990) transformed the TCE view of Williams to the “core competence realms” and he called the asset specificity as “fit for purpose”. He sees the resources - core competences and skills, as unique and suggests they should be used responsively and adapt to an ever-changing environment. This theory sees the **high specificity of the assets** as the **strategic core** of an organisation. It states the site, physical asset, human asset and dedicated asset specificity as a types of core skills. A company should defend these skills if it wants to keep its competitive advantage. Strategic alliances or cooperative relationships can deal with the complementary skills with medium specificity, whereas the low specificity assets remain to the market. Some researchers argue that unlike the physical assets, the competitive advantage lies in ability of the management to unify corporate-wide production skills and technologies into competencies empowering individual businesses in the adaption of the rapidly changing business opportunities. The main competencies are seen as the knowledge, skills and technology in the possession of an organisation. (McIvor, 2005)

Many researchers assign the core competence approach to the start of the outsourcing process. In general, the RBV considers key characteristics of the core activities in relation to outsourcing and thus (Quinn and Hilmer, 1994):

- the activity is crucial for the customer and also one of the main reasons to purchase a product or service,
- the activity might create a competitive advantage or differentiation,
- the organization is capable to perform the activity more competently than its suppliers or competitors.

However, this approach is also really dangerous since there is a tendency to outsource non-core activities, seen as those with a limited impact on the competitive advantage. This approach **underestimates the term “non-core” activity** in the outsourcing strategy adoption. It suggests, if the activity is no longer important for the customer, it is possible to have it provided by a supplier with much more capabilities. But for example, activities with a high importance for the customer can be outsourced and still be of a strategic importance and the other way around – those activities, which are not important in the eyes of the customer and performed internally can be of strategic importance as well. (McIvor, 2005)

The Industry View

The industry view was highly affected by the research of Michael Porter and his **industry analysis frameworks** from 1980. The IV approach sees the formulation of a business strategy in relation to the company`s industrial environment. The potential profit is therefore seen as a function of its industry membership with structural characteristics in favour of the organisation. This approach might assist the organisation while **finding the best defensible position against the 5 competitive forces** or while determining how to **influence them** so, that they have a **positive impact upon its competitive position**. Porter has also defined the strategies that help to achieve a competitive advantage, known as **generic strategies** based on the **differentiation** and **cost leadership**. In the context of these two strategies, the organisation can either focus on a broad target (broad market, wide customer range, wide product range, ...) or on a narrow target (small market segment, limited customer range, limited product range, ...). The IV does not support the idea of the RBV, where the resources are the main part of the competitive advantage. Despite the differences, all theories have one thing in common and thus, the **goal is to gain and sustain the competitive advantage**, the difference is in the way of reaching this advantage. However, Porter`s research recognises and manifests in characteristics which are similar to the resource-based approach. His value

chain analysis has been accepted as a really significant technique, which enables the analysis of internal resources. (Porter, 1985; McIvor, 2005)

The Relational View

The relational view helps to understand the ways of how organisations can gain and sustain their competitive advantage. It states, there is a possibility to **combine the organisation`s resources in a unique way across the organisational boundaries to reach a competitive advantage**. It has evolved from the TCE limitations, regarding the potential governance structures. The RV strives to understand the company and suggests it can evolve valuable resources. This can be achieved by careful **relationships management** with external business partners or institutions. The key resources are assessed in a way that goes beyond the organisations` boundaries and leads to a sustainable competitive advantage. Competitive advantage can be therefore be reached by a set of cross-boundaries relationships, rather than relationships inside an individual company. Based on this, there was some research which suggested that, if the organisations make relation specific investments and combine the resources uniquely, then an improvement in productivity potential in the value chain will be seen. Performance, generated within the network – relational rent – has the following sources: inter-organisational specific assets, inter-organisational routines of sharing knowledge, effective governance and complementary resource endowments. The relational view relates to some of the knowledge-management concepts and sees the **creation of knowledge as a source of innovation in the relationship**. Furthermore, the company`s dependency on their supplier network has increased because of the rising outsourcing trend. In connection with the RV, the collaborative relationships between the buyers and suppliers have evolved as a result of observing successful Japanese management practices. Many supply chain relationships theories have evolved from the experiences seen in the automotive industry and thus have helped in developing concepts such as lean supply, network sourcing and partnership sourcing. (Dyer and Singh, 1998; Lorenzoni and Lipparini, 1999; Nishiguchi, 1994)

Combination of the Theoretical Influences

In order to understand the outsourcing evaluation, it is crucial to observe the mutual dependencies of the TCE and RBV approach. The RBV approach helps to **analyse the production skills**. The TCE suggests the **threat of opportunism and governance costs** to

be the most appropriate way of governance. If we **integrate these two perspectives** in relation to outsourcing, it means a **company can obtain the required production skills both internally or externally whilst employing the governance mode, which is the most appropriate.**

The TCE does not always explain all the possible governance alternatives, such as in rapidly changing industries. Internal and external governance skills can lead to a competitive advantage and superior performance. **Both parties** (the buyer and supplier) are involved in the **governance and production**, which is the opposite of what TCE states about the reduction of the governing costs. Investments with a **high level of the transaction specificity create** most the likely **valuable resources** in the **inter-organisational relationships**, which are **rare and hard to imitate**. If the organisation possesses suitable governance skills it can help it to access a wider range of external resources. **Governance** can be one of **the most critical competitive advantage resources** the firm possesses. (Madhok, 2002)

The **RBV** sees the **sources of the competitive advantage** as a **reason for being performed internally**, which is important for the field of outsourcing. In order to achieve this competitive advantage, the companies must strive to **create these critical strategic resources**, where it is possible to integrate certain IV aspects. *“It is possible to link Porter’s generic drivers that can act as a source of competitive advantage to the resources that are required to gain and sustain competitive advantage”* (McIvor, 2005, p. 59).

The **determination of critical business activities** is a **key part of outsourcing evaluation**, initiated by an internal organisational capabilities analysis to define the unique resources (RBV) or initiated by the competitive environment analysis, externally, to find the competitive advantage drivers (IV). The theories suggest, the organisation could consider the outsourcing of a non-critical activity in relation to the competitive advantage. It is also possible, that there is a potential activity that is important for a competitive advantage, which the organisation does not currently have sufficient capacity to perform itself. In this case it is necessary either to acquire the capability or employ a relational mechanism with a supplier that possesses this capability. The emphasis is also on the Porter’s generic drivers of competitive advantage involved in the inter-organisational relationships development. (McIvor, 2005)

1.3 Overall Outsourcing Drivers

The popularity of outsourcing has significantly increased so far and has been driven by many internal and external business environment factors.

Many companies have started to compete on a global basis because of **globalisation**. National markets have merged into global markets, as a result of this transfer from national to global markets, markets have now become separated from each other. Trade, distance and time barriers have converged into one mutual market. The globalization trend has been of course associated with many challenges causing organizations to have to consider the local needs and react quickly to any changes.

The **trade liberalisation** in developed economies has led to the loss of many vacancies as a result of companies increasingly outsourcing activities to developing economies with a lower-level of labour costs. This trend has been given a name **off-shoring**. However, many organisations that outsource their activities to developing countries have been accused of exploiting workers, who get paid a fraction of the wage in relation to their counterparts in the developed countries.

There has been a significant **development of information and communication technologies** forcing companies to employ experts in this field, since it has completely changed the way of performing business. It is nearly impossible to compete effectively without the application of information technologies.

The changes in the public sector have also influenced the business environment in many countries. McIvor (2005, p. 15) mentions for example that “*governments in the US and UK have pursued radical public sector reforms which have placed the use of competitive market mechanisms at the heart of these reforms*”. Some researchers warn, that public sector reforms caused the **myth of external contractors** being able to provide services and goods **more effectively** and efficiently **than internal employees**.

Another factor influencing the importance of outsourcing are the **consumers, becoming more demanding**. “*In many business sectors consumers have become more sophisticated and demanding as they have become more knowledgeable on issues such as price, reliability and availability*” (McIvor, 2005, p. 17). Customers demand more quality and product service

attributes for a lower price and thanks to the internet have a wider range of products and services to choose from. This lead to a significant decrease of loyal customers and an increase of their unpredictability and it has forced organisations in many areas to be more responsive to the customer's needs.

1.4 Reasons, Companies Outsource

As mentioned in the chapter bellow, there have been many influences on the business environment causing the necessity to outsource. However, every company has specific reasons for outsourcing. Dvořáček and Tyll (2010) divide the company's **reasons for outsourcing** in two groups:

- **economic** – the companies strive to save costs,
- **strategic** – the companies try to set up the development course and perform the activities with a lower number of internal resources.

Research performed by the *International Association of Outsourcing Professionals* (IAOP) confirmed, that half of the companies have decided to outsource in order to decrease their costs. It is a common mistake to use outsourcing only to decrease the company's costs more than to achieve other goals. Unfortunately, there is not a unified opinion of outsourcing specialists on this topic. The financial reasons accompany other reasons such as costs which are an important evaluation factor.

IAOP (2014) have found out, companies have the following goals when outsourcing:

- innovation,
- capital savings or variable cost structure,
- quality improvement,
- speed up the processes and turnover,
- approach to the abilities of the provider,
- concentration on the key business object,
- decrease the costs.

Nowadays, many companies are striving to achieve lower costs by outsourcing certain activities, but really significant benefits come from the **long term strategic decisions**.

Furthermore, there has been a trend of **insourcing**, already outsourced activities back in house, whilst the insourcing opportunities often represent the outsourcing challenges and vice versa.

1.5 Processes Suitable for Outsourcing

The current trend is to outsource those activities, which excessively overload companies and do not create any additional value of the final product. Many researchers suggest to outsource the core, support and peripheral activities, see the Figure 1, explaining the connection of the activities and the level of their substitution possibility – possibility to outsource.

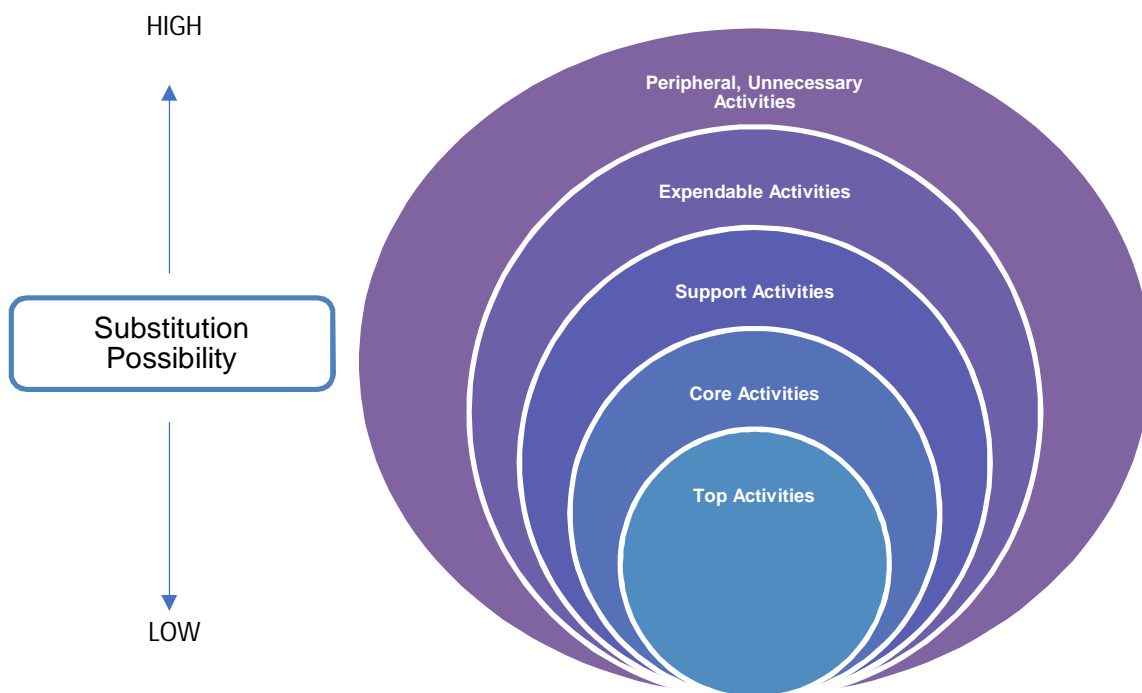


Figure 1 - Activities and Possibilities of Their Substitution

Source: Translation of Dvořáček and Tyll, 2010, p. 15

Some researchers suggest, that management shall choose and subsequently **outsource those activities**, which primary **do not create any value for the customer** and are rather supportive. According to Michael Porter (2005), (the author of the value chain), it is possible to divide the companies' activities into two groups – **primary** and **supportive** activities.

Primary Activities (Porter, 2005):

- inbound logistics,
- operations,
- outbound logistics,
- marketing and sales,
- service.

Supportive Activities (Porter, 2005):

- procurement,
- technology,
- human resource management,
- company's infrastructure.

Value-adding activities are those that create a product or service and have value for the final customer. Primary activities concern the physical creation of a product, its distribution to buyers and service. Support activities help the primary activities and themselves by obtaining inputs, technology, workforce and other functions.

As other researchers have confirmed, it is not correct to state, that only the support activities are suitable for outsourcing. It is possible to **outsource any activities** which **do not create the fundamental added value**, which means the activities, creating the **key business subject** of an organization. (McIvor, 2005)

There are **3 criteria for the determination of the key value-adding activities**.

1. The activity provides added-value to the customer.
2. The activities are hardly likely to be imitated by the competition.
3. The activities can be widely transferred to many other products and many other markets.

Dvořáček and Tyll (2010) suggest the following when outsourcing:

- Outsource those activities, of which the company performances the weakest.

- Search for the revolutionary activities.
- Search for successful patterns in the market.
- Monitor the internal support or unwillingness for outsourcing.
- Create the conditions for successful outsourcing.

Another possible approach of how to evaluate if the activities are or are not suitable for outsourcing is to **compare the value with the risks**. The risks and value are a part of a process. If the value, achieved by the outsourcing is greater than the risk, it is then suitable to consider outsourcing. However, this approach corresponds to the common practice of focusing on the economical values rather than considering outsourcing strategically. (IAOP, 2014)

McIvor (2005) suggests performing:

- the **value chain analysis**,
- map the **business process perspective**,
- analyse the **activity importance**,
- followed by a **capability analysis**,
- and an analysis of the **strategic sourcing options**.

However, the processes **suitability for outsourcing cannot be defined unequivocally**. It is necessary to always perform an **analysis** in order to see, if the outsourcing decision is a suitable decision not only in the **short-term** but also **long-term**.

Typically, companies outsource the following activities (IAOP, 2014):

- company canteens/food services,
- post services,
- HR and accounting services, IT services,
- maintenance services, cleaning services,
- logistics,
- finance.

1.6 Process Approach to Outsourcing Decisions

Process is the basis for the value creation in an organisation. It is a group of **logically connected activities** of two types: **transformational** (creating outputs from the inputs) and **transactional** (transactions for the outputs). Nowadays processes should be under continuous control and improvement. There are several international norms, such as ISO 9001 or VDA and many others, where the **continuous process improvement** is the basic prerequisite. In order to evaluate outsourcing, it is possible to use the simple Deming`s/Shrewhart`s principle PDCA which is also comparable with the KAIZEN or TQM (Total Quality Management). PDCA has the following stages (ISO, 2015):

1. **Plan** – what is the goal, what should be achieved
2. **Do** – realization of the plan
3. **Check** – compare the implementation results with the original plan
4. **Act** – correct the plan and its implementation and start with process improvement

The organization has to plan what should be achieved by outsourcing a certain activity and prepare a realization plan, including a financial and risk analysis. It is also possible to create a model situation in order to simulate the different scenarios.

The process of outsourcing can be described as follows:

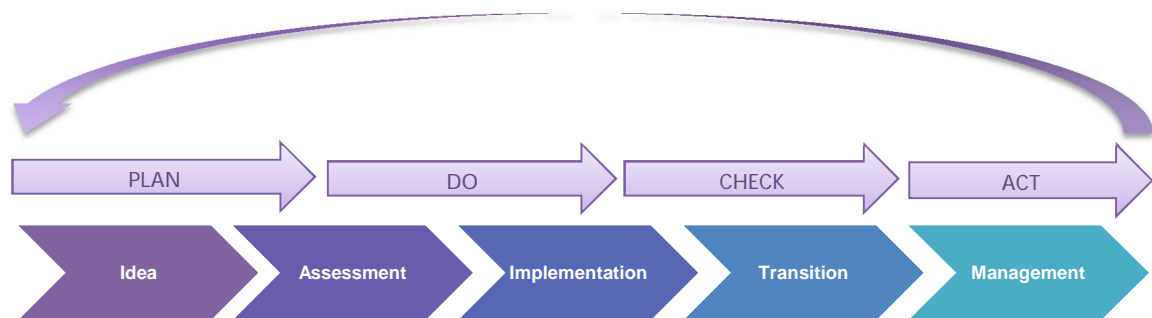


Figure 2 - Outsourcing Process and PDCA

Source: Own processing based on the ISO 9001 (2015)

The ISO 9001 (2015) also requires including the risk management (see the chapter Risk Project Management, p. 36) in order to evaluate and eliminate the risks as a part of the continuous process improvement.

1.7 Outsourcing Evaluation

Ronan McIvor (2005) from the University of Ulster has created his own framework for the complex evaluation of outsourcing which comprises from 6 stages (see the Figure 3).

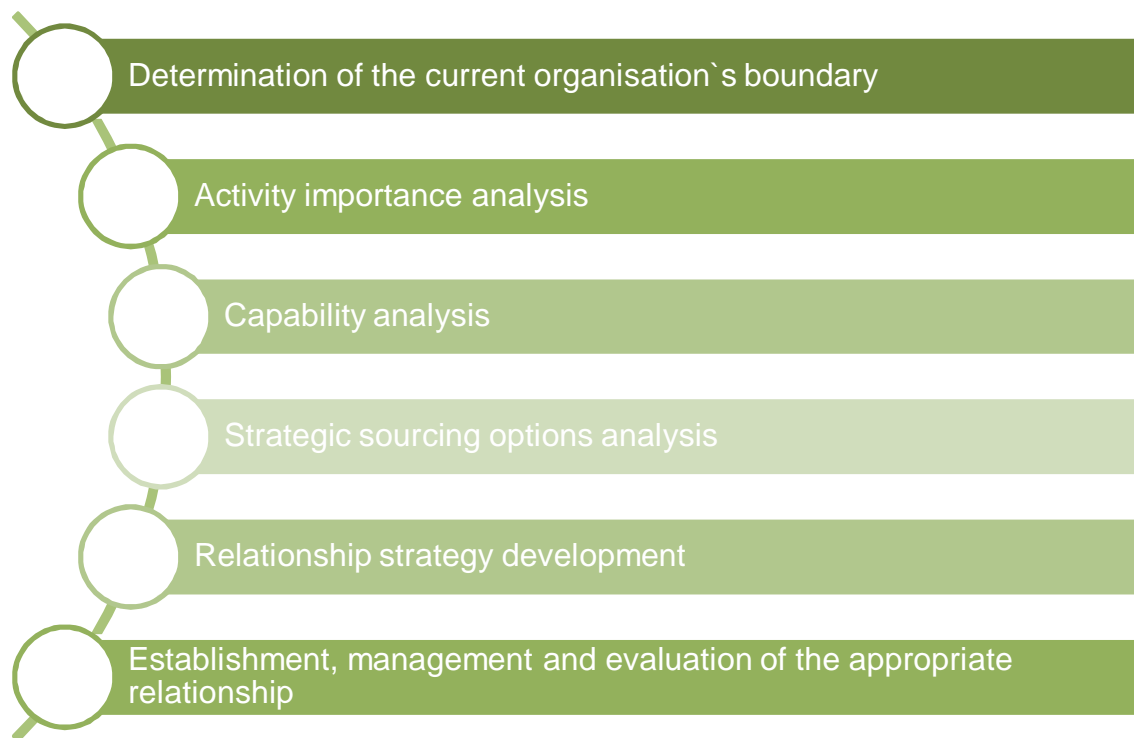


Figure 3 – Stages in the Outsourcing Evaluation and Management

Source: Own creation based on McIvor (2005)

Determination of the Current Organisation's Boundary

The goal of this very first stage of the outsourcing evaluation is to identify the key activities, contributing to the creation and delivery of the company's products and services, including the key activities identification which are performed either internally or externally. (Mc Ivor, 2005)

Activity Importance Analysis

As the name of this evaluation part suggests, it is about the importance level identification of the activities, contributing to the creation and delivery of the products and services to the customer. Critical activities significantly impact the organization's ability to get a competitive advantage. It is possible to use the value concept or critical success factor method and others. (Mc Ivor, 2005)

Capability Analysis

This part of the evaluation process focuses on the identification of an organisation's performance and asks, if this organisation is able to achieve a superior level of performance internally on a daily basis. To determine the organisation's capability in relation to its suppliers or competitors, it is important to analyse the type of advantage, such as superior quality, lower costs, and service levels. However, an organisation can also include their combination. After this, follows the analysis concerning how to understand how superior performance achieved. If the analysis reveals that the external service provider can perform the activity at significantly lower costs than internally, it is crucial to understand, how the supplier was able to reach this relative cost position, which can also help the organisation to improve the activity internally, without the need to outsource. (Mc Ivor, 2005)

Strategic Sourcing Options Analysis

This analysis concerns the evaluation of the potential strategic sourcing options and their implications. There are a few key determinants and thus: the disparity in performance, technology influences external environment and behaviour influences and as well the supply market risk. Furthermore, based on this analysis, it is possible to evaluate, if the activity should be performed internally by investing or developing or outsourced strategically, or simply outsourced. (Mc Ivor, 2005)

Relationship Strategy Development

If the organisations employ astute mechanisms for relationship management, they can achieve a competitive advantage and leverage in their capabilities. Firstly, the organisation has to define the objectives for outsourcing and select the supply relationship, monitor supplier's performance and the nature of the supply relationship. Then the organisation

should define the relationship strategy, based on the activity importance and supply market risk. After that, it has to consider if and how to develop the supplier. (Mc Ivor, 2005)

Establishment, Management and Evaluation of the Appropriate Relationship

The evaluation of the supplier should naturally be done before signing the contract. It is expected to evaluate if the supplier has the required capabilities to meet the organisation's needs. After the selection, the focus is on the contract, including the SLA (Service Level Agreement), payment terms, price, eventual transfer of assets and staff, contract termination conditions and flexibility. The relationship evaluation should be performed by a person with the necessary experience and skills to ensure the objectives of the relationship are met according to the outsourcing strategy. This evaluation should be an ongoing process and include for example, supplier performance evaluation, level of the dependency and strength of the relationship. These actions can lead to the relationship, remaining at the same level, or to its further development as well as to reduction or discontinuation of the scope of the outsourcing relationship. (Mc Ivor, 2005)

2. Theoretical Framework of Financial Analysis and Risk Assessment

This chapter describes the fundamentals of financial analysis and furthermore focuses on project financial analysis. Then it states the theoretical background of a risk analysis, whilst risks are tightly connected with the outsourcing process.

2.1 Financial Analysis

Financial analysis can be described as a set of activities, aimed at the **complex evaluation of a company's financial situation**. From a wide perspective, the financial analysis should be able to recognize the business's health, reveal its weaknesses and identify its strengths which are supposed to be a basis for any future development and the company's decisions. Financial analysis mostly uses data from the past, it is nonetheless a foundation for any future decisions. (Růčková, 2015)

The evaluation aims to capture the company as a unit and in all aspects, which influence the organization's financial situation. The analysis focuses on the following parts:

1. Short term financial situation – payment ability within 1 year
2. Long term financial situation – ability to cover long-term obligations
3. Effective functioning of an organization – achieved lucrativeness

This thesis focuses mainly on the individual parts and tools of a financial analysis, specifically then on project financial analysis and risk analysis. (Friedlob and Schleifer, 2003)

2.1.1 Financial Analysis Users

Information gained by the financial analysis is important not only for the company's managers, but also for other entities. The users can be divided as follows:



Figure 4 - Financial Analysis Users

Source: Own processing based on the literature recherché

2.1.2 Financial Analysis Inputs

The basic inputs for the financial analysis are the internal information, followed by the external information. Information is usually gathered from (Friedlob and Schleifer, 2003):

- finance records, from the final account and its attachment (balance sheet, profit and loss statement),
- management accounting data,
- company's statistics, development forecasts, and such like.

2.1.3 Financial Analysis Methods

There are 2 approaches, used for the evaluation of economical processes, these are fundamental and technical analysis. **Fundamental analysis** is based on the knowledge of the reciprocal contexts between economical and non-economical processes. It considers a significant amount of information and deduces conclusions ordinarily without any algorithm. On the other hand, the **technical analysis** uses mathematical, statistical, mathematic-statistical and other algorithmized methods for quantitative data processing, followed by the results evaluation. From an economic point of view. It is usually necessary to combine both of these methods. (Knápková, 2013)

2.2 Project Financial Analysis

Outsourcing is a long-term project and therefore, the project financial analysis is a way to analyse its financial situation. The evaluation of a socioeconomic and financial effectiveness of an investment project is often also a key part of the project financial analysis. According to Slavík (2013) project financial analysis ordinarily includes (Slavík, 2013):

- definition of all the project inputs and the investments,
- calculation of the project costs and profit,
- cost and profit development plan, break-even point analysis,
- plan of the project cash flow,
- planned assets quantity and resource coverage,
- quantify the project effectiveness financial indicators,
- project sensitivity analysis,
- project risks analysis.

The used methods and steps depend on each project individually.

Most of the projects are connected with some investment, therefore the researchers suggest to evaluate a project as an investment. According to the online Cambridge Dictionary (2018), investment means “*the act of putting money, effort, time, etc. into something to make a profit or get an advantage, or the money, effort, time, etc. used to do this*”. It is necessary to monitor which profit brings the investment to the organisation and when will it be realised, furthermore if there are any risks connected with the investment and what is their value. To evaluate the investment profitability, there are static and dynamic methods. (Friedlob and Schleifer, 2003)

2.2.1 Project Budget Planning

Calculation of the project costs is an integral part of the project planning process, furthermore, for its financial analysis. It summarizes all the information about the expected use of the project resources, separated into the key cost groups. (Doležal et. col, 2012)

The project budget includes the following sums:

Direct costs – which can be directly assigned to the project in the accounting, during the project realization, for example (Doležal et. col, 2012):

- work, travel costs,
- material,
- technology purchase or lease,
- licenses and fees,
- external project services – transport, waste disposal, ...,
- insurance,
- funding costs, such as interest rate, bank fees and others.

Indirect costs – can't be in the accounting directly assigned to the project, however these are connected with the following activities (Doležal et. col, 2012):

- administration activities of internal employees connected with the project,
- a part of the marketing, external services and other costs,
- a part of the overhead costs connected with the cleaning services, building administration, technology administration and others,
- taxes and similar arts of payments.

Other costs – are not included in any of the previously mentioned categories and their calculation is based on the specific analysis, for example (Doležal et. col, 2012):

- budget to preemptively cover unforeseen situations – reserve for the identified risks,
- managerial reserve, which can cover the unknown risks,
- bonus payments to the dealers, provisions and other costs relating to the project that differ to the other two categories.

The final financial plan is usually adjusted by the company itself and is a part of its know-how.

2.3 Risk Project Management

The outsourcing process is tightly connected with risk situations and in order to eliminate these risks, it is necessary to perform risk management. Risk project management proceeds from risk engineering, which understands risk as the possibility to get damaged. Risk project management is sometimes simplified with the term risk analysis, which is a part of the whole management process. **Risk** can be generally **defined** as a **probability that some phenomenon occurs**. (Korecký and Trkovský, 2011)

Risk project management includes preventive or corrective activities leading to the deflection of events and disposal of influences which might endanger the planned processes or lead to other unintentional results or cause damage. This process remains in place for the whole duration of the project realization. (Svozilová, 2011)

There are more possibilities - how to divide the types of risks based on their predictability, occurrence probability, effect seriousness, place of the origin regarding the project, the level of the controllability and elimination or other criteria. The diagram on the next page (Figure 5 - Types of Risks) suggests possible types of risks, depending on their environment and predictability. (Smejkal and Reis, 2010)

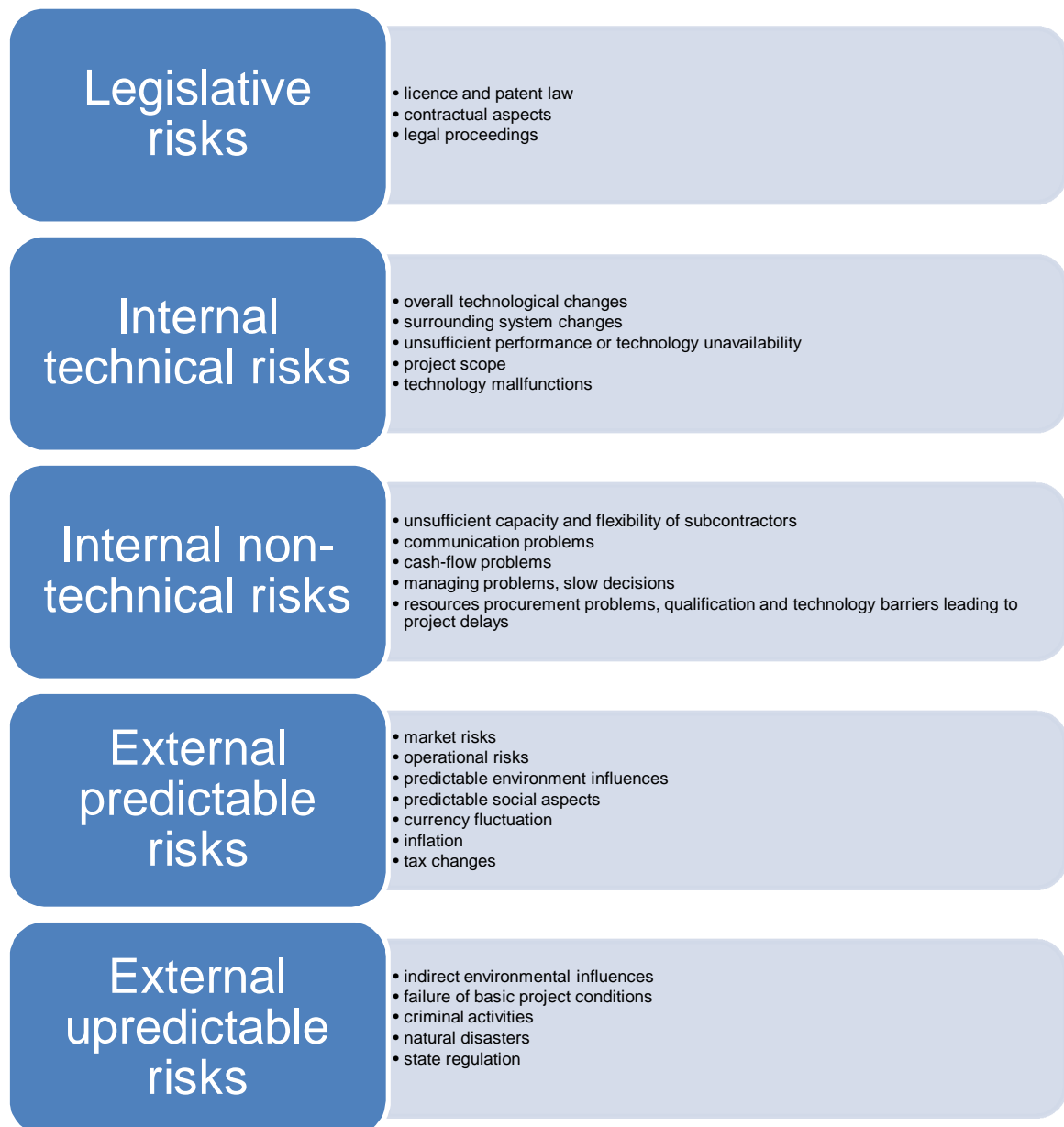


Figure 5 - Types of Risks

Source: Own processing based on Svozilová, 2011, p. 281

According to the ISO 31 000 (2018) the risk management should include the following processes (ISO, 2018):

- establish a unique risk management context,
- perform a risk assessment process,
- identify the organization`s risks,

- analyze the organization`s risks,
- evaluate the organization`s risks,
- monitor and review the risk management process,
- communicate and consult,
- formulate and implement the risk treatment plans.

2.3.1 Risk Analysis

After the identification of possible risks, it is crucial to **estimate the occurrence probability** and estimate the **level of any expected unfavourable impact on the project** – the suffered financial damage. Because there is usually not enough statistical data to determine this probability, it is common to use the **expert estimation technique**. In order to eliminate the uncertainty of the estimate, the practice is to divide the risks and its impacts into a few smaller parts. The final impact is then computed from these parts and has a lower error rate than the whole case. (Svozilová, 2011; Smejkal and Reis, 2010)

Risk analysis can be:

- **quantitative** – the probability and the loss value is determined by a direct numerical value,
- **qualitative** – the values are determined verbally.

At the end, the qualitative analysis outcomes are transferred to the quantitative as well. (Svozilová, 2011)

A typical example of a qualitative method is the SWOT analysis which describes the project or company`s strengths, weaknesses, opportunities and threats. There are several methods which can be used to evaluate the risks. The author of the thesis describes some of the ones suitable for the outsourcing implementation.

Score method with a risk map

There are 3 stages of the score method with a risk map (Doležal et col., 2012, p. 94):

1. Risk identification
2. Risk evaluation
3. Measure suggestions to lower the risk.

The risk identification is performed through the risk factors, where each risk receives a score on how probable it is that it could occur, and what impact will it have. This approach uses the Team Delphi method to determine the expert estimate. The final risk score is then calculated from more of these independent estimates. At the end, the method proposes creating suggestions to lower the risks. (Triantaphyllou, 2013)

Multiple-Criteria Decision-Making

Multiple-criteria decision-making (MCDM) is a tool to structure and solve decision and planning issues, which involve more (multiple) criteria. Typically, there is no optimal solution to these problems and the decision maker's preferences are used to differentiate between solutions. With the MCDM-methods it is possible to choose 1 variant, to align them or to classify them. (Triantaphyllou, 2013)

Scenario Planning Method

The core of this method is the creation of a few alternative versions of the future and furthermore to define the steps needed to be taken if this future scenario happens. Each scenario gets its probability and the level of the negative outcome. This method is highly time-demanding and requires a certain level of expertise in order to be performed effectively. (Doležal et. col, 2012)

Tree diagrams

A tree diagram is a graph, which describes the event's development. It is a schema of the process description, which simplifies the situations arising with the decision-making process. The creation of a tree diagram requires a certain level of imagination. The diagram describes which consequences are from the event "E" or which causes lead to the event "E". (Doležal et. col, 2012)

Expert methods

The expert methods use the experiences and erudition of experts who cooperate in the expert teams to verbally or numerically evaluate a problem with their subjective opinion. The aim is to collect comparable and evaluable opinions which do not have to be uniform. It is important to include also the extreme opinions, which would normally be excluded from the statistical point of view. Expert methods use either verbal or numerical estimates. The easiest method of the verbal analysis is for example brainstorming or brainwriting, other method is the what-if-analysis. The numerical analysis uses for example team numerical estimates, tree diagrams such as the failure tree analysis or also a questionnaire. The most common method is the FMEA (Failure Mode and Effect Analysis), which combines the verbal and numerical evaluation. Included in the expert methods is the already mentioned SWOT analysis. (Doležal et. col, 2012; Svozilová, 2011)

3. Risks, Advantages and Disadvantages of Outsourcing and Possibility of Their Quantification

This chapter focuses mainly on risks arising during the outsourcing process and describes its advantages and disadvantages. Furthermore, it suggests the possibilities of the risk quantification and human work evaluation in order to evaluate the outsourcing process.

3.1 Advantages and Disadvantages of Outsourcing

There are of course many advantages of outsourcing as well as disadvantages. The disadvantages can often be eliminated by choosing the right business partner. It is crucial to **separate the individual processes** to be outsourced in order to **evaluate and decide, if outsourcing is the right approach** in the particular case. The following table states some of the advantages and disadvantages of outsourcing:

Table 1 – Advantages and Disadvantages of Outsourcing

ADVANTAGES	DISADVANTAGES
Specialisation, focus on the key activities	Lower flexibility, unavailability in a required time
Access to the service levels of a global market	Loss of control over the process, dependency on the suppliers
New technologies without any additional costs, access to innovation	Decision irreversibility without high costs
Lower responsibility	High costs in case of changes
Costs reduction	Costs increase
Investment decrease, the company investment focus on the key activities	Supply market risks and others (old technology, low service level, provider bankruptcy ...)
Sharing risks with the provider	Uncontrolled information flow outside the company
Better management of peripheral activities	Loss of skills, internal talents
Cashflow increase	Possible law and social problems
Performance improvement	Necessary to manage the relationships

Source: Own processing based on the literature review

3.2 Common Mistakes in the Outsourcing Process

Although outsourcing has been performed globally for a long period of time, **companies tend to outsource ineffectively**. The mistakes are following (IAOP, 2014; McIvor, 2005):

- Companies strive to **achieve everything** by outsourcing and thus they want to **cut the costs, work more effectively and be more flexible** in the way of being able to promptly decrease and increase the service availability. **It is not possible to meet all** these three **objectives**. It is necessary to choose **one priority**.
- Many organizations **think**, when outsourcing, they are **no longer responsible** for the activity and its results. Some risks can be delegated to the service provider, but not infinitely.
- It is **not correct** to say, when the activity is outsourced, the **problems** connected with it **had been solved** and if some problems occur, they are not the problem of the company.
- The companies **forget to think strategically** and are unaware of the fact, they can **lose a key element** of their product, which can cause production stop.
- Purchase of goods and services are seen as the same. However, when ordering a service, it is crucial to consider the transaction and indirect costs.
- Organizations tend to think, outsourcing is independent and as a result they create an outsourcing **relationship which does not correspond with the business objectives** and expected results.
- **Outsourced activities tend** to be **evaluated as cheaper** than the in-house activities. This comes from comparing only the direct outsourcing costs and forgetting to perform a risk analysis and include the indirect costs.
- There is often a **misinterpretation of the tax benefits**, especially in research and development activities.
- There is **no plan** of the outsourcing evaluation and **decisions are made universally**, usually on the **cost reduction basis**.
- There is no **risk or strategic analysis** involved in the outsourcing process of many companies.

McIvor (2005) suggests, it has been proven, that **organisations trying to reduce costs by outsourcing don't necessarily decrease** their costs, but in some cases their **costs increase**. Because outsourcing should not be seen just as a way of decreasing the costs, but also as a strategic decision, a tool for a competitive advantage or for higher efficiency.

3.3 Risks Connected with Outsourcing

Every management decision involves a certain level of risk. It is always individual, which risk level is acceptable for the organization or not and how the risks are evaluated.

The IAOP (2014) divides the outsourcing risks in 4 major classes:

Strategic risks (IAOP, 2014):

- Companies might lose control over their future business decisions, lose their knowledge (connected with the intellectual properties protection).
- The changes in the service provider might affect the customers, especially while offshoring.
- There are several risks connected with the geo-politics and cultural differences.
- The customer's ability to perform business might be affected by a security violation in case of the involvement of the personal information.

Operational risks (IAOP, 2014):

- Outsourcing is affecting the organization's people (those remaining with the company and those being transferred to the service provider).
- There are risks connected with the integration of the processes.
- There can be poor performance, significantly while offshoring.
- Future legislation and regulatory compliance changes.
- Companies have lack of the back-up and disaster recovery plans, business continuity and contingency.

- Compliance with the regulations such as health, banking or data related laws, public company related regulations and rules of certification such as ISO, American Bar Association, Medical Association and others.
- Lack of discipline and defined knowledge management process.

Result risks (IAOP, 2014):

- There is an uncertain level in the likeliness that the intended results will be achieved.

Transactional risks (IAOP, 2014):

- dispute resolution, termination clauses for the cause and convenience,
- liability, asset transfers,
- indemnity, warranties, payments,
- intellectual property ownership.

Financial risks (IAOP, 2014):

- All of the risks mentioned above (organisational, result and transactional) together with the consideration of the cost levels changes, exchange rates and many others have a financial impact and therefore also a financial risk for the organization.

These **risks** have to be **managed** and **assessed** in order to outsource correctly.

IAOP (2014) describes additionally risks connected with the offshoring, which include for example quality, labour pool, educational system, government support level, process maturity and others.

3.4 Risks Quantification

Risk have its value which can be computed as a product of probability, the risk occurs, and the value of an expected impact (Doležal et col., 2012):

$$VR = P \times I \quad (1)$$

VR = value of a concrete risk

P = value of the probability that the risk occurs

I = value of the expected impact, caused by the risk

Based on the risk assessment methods, described in the chapter 2.3.1 Risk Analysis, the determined risk value can be computed through the equation mentioned above.

Each determined risk has to be assigned with the expected impact it might cause and the probability that the risk occurs. These can be calculated either statistically, or based on expert opinion, or the combination of these.

The probability, a risk occurs can be determined using the scale (for example from 1 to 10), where 10 means a 50% possibility the risk occurs and 1, meaning 5% possibility. The probability can be also determined verbally as (Doležal et col., 2012):

- High probability – above 33 %
- Middle probability – 10-33 %
- Low probability – under 10 %

The mentioned possibility percentage varies and is determined by many researchers and companies differently.

The probability can be also determined by ranking the risks in order from the most probable to the least probable. The value of the expected impact can also be determined verbally or calculated according to statistical and financial data.

3.5 Human Work Evaluation

Since one of the advantages or disadvantages is the different performance level between using internal resources and an external service provider, it is necessary to have a tool to evaluate it.

There is the possibility to compare the working effectivity of internal workers with the working effectivity of the externals, especially when a company has existing experience of outsourcing of a certain activity and there is some statistical data to compare.

One of the possibilities is to compare via the standard (required) job performance, which corresponds to the usual job intensity. The **standard performance** can be defined either **statistically**, as an average job performance of more workers, or by an **estimate**. (Gordon and Miller, 2012)

The author of the thesis suggests calculating a **labour performance index**¹, using the job performance in hours, but it would be also possible to compute the production in pieces, or services provided, etc., depending on the business area. The equation is as follows:

$$i_{LP} = \frac{JP}{JP_S/100} \quad (2)$$

i_{LP} Labour Performance index²

JP Job Performance (in hours /goods produced / ...)

JP_S Standard Job Performance

After this evaluation, it's possible to compare the labour costs of the workers, with the different level of their job performance, using the labour performance index.

$$LC = W \times i_{LP} \quad (3)$$

LC Labour Costs

W Wage

¹ The equation was created by the author of this thesis, based on the text description in the reviewed literature.

² $i_{LP} < 1$; if the labour performance index is lower than 1, the performance is higher than standard

$i_{LP} = 1$ if the labour performance index is 1, the performance is the same as standard

$i_{LP} > 1$ if the labour performance index is higher than one, the performance is lower

After the labour costs computation, it is possible to compare either the individuals, or working groups with higher precision and more realistic.

The **final project costs** are always **highly affected by the performance level** and **individual deployment**. An important fact to be considered is that there could be enough or too few skilled workers in some organizations and if we plan an outsourcing contract with a reputable partner, it does not necessarily mean the same level of satisfaction on our side. If the external company provides the manpower, there is a **significant level of uncertainty** regarding their skills, deployment, quality and other personalized skills. (Gordon and Miller, 2012)

4. Case Study on the Advantageousness of Outsourcing in a Chosen Company

The aim of this chapter is to quantify the possible risks associated with the outsourcing process and evaluate the advantageousness of this practice in a chosen organisation. Firstly it describes the business unit and analysis its costs in a financial analysis. Then it focuses on the job performance analysis, furthermore quantifies the risks connected with the outsourcing process and finally analysis the organisations value chain and its strategic sourcing options and analyses the relationships. Finally, it concentrates on the future development and the author make suggestions on how to improve its potential.

4.1 Practical Example

A car manufacturer, operating in international markets runs its own testing laboratory, where the exhaust gas analysis is performed. The gas analysis equipment, chassis dynamometers, portable emission measurement system and other necessary equipment are owned by the company.

There has been a significant change in automotive testing during the last decade, subsequently, speeded by the scandal in the USA called “Dieselgate” which drove the EU to push through changes in the EU homologation legislation in means of the shift from the NEDC³ to WLTP⁴, based on the strictest regulation in the USA. The laboratory has to adhere

³ NEDC – **New European Driving Cycle** was used for the car homologation from ... to ... and had a high rate of repeatability, however it was criticized for its low “real-life” comparability.

⁴ WLTP – **Worldwide Harmonized Light-Duty Vehicles Test Procedure** has been approved for the homologation, starting in September 2018. Compared to NEDC, the WLTP considers differently for example the special equipment, influencing the final weight of the car, aerodynamics and energy consumption. There are also different requirements for the testing equipment, mostly the chassis dyno, which has to constantly simulate the individual weight of the tested vehicle.

and adapt to all the legislation changes and perform the tests in accordance with the regulations. In order to do so, it is crucial to have skilled drivers.

The driver`s task is to follow a legal driving curve with highest accuracy and needs to adjust to the different vehicle types, since every car has a different specific handling behaviour, depending on the configuration.

In the past, company took the decision to outsource the position of the test drivers in order to decrease the HR costs and lower the staff number and furthermore to focus on its core activities. This decision was also connected with the differentiation of the costs groups. The personal costs were administrated by a different department than the overhead or investment costs.

4.2 Financial Analysis

According to an internal financial analysis, the average costs of one RD worker were calculated at the level of 52,40 \$C⁵. However, this also includes additional benefits and payments or administration costs. In order to directly compare the direct costs of the workers, the average salary costs were first compared.

Direct costs of an internal, non-university educated worker are approximately 3 200 \$C per month, making 21,33 \$C per hour with 150 working hours per month. The price of an external worker with the same education level is 34,87 \$C per hour, with 150 working hours per month, making 5 230 \$C before tax.

⁵ \$C – “Czech Dollar” is a fictive currency, used by the author of this thesis to keep the internal information about the wage levels and other costs in secret. The adjusted table of internal labour costs is attached at the end of the thesis (see [Appendix A](#)).

Table 1 - Internal Labour Costs

Internal costs of 1 RD worker	Per hour	Per month	Per year
Direct wage	\$C 21,33	\$C 3 200,00	\$C 38 400,00
Direct wage including indirect costs	\$C 52,40	\$C 7 860,00	\$C 94 320,00

Source: Own processing based on the internal documentation

The following table shows the direct costs of the external workers. However, it is necessary to also consider the indirect costs, as stated in the chapter 2.2.1 – Project Budget Planning.

Table 2 - External Labour Costs

External costs of 1 RD worker	Per hour	Per month	Per year
Direct wage	\$C 34,87	\$C 5 230,00	\$C 62 760,00
Direct wage including tax	\$C 42,19	\$C 6 328,30	\$C 75 939,60

Source: Own processing based on the internal documentation

The Table 3 shows, that the external direct costs are significantly higher than the internal costs. However, it's harder to compare the costs just on the hourly basis, since the costs can be influenced by a different productivity level and in order to compare all the project costs, it is necessary to compare also the indirect and other costs, as mentioned in the chapter 2.2.1 – Project Budget Planning, p. 34.

Table 3 – Direct Labour Costs Comparison

Direct costs comparison	1 worker per year	10 workers per year
Internal	\$C 38 400,00	\$C 384 000,00
External	\$C 62 760,00	\$C 627 600,00
Difference	-\$C 24 360,00	-\$C 243 600,00

Source: Own processing based on the internal documentation

The **indirect costs** are firstly connected with the **administration, purchasing process, evaluation** and the **day to day operations**. These costs were calculated after **questionnaires** with the persons involved in the process. The **laboratory manager** spends approximately 20 hours monthly on the task assignment, which has to proceed through the external manager

firstly and after that to the external test drivers. The manager spends from 20 to 28 hours per month on the administration tasks such as meetings with the external service provider to agree the monthly scope, etc. The manager also spends 8 hours a year on the preparation of the contract. However, he uses an existing template. In case of having to create a new one, these activities would last 8-14 hours longer.

The **laboratory internal workers** spend app. 36 hours a month on supportive activities of the manager, connected with the external workers. Every month, there are 2 workers involved in the **economic activities** such as invoicing and similar and spend around 18 hours per month on them. The **purchasing department** has to process the contract for an external provider which takes about 8 hours yearly. The following table (Table 4) shows the calculation of the indirect costs per year.

Table 4 - Indirect Outsourcing Costs per Year Internally

Party involved	Hours yearly	Wage + indirect costs	Costs
Manager	584	\$C 69,40	\$C 40 529,60
Laboratory staff ⁶	432	\$C 69,40	\$C 29 980,80
Economical staff	216	\$C 69,40	\$C 14 990,40
Purchasing	8	\$C 69,40	\$C 555,20
Total	856	---	\$C 86 056,00

Source: Own processing based on the internal documentation

The author suggests, based on the previous research, to compare the costs of outsourcing, defined by the contract, with the internal direct as well as indirect costs arising during the outsourcing process every year. The computation was adjusted to a group of 10 workers and arranged into the following table - Comparison of Internal and External Costs.

⁶ The price of the laboratory and management staff was computed internally at the level of 69,40 \$C per hour (see the [Appendix A](#))

Table 5 - Comparison of Internal and External Costs

Type of costs		10 workers per year
Internal Costs	Direct	\$C 384 000,00
	Indirect	\$C 559 200,00
	Total	\$C 943 200,00
External Costs	Direct	\$C 627 600,00
	Tax	\$C 131 796,00
	Indirect	\$C 86 056,00
	Total	\$C 845 452,00
Difference		\$C 97 748,00

Source: Own processing based on the internal documentation

The table shows that the outsourcing costs of 10 workers are 97 748,00 \$C lower than when performed internally. However, this table compares only the number of hours regardless of the efficiency and presumes that the time, needed for the job is internally and externally the same.

Firstly, regardless of the job performance, it is necessary to include also the qualification costs connected with the external workers. An emission test driver needs approximately 12-16 weeks to reach a satisfactory qualification level (450 hours). According to the internal statistics, the internal workers are involved in the qualification process at the level of 200 hours per driver. The total qualification costs of 1 test driver are approximately 32 864,90 \$C (see the Table 6).

Table 6 - Qualification Costs

QUALIFICATION COSTS	Per hour	Per worker
External (incl. tax)	\$C 42,19	\$C 18 984,90
+ internal	\$C 69,40	\$C 13 880,00
TOTAL (each new worker's qualification costs)		\$C 32 864,90

Source: Own processing based on the internal documentation

As mentioned above and in the chapter 2.1, the qualification costs also affect the total costs of outsourcing. The following table therefore compares the internal and external costs including the qualification costs.

Table 7 - Costs Calculation Including Qualification Costs

Type of costs		10 workers per year
Internal Costs	Direct	\$C 384 000,00
	Indirect	\$C 559 200,00
	Total	\$C 943 200,00
External Costs	Direct	\$C 627 600,00
	Tax	\$C 131 796,00
	Indirect	\$C 86 056,00
	Qualification	\$C 328 649,00
	Total	\$C 1 174 101,00
Difference		-\$C 230 901,00

Source: Own processing based on the internal documentation

The table suggests, that the outsourcing is 230 901,00 \$C more expensive than when performed internally. This difference will tend to grow significantly as there is a significant turnover of external workers (internal sources) and therefore, the outsourcing will carry considerably higher costs than when performed internally. In this case it is necessary to evaluate the future company strategy and decide, if to suffer the higher outsourcing costs rather than to perform the activities internally.

4.3 Job Performance Analysis

According to the equation, stated in the chapter 3.5 - Human Work Evaluation, the labour performance index was computed as follows⁷.

$$i_{LP} = \frac{JP}{JP_S} = \frac{6006}{\frac{8320.5}{100}} = 1,3854 \quad (4)$$

The labour performance index suggests, that the outsourced performance is lower than the

⁷ The standard job performance was evaluated on the basis of real data of a similar laboratory and the job performance of the test drivers was gathered from internal statistics.

standard performance, this was computed statistically from the internal experiences and based on real data from a laboratory which performs the same activities internally.

After that, the author conducted a computation of direct labour costs per hour, multiplied by the i_{LP} , based on the equation in the chapter 3.5 - Human Work Evaluation, p. 45.

$$LC_{OUTSOURCING} = W \times i_{LP} = 34,87 \times 1,3854 = 47,36 \$C \quad (5)$$

According to this outcome, it is necessary to adjust the previous financial analysis in the part of the direct wage costs. Since the computation doesn't include the qualification performance level or other activities, these won't be changed.

Table 8 - Direct Costs Comparison Including the Job Performance

Direct costs comparison	1 worker per year	10 workers per year
Internal	\$C 38 400,00	\$C 384 000,00
External	\$C 85 253,18	\$C 852 531,84
Difference	-\$C 46 853,18	-\$C 468 531,84

Source: Own processing based on the internal documentation

The direct costs comparison shows a significant change, however, it is crucial to compare all the indirect costs, see Table 9.

Table 9 - Direct and Indirect Costs Comparison Including the Job Performance

Type of costs	10 workers per year	
Internal Costs	Direct	\$C 384 000,00
	Indirect	\$C 559 200,00
	Total	\$C 943 200,00
External Costs	Direct	\$C 852 531,84
	Tax	\$C 179 031,69
	Indirect	\$C 86 056,00
	Qualification	\$C 328 649,00
	Total	\$C 1 446 268,53
Difference		-\$C 503 068,53

Source: Own processing based on internal documentation

After the adjustment of the financial analysis with the labour performance index, the difference between the internal and external costs increased rapidly from 230 901,00 \$C to 503 068,53 \$C, which demonstrates inapt outsourcing. This amount of money corresponds for example to 7 248 hours of internal work, which is over 48 months of internal work and that means 2 years of 2 internal workers or shorter time and spare hours that could set aside for overtime when performing the activities internally.

As already mentioned above, the economical drivers are not the most important key factors for the outsourcing process. Therefore, it is also necessary to analyse the risks and strategic position.

4.4 Risks Quantification

There are several risks connected with the outsourcing process of the laboratory test drivers. The risk analysis in this chapter is based mainly on the expert methods – firstly, verbal and then numerical, as mentioned in the chapter 2.3.1 - Risk Analysis.

The author of the thesis suggests the following risks:

- **Change of the service provider** – the service provider contract is just for a limited period of time. After that it is necessary to start the purchasing process again. There has not been any concurrent so far, however, in case, that another provider appears, the company could lose literally everything that has been invested and established in the current service provider relationship so far. If the provider changes, it is to be expected, that the test drivers will also change with a new provider.
- **Insufficient skills causing the capacity shortage** – because of a lack of knowledge or talent, the drivers have a higher error rate and therefore some tests are invalid, which means, it is necessary to perform them again. This leads to a capacity shortage and in an extreme case it could endanger some projects, which will not get the needed capacity, or they will not get it in time.
- **Frequent fluctuation of the workers** – since the external workers have different conditions than the internals, they tend to leave their job as a test driver either to work on a similar position internally or to leave the laboratory completely.

Regardless of the reasons, the fluctuation means, that the laboratory loses a qualified worker and has to train a new one, which is connected not only with higher costs, but also with working relationships/rapport difficulties and capacity shortage. The capacity is compromised because the new drivers have to go through the qualification process this uses the capacities of the test cells, which are already running at an overloaded capacity.

- **Increased administration costs caused by legal or other external conditions** – an external worker cannot be administrated in the same way as the internal employees. These conditions are defined by the law. For example, the external drivers can be assigned only by a task, defined by a contract and the assignment proceeds through the external provider and not directly by the laboratory manager or other laboratory workers. In other European countries it is not possible to seat internal and external workers in one common office, needless to mention, this would be problematic having to implement this rule in the laboratory. Furthermore, the legal conditions in the outsourcing area have changed significantly over the few last years and it is to be expected that this trend will continue.
- **Costs increase of the external service provider** – since there is a significant amount of know-how shared with the external service provider and there are not many competitors in this field, it might lead to an increase in the cost of the external contract. If the provider uses this competitive advantage, the risk of costs, being increased is on a high level.
- **Change of internal conditions** – there are several internal rules affecting the outsourcing process such as time, after which it is necessary to start a new purchasing process, the purchasing is usually based on the direct “lowest-price” approach and others. Every, even a little change, can affect the future development of the contract with the external service provider. These conditions cannot be always directly impacted by the laboratory.
- **Loss of Know-How** – the test driving skills are a valuable know-how and the longer the driver works, the better he gets to know the behavior of different car configurations, which helps to stabilize the test results. The organization provides this know-how to the external service provider, which helps it to gain a higher competitive advantage.

- **Loss of competitive advantage** – the test driver is one of many key points of the measurement process. Know-how and critical skills of the drivers can be beneficial for the engine developers and others, who need to have highly comparable test results. The organization qualifies the external workers and loses its own competitive advantage, which in turn goes to the external service provider.
- **Loss of critical skills and the potential for innovation in the future** – this relates to the previous points and suggests the possibility of losing the innovation potential of the laboratory.
- **Insufficient opportunities to motivate the workers** – there are different working conditions for the internal and external workers and it is hard to influence the external worker's motivation. Based on this, the performance level could tend to descend.
- **Tense working relationships** – due to the various differences of internal and external workers, working tightly together in one team, the relationships tend to be tense in many situations.

The above-mentioned risks were also consulted with the laboratory and other experts. After that, a group of experts was questioned in order to determine the probability of the occurrence of these risks and at last to determine the level of the possible damage they might cause.

The following table ranks the risks in order according to the probability they could occur (based on the expert opinions) from 11 - highest possibility to 1 - lowest possibility, based on the chapter 3.4 – Risks Quantification.

The evaluation was performed internally, see the Appendix B.

Table 10 - The Probability the Risk Occurs

Risk	Probability
Loss of Know-How	11
Change of the service provider	10
Insufficient skills causing the capacity shortage	9
Loss of critical skills and the potential for innovation in the future	8
Frequent fluctuation of the workers	7
Loss of competitive advantage	6
Insufficient opportunities to motivate the workers	5
Costs increase of the external service provider	4
Tensed working relationships	3
Increasing administration costs caused by the legal conditions	2
Change of internal conditions	1

Source: Own processing based on the internal documentation

The possible impact of these risks was then evaluated verbally, based on the following table.

Table 11 - Risk Levels and the Value of Their Impact

Risk level	Value of the impact
Low	\$C 65 000,00
Low-medium	\$C 330 000,00
Medium	\$C 660 000,00
Medium-high	\$C 1 300 000,00
High	\$C 3 300 000,00
The highest	\$C 6 600 000,00

Source: Internal Documentation

Loss of Know-How

The risk value could be computed as a loss of the qualification costs of external workers, multiplied by the years. Since the driver's skills are usually gained in more years, it would be appropriate to calculate the real time in which it takes the driver to reach this peak level of competence, but there is no statistical data to compare. 2 years were assigned as the shortest time by the experts to reach a satisfactory level of skill. The qualification and training phase is not the only part of know-how. The unique know-how can create a strategic feature and lead to a competitive advantage. This risk value was therefore assigned verbally as "high".

Change of the service provider

This risk can be calculated based on the qualification costs. A change of service provider might cause a loss of the know-how and will be connected with the costs, needed to qualify new workers. It will be also connected with the capacity costs, meaning the costs of test which could not be performed internally, because there will be no qualified personal and the capacity will be used to qualify the new workers. However, the external laboratories are also highly overloaded, which might cause difficulties to perform the testing at all and some of the personal might transfer to the new service provider. This final risk value was determined verbally as “the highest”.

Insufficient skills causing the capacity shortage

There is a high uncertainty in the evaluation of capacity shortage, since it could not only jeopardize the laboratory but the whole organisation. If the critical projects could not be measured, it might cause production to stop and lead to a loss in profit. This value was set up by brainstorming verbally as “high” and assigned according to an internal risk value definition.

Loss of critical skills and the potential for innovation in the future

There is as well no exact way to evaluate the potential for the future innovation and therefore the value was set up verbally as “medium-high”.

Frequent fluctuation of the workers

This risk is partially connected with the first one – loss of know-how, since with every worker who leaves, the know-how goes with them. The fluctuation tends to be higher with external service providers. However, the laboratory has recorded a fluctuation of approximately 2 workers per year so far. This trend might change as a result of changes in internal conditions and environmental changes.

Loss of competitive advantage

This risk is also connected with the company's know-how. If this activity was performed internally, it could lead to a unique working environment and competitive advantage.

However, as the external provider creates its advantage, the organisation loses its own. The impact of this risk was assigned verbally as “high”.

Insufficient opportunities to motivate the workers

It's an overall outsourcing problem, that the organisations do not have that many opportunities to motivate the external workers. The possible impact of this risk was evaluated as “high”.

Cost increase of the external service provider

If there is only one supplier, it is to be expected that, it uses its competitive advantage and increases the costs. The impact is expected to be “medium”.

Tensed working relationships

The internal and external workers have different working conditions, leading to different performance levels and a dedication to strive for high quality output in their work. The impact of this risk was assigned as “medium”.

Increasing administration costs caused by legal conditions

The internal and external environment is continuously changing. However it can be monitored and partially predicted. The impact was assigned as “medium” since it might also cause the situation of not being possible to outsource.

Change of internal conditions

There are some changes in the internal organisation environment, which might be caused by the trade union, or other entities and this impact was in this case assigned as “low”.

The following table (Table 12 – Probability Levels) summarises the verbally assigned probability levels and suggests their possible percentage value, according to an internal chart, based on its rank and score. Low probability means less than 25%, middle means more than 25%, high is over 50% and really high is over 90%. To determine the exact percentage, the differences in the score were considered. Those risks, with a score close to each other vary only about 5%, those, whose score lays further, vary about 10% and more.

Table 12 - Probability Levels

Risk	Order	Score	Verbal probability	Probability in %
Loss of Know-How	11	108	Really high	90
Change of the service provider	10	98	High	70
Insufficient skills causing the capacity shortage	9	96	High	65
Loss of critical skills and the potential for innovation in the future	8	94	High	60
Frequent fluctuation of the workers	7	92	High	55
Loss of competitive advantage	6	82	Medium	45
Insufficient opportunities to motivate the workers	5	70	Medium	35
Costs increase of the external service provider	4	69	Medium	33
Tensed working relationships	3	58	Medium	30
Increasing administration costs caused by the legal conditions	2	51	Low	20
Change of internal conditions	1	40	Low	15

Source: Own processing based on the internal documentation

The following table shows the risks, their probability, impact and risk value, computed according to the equation, p.44, chapter 3.4 - Risks Quantification.

$$VR = P \times I \quad (5)$$

Table 13 - Risk Value Computation

Risk	Prob. in %	Impact	Risk Value (VR)
Loss of Know-How	90	\$C 3 300 000,00	\$C 2 970 000,00
Change of the service provider	70	\$C 6 600 000,00	\$C 4 620 000,00
Insufficient skills causing the capacity shortage	65	\$C 3 300 000,00	\$C 2 145 000,00
Loss of critical skills and the potential for innovation in the future	60	\$C 1 300 000,00	\$C 780 000,00
Frequent fluctuation of the workers	55	\$C 660 000,00	\$C 363 000,00
Loss of competitive advantage	50	\$C 3 300 000,00	\$C 1 485 000,00
Insufficient opportunities to motivate the workers	45	\$C 3 300 000,00	\$C 1 155 000,00
Costs increase of the external service provider	38	\$C 660 000,00	\$C 217 800,00
Tensed working relationships	30	\$C 660 000,00	\$C 198 000,00
Increasing administration costs caused by the legal conditions	20	\$C 660 000,00	\$C 132 000,00
Change of internal conditions	15	\$C 65 000,00	\$C 9 750,00

Source: Own processing based on the internal documentation

However, some risks are similar and therefore the author suggests simplifying the risks to:

- loss of know-how + loss of critical skills and the potential for innovation in the future + loss of competitive advantage,
- change of the service provider,
- insufficient skills causing capacity shortage + insufficient opportunities to motivate the workers,
- frequent fluctuation of the workers + tensed working relationships,
- increase in the cost of the external service provider,
- increasing administration costs caused by the legal conditions + change of internal conditions.

Based on this simplification, the following table (Table 14) shows the final risk value of outsourcing the duties of a test driver.

Table 14 - Risk Value of Outsourcing

Risks	Value
Loss of know-how + loss of critical skills and the potential for innovation in the future + loss of competitive advantage	\$C 1 745 000,00
Change of the service provider	\$C 4 620 000,00
Insufficient skills causing the capacity shortage + insufficient opportunities to motivate the workers	\$C 1 650 000,00
Frequent fluctuation of the workers + tensed working relationships	\$C 280 500,00
Costs increase of the external service provider	\$C 217 800,00
Increasing administration costs caused by the legal conditions + change of internal conditions	\$C 70 875,00
Total risk value of outsourcing = VR	\$C 8 584 175,00

Source: Own processing based on the internal documentation

The table suggests the total risk value connected with the outsourcing process to be in the region of 8,6 million \$C, which is a significant amount and should have been considered before outsourcing this activity.

4.5 Value Chain Analysis

The automotive manufacturer sees the core of the brand as its tradition, connected with innovative ideas, its principles, and the “human touch” of its products. Therefore, research and development must function as an integral part of its value chain as an additional part of the classical value chain model. The following figure (Figure 6), hereby suggested by the author of the thesis, depicts the value chain of the organisation.

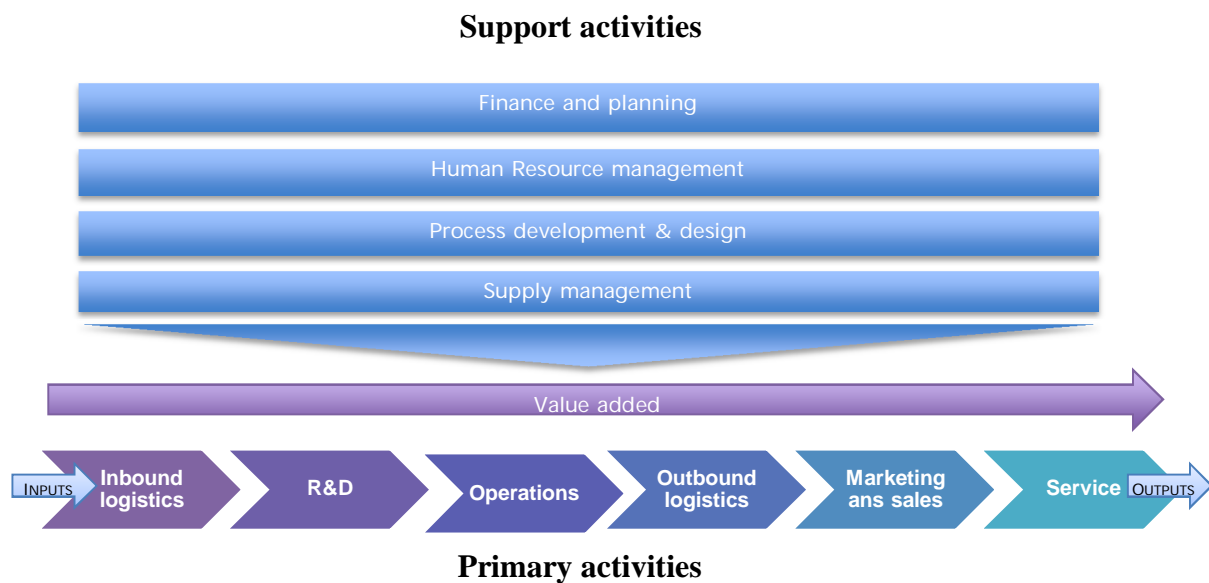


Figure 6 - Organisation's Value Chain

Source: Own processing based on McIvor (2005)

The laboratory belongs to research and development in the organisational structure. However, in the value chain it can be assigned to the company's operations as a significant part of the product generation process.

The main activities of the laboratory are: test operation (operator), perform the test (driver), technology administration, process administration, review and implementation of legislation, development of the procedures, cooperation with other departments, quality control, cooperation with the certification authorities, and professional consultation.

The laboratory holds dear the following values:

- precision,
- reliability,
- security,
- test evaluation precision,
- high quality of legislative research.

Accompanied by the administrative activities:

- administration of the technology,
- service provision – a wide ranges of services, reliability, security, and guarantee.

4.6 Analysis of the Strategic Sourcing Options

The author of the thesis analyses the strategic options of the test driver's roles, based on the scope of McIvor (2005), described in the chapter 1.7 - Outsourcing Evaluation.

Supply market risk

The following chart describes the relationship between the number of buyers and suppliers and the risk in the test drivers field in one country and suggests there is a **high supply market risk**, since there is only one buyer and one supplier (the blue field). Eventually, this chart could possibly evolve to a situation of one supplier and a few buyers or with really low probability also to a situation of a few suppliers and one buyer, slightly lowering the risk in both cases.

There is a high supply market risk (see the Figure 7) which is not expected to change in the close future, since the automotive testing environment is significantly overloaded.

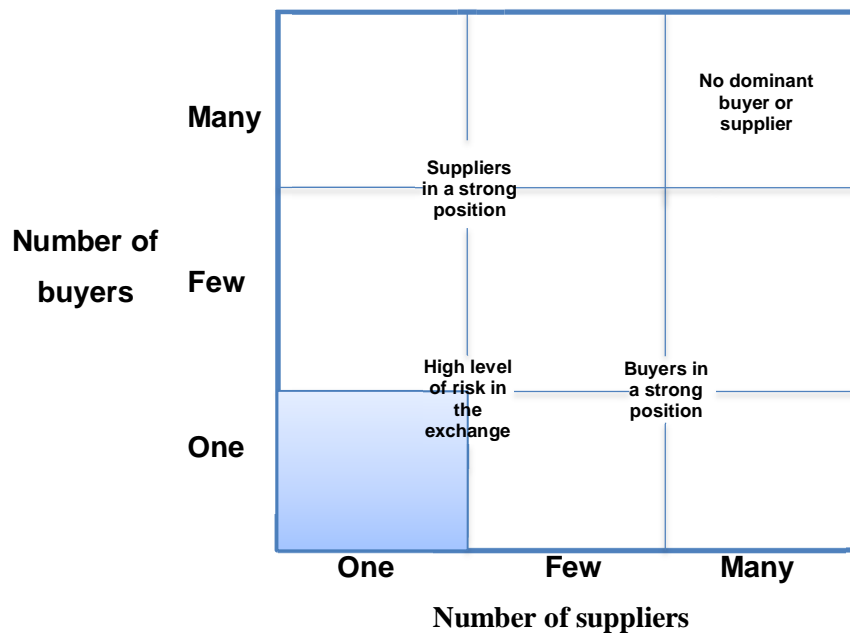


Figure 7 - Level of Risk in the Exchange

Source: Own processing based on McIvor (2005, p. 108)

Performance disparity and activity replicability

There is a performance disparity – as suggested in chapter 4.3, the job performance of the external drivers is low compared to the external resources costs which are somewhat high.

The activity of a test driver is difficult to replicate. The replication itself is however not crucial for the activity. It might have been more beneficial, if the activity could be easily replicable, since there would be more suppliers, etc. The most important thing is the driver's experience with the different cycles and vehicle configurations.

Technology and environment

The testing technology is relatively stable, the laboratory has the latest equipment, which as mentioned already, is in the possession of the organisation. The external environment has changed recently, and it is to be expected that there will be more changes in the legislation regarding outsourcing and automotive testing. However, the automotive testing changes should not affect the skills or abilities of the drivers directly and unlike the outsourcing legislation they should be easily manageable.

Behavioural Considerations

The behavioural factors are rather manageable with slight barriers. Every change in the internal remuneration impacts the external provider. This behaviour might tend to affect the organisation more in the near future.

The success of all business strategies heavily depends on the attitudes and commitment of the workforce. Organisation structure changes often negatively impact the employees. The employees are often seen just as a number which can be reduced in order to downsize the organisation's HR. However, the employees are highly beneficial for the organisation, since they are a valuable resource and asset. Since there is not a positive financial difference between the external and internal drivers, it can therefore be reasonable to adopt the drivers into the organisation's own valuable resource in order to ensure their loyalty in the future.

The outsourcing strategy should be a part of the overall business strategy, as mentioned in the chapter 1.1 - Outsourcing, and since the brand emphasises its working environment as one of its advantages, it might be beneficial to restructure the outsourcing of the external drivers.

The strategic sourcing options implications

The Figure 8 illustrates the ideal conditions for decision about the strategic sourcing options. The test drivers activity will be largely in the upper-part of the chart and thus quadrant two and quadrant one denotes the activity is rather important. If the disparity is not significant, it is possible to invest internal resources to perform the activity. The supplier on the other hand does not show superior performance. In the last few years, the former internal and external experienced drivers have significantly honed their skills and have become a part of the RDE⁸-team. If the organisation is in a strong position to sustain or create a performance advantage over time, it is appropriate to perform the activity internally. From a strategic point of view, outsourcing in this particular case is not going to bring about any advantages,

⁸ RDE = Real Driving Emission

since the other laboratory resources are still managed by the organisation, this is obvious from the indirect costs analysis (see Table 4 - Indirect Outsourcing Costs per Year Internally), there are administration and other costs connected with this outsourcing case as well.

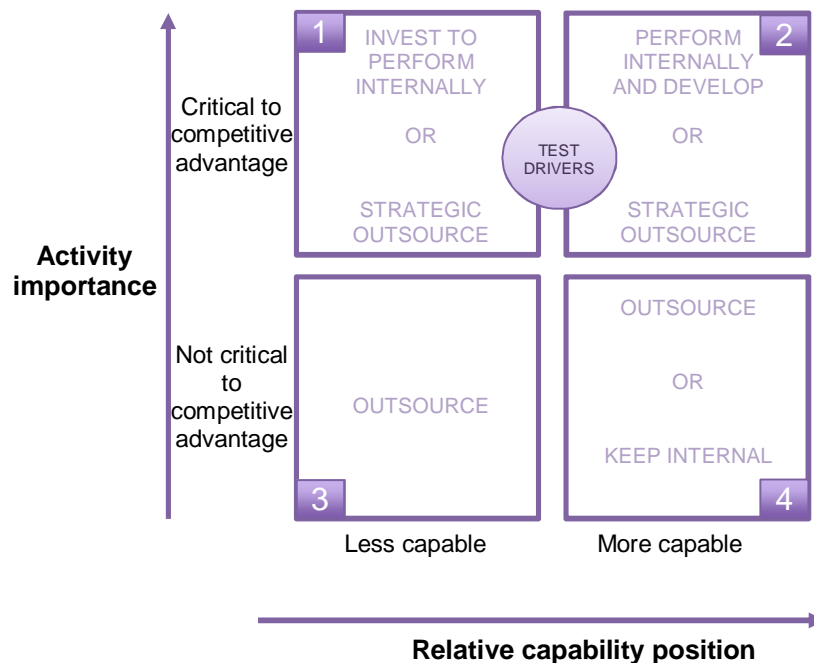


Figure 8 - Strategic Sourcing Options

Source: Own Processing based on McIvor (2010, p. 207)

4.7 Relationship Strategy and Evaluation

In each outsourcing strategy it is necessary to establish clear objectives on what the organisation intends to achieve, as described in the chapter 1.6 - Process Approach to Outsourcing Decisions. The objective set by the organisation was to reduce the costs and focus on its core activities. As the financial analysis (see page 49) suggests, the objective of reducing the costs by outsourcing have not been met. The focus on the core activities is debatable. The following figure depicts the position of the test driver's activity in a chart of relationship strategies and shows the connection between the activity's importance and the level of the supply market risk.

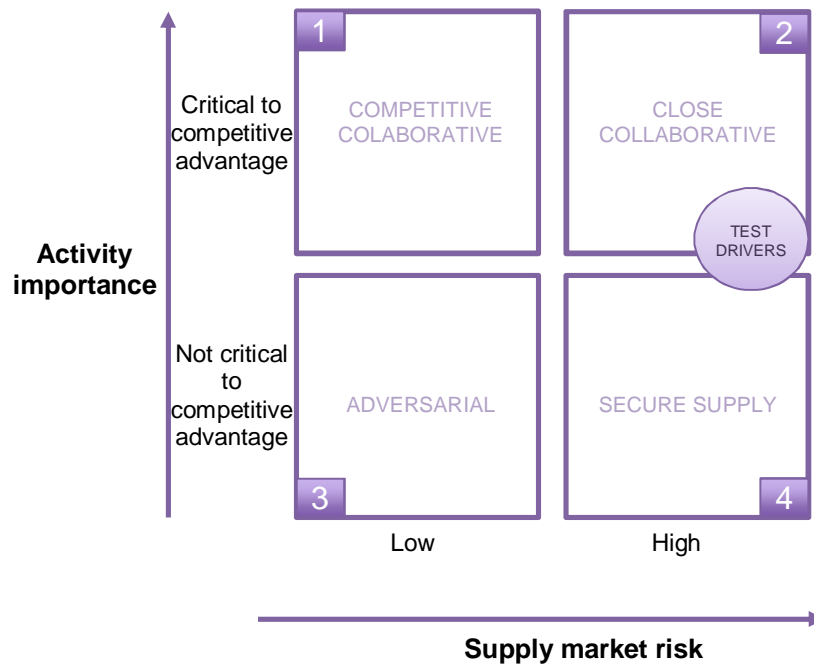


Figure 9 - Relationship Strategies

Source: Own processing based on McIvor (2005, p. 226)

The research in the laboratory suggests the activity to be rather more critical to competitive advantage than non-critical. As mentioned in Figure 7 - Level of Risk in the Exchange, there is a high supply market risk. This suggests choosing the close collaborative relationship strategy. If implemented correctly, this type of collaboration can lead to a mutually advantageous relationship of the organisation and the supplier and deliver benefits which are unavailable to the competitors. The organisation should implement joint problem solving, information exchange and share the benefits and risks.

4.8 Possible Further Development

The internal conditions have changed this year and levels of pay have increased by approximately about 14%. In order to partially equalize the difference between the external and internal employees, it is to be expected that the external costs will increase as well. If the rates of pay for external workers remain the same, it is possible, that the fluctuation will be even higher.

Since the external service provider has no working union, the change will probably not be as significant as for the internal. The author of the thesis suggests considering a 5% raise of the external direct costs. The following table represents the financial analysis, including this increase.

Table 15 - Direct and Indirect Outsourcing Costs after 5% Wage Increase

Type of costs		10 workers per year
Internal Costs	Direct	\$C 384 000,00
	Indirect	\$C 559 200,00
	Total	\$C 943 200,00
External Costs	Direct	\$C 895 158,43
	Tax	\$C 187 983,27
	Indirect	\$C 86 056,00
	Qualification	\$C 328 649,00
	Total	\$C 1 497 846,70
Difference		-\$C 554 646,70

Source: Own processing based on the internal documentation

Since the outsourcing costs are significantly high and there are many risks connected with them in the testing laboratory, there should be, for example a better cooperation plan in order to achieve better job performance or the company should consider insourcing the activity back in-house, since the level of the potential risks is significantly high.

The cooperation should be evaluated for example upon the following criteria:

- the technical expertise of the supplier,
- the scope of resources,
- the testing capability,
- commitment to quality,
- commitment to continuous improvement in product and process,
- reserve capacity or the ability to respond to an unexpected demand,
- financial stability and staying power,
- the social responsibility,
- cooperation between the buyer and supplier and others.

The insourcing process should include the following stages:

- **Planning** – the company should conduct an internal audit and determine the scope of insourcing. Then it should map the current costs (Table 9 - Direct and Indirect Costs Comparison Including the Job Performance) and prepare a timetable. The company could either focus on recruiting the candidates already employed in the process or recruit new ones, then it should collect resources and notify the vendor.
- **Implementation** – this phase includes the training of the new personnel, but in this particular case, it would be appropriate to take on the external personnel and finally take back the data from the external service provider.
- **Control** – as with every other process, insourcing needs to be ultimately controlled to the very end. The organization should take care of people, follow up the operation costs and finally create an evaluation and learn from this process.

Since there are some legal hurdles, it is necessary to create an insourcing contract with the external service provider, who will most likely be entitled to compensation. The level of this compensation could be offered by the organisation to the level of the difference between the internal and external activity costs of 1 year. A possible solution will be to take back in house the activity of the test driver and leave the external service provider to perform the supportive tasks, which are necessary in day-to-day operations.

Besides from the above mentioned, the organisation should seriously consider employing:

- an outsourcing manager,
- an outsourcing controller,
- or an external outsourcing consultant.

They should then focus on analysing the activities that have outsourcing potential, designing their implementation plan, evaluating them and controlling already outsourced activities in order to achieve the competitive advantage which is the main goal of outsourcing.

Conclusion

The goal of this thesis was to characterise outsourcing and the theories that influence its evaluation and to explain why companies tend to outsource, and in turn suggest how to better evaluate outsourcing. This was achieved by examining the advantageousness of an actual outsourcing process used by a chosen organisation, using qualitative and quantitative research methods.

The meaning of outsourcing was defined as a business procedure of transferring one or more activities to an external organisation, whereby the responsibility for resources and performance then lies with the service provider. This distinguishes outsourcing from other types of cooperation. The thesis explained the differences in transaction cost economics, the resource-based view of the firm, the industry view and the relational view which all in a diverse range of ways strive to achieve a competitive advantage which in essence is the main goal of outsourcing.

The thesis described globalisation and trade liberalisation. Moreover, it described the development of information and communication technologies, and more demanding consumer behaviour as the main outsourcing drivers that are prompting organisations to implement outsourcing. It then went on to state the specific reasons companies have for outsourcing. These reasons fell into two categories - strategic and economic. Company decisions to outsource tended to be based on economic reasons as companies primarily sought to reduce their costs. However, the author pointed out that long-term strategic decisions are a more effective way to gain significant benefits from outsourcing.

The thesis then went on to describe the processes suitable for outsourcing, but mentioned that suitability could not be defined unequivocally, which makes outsourcing decisions highly challenging. Some theories suggest outsourcing “non-core” activities or “non-value-adding” activities, but also activities in which the external service provider offers better performance or capability, possibly also regardless of the costs involved and even though these activities are important in an organisation's value chain. Outsourcing is a business process just like every other process and therefore it should be planned, realised, controlled, and continuously improved, as is described in international norms such as ISO 9001 and other TQM standards in outsourcing processes.

The author briefly described the framework for outsourcing evaluation based on the work of Ronan McIvor (2005) who had summarized different theories connected with outsourcing in one publication. In contrast to this, other authors mention outsourcing only partially and fragmentally, which made the literature review slightly demanding. In short, an organisation should always determine its key activities and analyse their importance. Furthermore, the capability to achieve a superior level of performance internally should be considered. After that there should be an analysis of the strategic sourcing options and relationship strategy development. The need to evaluate and then establish an appropriate relationship with the external service providers and the company's management is important as such relationships can be a unique way of achieving a competitive advantage.

In the second chapter the author described the fundamentals of financial analysis in order to evaluate the economic side of outsourcing. The author laid emphasis on the project financial analysis and risk management which to a lesser extent also relates to the strategic position of outsourcing. The author signified the necessity to include the direct, indirect, and other costs in the outsourcing financial analysis that are commonly forgotten in current day praxis.

The third chapter moved on to the practical view of outsourcing evaluation. This was introduced by an enumeration of the advantages and disadvantages of outsourcing as was mentioned in the reviewed literature. This was followed by a list of common mistakes made in the outsourcing process. Almost all the reviewed literature signifies that companies globally tend to outsource ineffectively despite the fact that outsourcing is by no means a new trend. The most interesting outsourcing problem is that organisations which try to reduce their costs by outsourcing do not necessarily decrease them, but in many cases they increase the costs. The following part defined the specific risks connected with outsourcing and subsequently suggested the possibility of their evaluation. There are many ways of how to determine the risks, but risk management experts all agree on how to compute the risk value. Following on from the aforementioned, the author then suggested how to evaluate one of the direct costs and as a result job performance was found to be a key differentiator for the comparison of internal and external activity costs.

In the fourth chapter, the author applied the mentioned theories in a case study that was performed using qualitative and quantitative research. The business unit was described as a testing laboratory for the exhaust gas analysis of a car manufacturer that outsources the role

of test drivers. Financial analysis of the direct and indirect outsourcing costs showed that the external costs for test drivers were higher than when performed internally at a level of 230 901 \$C. Furthermore, after implementing the job performance analysis, this difference had risen to 503 068 \$C. The risk analysis mainly adopted the expert method, however, expert opinions differed which helped to smooth out any subjective points of view. Since some of the risks correlated to each other, the author created respective groups to determine the final risk value of outsourcing which reached a level of 8 584 175 \$C. The value chain analysis suggested the activity to be rather important and the subsequent analysis of the strategic sourcing options showed a high supply market risk, performance disparity, relevant environmental influences, and manageable behavioural factors with slight barriers. These were all combined into a final graphical illustrative evaluation, which clearly indicated the activity was critical to competitive advantage as it correlated with internal performance suitability, rather than to strategic outsourcing.

The relationship strategy evaluation signified the necessity to implement a close collaborative relationship. Finally, the author described the possible further development of the organisation. Firstly, she mentioned taking an increase in internal levels of pay into consideration in the financial analysis and suggested its implications, namely, its cause of a bigger difference between internal and external costs. The author suggested implementing a better cooperation plan to boost job performance or to consider insourcing the activity back in-house. Then, there was a list of example 'relationship evaluation criteria' and an insourcing process proposal that signifies the necessity to take into account the associated legal boundaries. At the end, there was a suggestion to employ a person who would be responsible for the analysis of activities with the outsourcing potential. The person would be responsible for the design of an implementation plan and its evaluation, and would also control activities already outsourced in order to achieve the goal of outsourcing that has been mentioned many times already – the competitive advantage.

As the author expected, there was a significant difference between the internal and external activity costs with high level of risks. Simultaneously, with the strategic options inclining more to internal performance than to outsourcing. The thesis, specifically the case study, have confirmed the information from the literature and thus have concluded that organisations tend to outsource ineffectively. In this case, the outsourcing process has not reached its advantageousness potential.

List of Literature

References⁹

- CAMBRIDGE. 2018. *Cambridge English Dictionary*: investment [online]. UK: Cambridge University Press. [cit. 2018-05-01]. Available from:
<https://dictionary.cambridge.org/dictionary/english/investment>
- DOLEŽAL, Jan, Pavel MÁCHAL and Branislav LACKO. 2012. *Projektový management podle IPMA*. 2nd edition. Prague: GRADA Publishing. ISBN 978-80-247-4275-5.
- DVOŘÁČEK, Jiří and Ladislav TYLL. 2010. *Outsourcing a offshoring podnikatelských činností*. Prague: C.H. Beck. ISBN 978-80-7400-010-2.
- DYER, Jeffrey H. and Harbir SINGH. 1998. *The Relational view: cooperative strategy and sources of inter-organisational competitive advantage*. *Academy of Management Review*. No. 23, p. 660-679.
- FRIEDLOB, George T. and Lydia L. F. SCHLEIFER. 2003. *Essentials of financial analysis*. New Jersey: John Wiley. ISBN 0-471-22830-3.
- IAOP. 2014. *Outsourcing Professional Body of Knowledge*. 10th edition. Zaltbommel: Van Haren Publishing. ISBN 978-94-018-0000-6.
- ISO 9001:2015. 2015. *Quality management systems – Requirements*. 5th edition. The International Organization for Standardization.
- ISO 31000:2018. 2018. *Risk management — Guidelines*. 2nd edition. The International Organization for Standardization.
- KNÁPKOVÁ, Adriana, Drahomíra PAVELKOVÁ and Karel ŠTEKER. 2013. *Finanční analýza: komplexní průvodce s příklady*. 2nd edition. Prague: GRADA Publishing. ISBN 978-80-247-4456-8.

⁹ The Czech literature was independently translated into English by the author of the thesis.

- KORECKÝ, Michal and Václav TRKOVSKÝ. 2011. *Management rizik projektů: se zaměřením na projekty v průmyslových podnicích*. Prague: GRADA Publishing. ISBN 978-80-247-3221-3.
- MADHOK, Anoop. 2002. *Reassessing the fundamentals and beyond: Ronald Coase, the transaction cost and resource-based theories of the firm and the institutional structure of production*. Strategic Management Journal 23: 535-550.
- MC IVOR, Ronan. 2005. *The Outsourcing Process: Strategies for Evaluation and Management*. Cambridge University Press. ISBN 978-11-394-4458-3.
- MICHAEL E. Gordon and Vernon D. MILLER. 2012. *Conversations about job performance a communication perspective on the appraisal process*. New York: Business Expert Press. ISBN 9781606490754.
- NISHIGUCHI, Toshihiro. 1994. *Strategic Industrial Sourcing*. New York: Oxford University Press.
- PORTER, Michael E. 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.
- QUINN, James B. and Frederick G. HILMER. 1994. *Strategic outsourcing*. Sloan Management Review. Vol. 35, No. 4, p. 43-55.
- REVE, Torger. 1990. *The firm as a nexus of internal and external contracts*. In: *The Firm as a Nexus of Treaties*, Aoki, M. (ed.). London: Sage.
- RŮČKOVÁ, Petra. 2015. *Finanční analýza: metody, ukazatele, využití v praxi*. 5th edition. Prague: GRADA Publishing. ISBN 978-80-247-5534-2.
- SLAVÍK, Jakub. 2013. *Finanční průvodce nefinančního manažera: jak se rychle zorientovat v podnikových a projektových financích*. Prague: GRADA Publishing. ISBN 978-80-247-4593-0.
- SMEJKAL, Vladimír and Karel RAIS. 2010. *Řízení rizik ve firmách a jiných organizacích*. 3rd edition. Prague: GRADA Publishing. ISBN 978-80-247-3051-6.
- SVOZILOVÁ, Alena. 2011. *Projektový management: systémový přístup k řízení projektů*. 3rd edition. Prague: GRADA Publishing. ISBN 978-80-247-3611-2.
- TEECE, David J., Gary PISANO and Amy SHUEN. 1997. *Dynamic capabilities and strategic management*. Strategic Management journal. Vol. 18, No. 7, p. 509-533.

TRIANANTAPHYLLOU, Evangelos. 2013. *Multi-criteria decision making methods: a comparative study*. New York: Springer. ISBN 978-14-757-3157-6.

WILLIAMSON, Oliver E. 1975. *Markets and hierarchies: analysis and antitrust implications*. New York: The Free Press. ISBN 0-02-934780-7.

Bibliographie

HARBHAJAN, Kehal. 2006. *Outsourcing and Offshoring in the 21st Century: A Socio-Economic Perspective*. Idea Group Inc (IGI). ISBN 978-15-914-0877-2.

MORRONI, Mario. 2009. *Corporate Governance, Organization and the Firm: Co-operation and Outsourcing in the Global Economy: New Perspectives on the Modern Corporation Series*. Edward Elgar Publishing. ISBN 978-18-484-4612-0.

NEEDLES, Belverd E., Marian POWERS and Susan V. CROSSON. 2013. *Financial and Managerial Accounting*. 10th edition. Mason: Cengage Learning. ISBN 978-12-856-8747-6.

Potkány, Marek. (2008). *PERSONNEL OUTSOURCING PROCESSES*. *E+M Ekonomie a Management* [online]. p. 53-62. [cit. 2018-05-01]. Retrieved from: <https://search.proquest.com/docview/195460891?accountid=17116>

SMEJKAL, Vladimír and Karel RAIS. 2010. *Řízení rizik ve firmách a jiných organizacích*. 3rd edition. Prague: Grada. ISBN 978-80-247-3051-6.

TICHÝ, Milík. 2009. *Ovládání rizika: analýza a management*. Prague: C.H. Beck, Beckova edice ekonomie. ISBN 80-7179-415-5.

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Appendix A Internal Labour Costs

Working group	Wage per hour
University educated worker	69,40 \$C
Technician (RD) worker	56,14 \$C
Average	68,07 \$C

Appendix B Risk Probability Evaluation

Risk / Respondent	A	B	C	D	E	F	G	H	I	J	K	L	M	Total Score	Order
Frequent fluctuation of the workers / častá fluktuace zaměstnanců	4	8	9	10	4	10	8	10	11	4	2	11	1	92	7.
Costs increase of the external service provider / nárůst nákladů externím dodavatelem	11	11	5	8	2	3	6	2	1	3	5	6	6	69	4.
Change of internal conditions / změna interních podmínek	1	10	2	6	3	1	1	1	2	1	6	1	5	40	1.
Change of the service provider / změna poskytovatele	9	1	1	11	1	9	7	11	10	7	10	10	11	98	10.
Increasing administration costs caused by the legal conditions / zvýšené administrativní náklady způsobené změnou legislativy	3	4	8	7	7	2	2	3	3	2	4	4	2	51	2.
Insufficient skills causing the capacity shortage / nedostatečné zkušenosti vedoucí ke snížení kapacity	8	5	6	9	11	6	3	8	6	8	8	9	9	96	9.
Loss of Know-How / ztráta know-how	10	7	11	1	9	7	10	9	9	9	11	7	8	108	11.
Loss of competitive advantage / ztráta konkurenční výhody	7	6	7	2	8	8	9	4	4	11	9	3	4	82	6.
Loss of critical skills and the potential for innovation in the future / ztráta rozhodujících dovedností a inovačního potenciálu v budoucnu	5	9	10	3	10	11	11	7	7	10	3	5	3	94	8.
Tensed working relationships / napjaté vztahy mezi pracovníky	2	2	4	5	5	4	4	5	5	6	7	2	7	58	3.
Insufficient opportunities to motivate the workers / nedostatek příležitostí k motivaci zaměstnanců	6	3	3	4	6	5	5	6	8	5	1	8	10	70	5.
Control lane - total	66	66	66	66	66	66	66	66	66	66	66	66	66	858	