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Research Report

Identification and measurement of intangibles in a knowledge economy: The special relevance of human capital

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EIKV-Schriftenreihe zum
Wissens- und Wertemanagement

Identification and Measurement of Intangibles in a
Knowledge Economy
The special relevance of human capital

Nadine Allar

IMPRESSUM

EIKV-Schriftenreihe zum Wissens- und Wertemanagement

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Nadine Allar

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List of Abbreviations

ADEM	Agence pour le développement de l'emploi
CV	Curriculum Vitae
EC	European Commission
EU	European Union
HC	Human Capital
HCM	Human Capital Management
IAS	International Accounting Standards
IC	Intellectual Capital
IFRS	International Financial Reporting Standards
IP	Intellectual Property
PoV	Point of View
PPE	Plant, Property, and Equipment
RC	Relational Capital
RS	Recruitment Services
SC	Structural Capital
USP	Unique Selling Proposition

1. Motivation for the topic

Prior to the work on this paper I was involved in several constructive discussions on intangibles and their importance for companies with participants of various professional backgrounds. The first reaction when I explained my aim to provide a base for the measurement of factors like knowledge and motivation has often been: *‘That is impossible.’* In the further course of discussions diverse questions arose, as for example *‘Why should we try to measure these values?’*, *‘How could companies show these values in their balance sheets?’*, as well as *‘Is it ethical to treat human beings simply like assets?’* to name only a few of them.

1.1 Research question

Especially in knowledge economies, intangibles constitute a major factor of value for individuals and organizations. However, it is not easy to detect the economic value of several intangible elements. While the importance of one part of intangibles has been realized, another part is often left aside. Reasons might be a lack of focus on these intangibles and difficulties when it comes to valuation and measurement. Analysing the balance sheets of companies, intellectual properties like for example patents are reported. So the question is whether to report intellectual capital as well. Before organizations take on this objection, there are several further obstacles, they face. The identification of intangibles as assets, the determination of a valuation method as well as the awareness of its potential and benefits remain challenges. Discussions about the topic should contain several perspectives: the economic perspective, the relation to international accounting and corresponding regulations as well as the question on taxation. The present paper will focus mainly on the economic perspective. Several aspects have been identified to focus on:

- Importance of intangibles for companies
- Most important assets, employees provide to their companies
- Awareness of companies and recruiters about these assets
- Demand for intangibles
- Methods for valuation of intangibles

1.2 Scope of the work & Objective

An organization's financial position is often used as a key indicator for the organization's success. As stakeholders depend on the figures, the financial statement/reporting is even a mandatory requirement. Beyond that it needs to be done in an overall relevant, understandable, reliable, comparable, complete and correct way. The financial statement provides information about the financial situation and hence the financial strengths and weaknesses, the liquidity and solvency of an organization. Furthermore, it implicates conclusions about the need for additional financing and the likelihood to obtain these financings. However, it can also be used to assess which investments should be made in order to keep the business going and to develop it further e.g. invention and/or purchase of new technologies, additional resources etc.¹

Yet when analysing the financial statement of an organization and in this context also looking at the assets of an organization, the term asset is often misinterpreted due to the fact that the term is commonly used only within the financial context. As a result a huge part of the intangibles is often neglected. How could companies decide to reduce costs by economizing staff if they have no instrument for valuation? And how can companies plan investments if they are not aware about all of their capital assets?

The purpose of the present paper is to establish a frame for measurement of intangibles in a knowledge economy. It will serve as a basis for future research to operationalize the construct of intellectual capital. In terms of construct validity, the present paper provides the theoretical framework for what we are trying to measure - the economic value of intangibles. Furthermore, a starting point for an empirical framework will be developed. The connections and correlations within this framework ought to be specified in a further research study.

1.3 Structure & Methodology

This paper consists of eight chapters. After the introduction of the topic, the following chapter will provide an overview on the construct of intangibles. For this matter the introduced international accounting perspective focuses mainly on international financial reporting standards (IFRS) due to the international scope of the paper. Within the discourse mainly IAS 38 will be looked at. A third chapter deals with the specifics of the

¹ Cf. N.a. (2012): Classification of assets. Joint World Bank and IFRS Foundation 'train the trainers' workshop hosted by ECCB, 30 April to 4 May 2012, IFRS Foundation, London.

knowledge economy, before presenting the subject Human Capital Management. To put the elements into the right context, some own definitions will be set up. In the following course of the paper, questions about measuring and safeguarding intangibles will be addressed. In order to consolidate the theoretical framework with empirical data, the present paper contains two types of research: quantitative research as well as qualified research. For the quantitative research, a survey amongst professionals within the greater region of Luxembourg, Rhineland-Palatinate, Saarland, France and Belgium has been conducted. The audience mainly constitutes of knowledge workers, considering the specifics of the field. Due to the scope of the survey, the questionnaire has been set up in two languages: in English and in German. The results of the survey will be presented within the complete progress of the paper. Questions are build on the main research topics. Before a conclusion of the paper will be drawn, the results of a second empirical analysis will be presented in chapter seven. This empirical element is based on an interview, which has been conducted with an expert in the field. The interview had the aim to validate the quantitatively compiled date with qualitative research.

For the survey it was planned to collect at least 100 completely answered questionnaires, 150 to 200 being better for the accuracy of the results. Consequences of having a smaller sample would include improper solutions and convergence failures. For a majority of the questions, participants have been asked to indicate the extent of their agreement on a four-point Likert scale, a bipolar scaling method to measure positive or negative response to a statement. Therefore, an even-point scale has been used. To avoid a neutral value, participants were forced to take a choice either for one direction or the other. Distribution has been made within the own network of the author, people within this network have spread the questionnaire as well within their networks and a circulation in social media such as LinkedIn took place. The survey has been conducted completely anonymous. However, in order to analyse the responses statistically, some questions have been addressed to the background of the participants. The subsequent figure shall provide an overview about the audience.

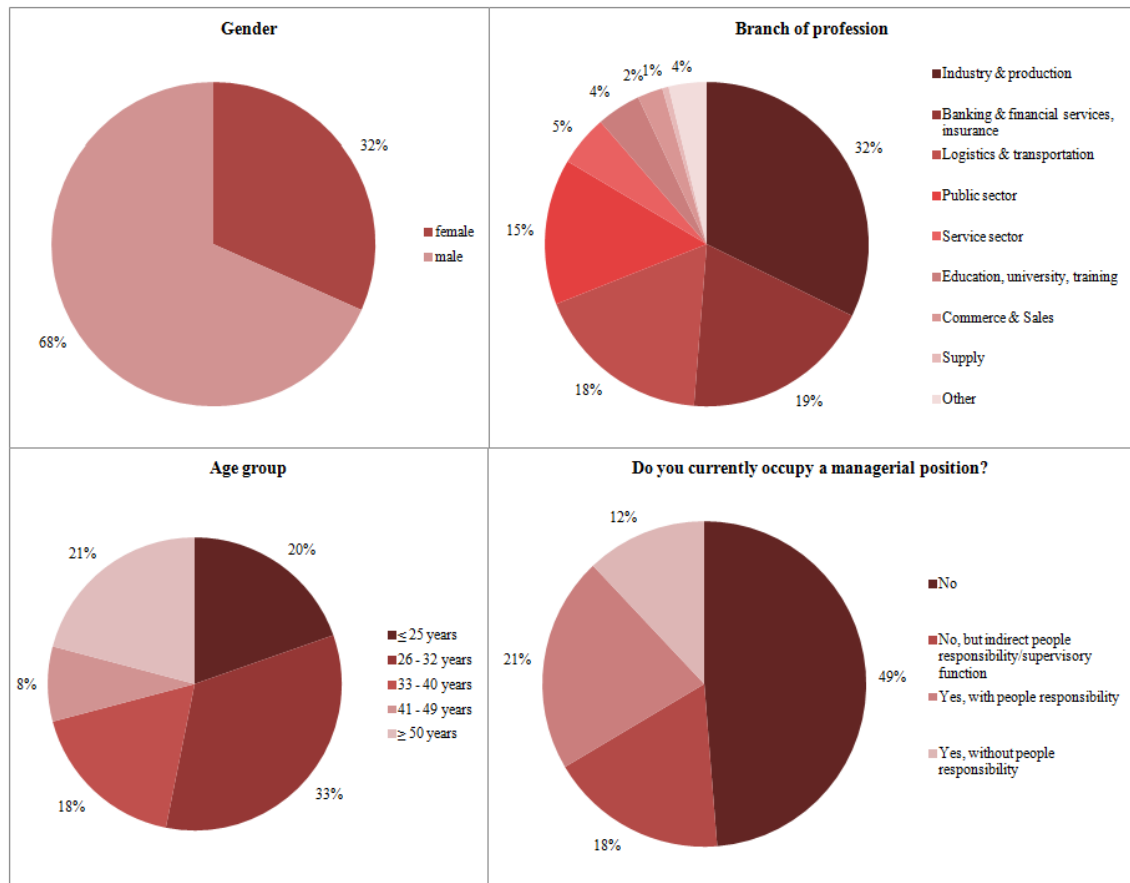


Figure 1: Distribution of participants

In total 188 people started with the survey, 158 of them completed the survey until the end.

2. Intangible assets – Just a hypothetical construct?

According to IFRS classification financial effects which result from transactions and/or events are grouped into different classes and are sub-classified by their nature or function etc. within the financial statement of an organization.²

The assets, appearing on the asset side of the balance sheet, are one example for financial effects which have a major impact on the financial position and hence on the overall performance of an organization.

An important indicator for the liquidity and solvency of an organization is its cash flow and the parameters leading to cash flow. Some parameters resulting immediately in liquid assets are obvious, such as accounts receivable. Others seem to be less apparent. In some

² Cf. N.a. (2012): Classification of assets.

cases it is a combination of resources, which is used amongst others for production or promotion purposes of goods and/or services, that leads to cash flows. A number of different assets needs to be closely examined.³

In order to underline the key elements, one has to look at when talking about assets, the following definition can give a first idea: ‘An asset is a resource with economic value that an individual, corporation or country owns or controls with the expectation that it will provide future benefit. Assets are reported on a company's balance sheet, and they are bought or created to increase the value of a firm or benefit the firm's operations. An asset can be thought of as something that in the future can generate cash flow, reduce expenses, improve sales, regardless of whether it's a company's manufacturing equipment or a patent on a particular technology.’⁴

Some contents of the definition have already been mentioned. Further parts which should be kept in mind for the following studies on the subject are: ‘*economic value, owns or controls, future benefit, increase the value, generate cash flow, reduce expenses, improve sales.*’

For the analysis of assets tangible assets and intangibles have to be considered. After distinguishing between these two asset groups, this chapter provides the reader with a theoretical background on intangible assets as well as a first introduction to the less obvious intangible assets. Due to the scope of the present paper investment property and financial assets will be left aside.

2.1 Tangible assets

As the term ‘tangible asset’ already adumbrates, these assets implicate a physical existence. The following definition underlines the main characteristics: ‘Cash, equipment, machinery, plant, property anything that has long-term physical existence or is acquired for use in the operations of the business and not for sale to customers. In the balance sheet of the business, such assets are listed under the heading 'Plant and equipment' or 'Plant, property, and equipment.' (PPE) Tangible assets, unlike intangible assets, can be

³ Cf. N.a. (2012): Classification of assets.

⁴ N.a. (n.y.): Assets, URL: <http://www.investopedia.com/terms/a/asset.asp>, accessed on 29th March 2017.

destroyed by fire, hurricane, or other disasters or accidents. However, they can be used as collateral to raise loans, and can be more readily sold to raise cash in emergencies.’⁵

A distinction is made between tangible fixed assets such as machinery, equipment etc. and current assets like for example inventory.⁶ The time frame to look at (long-term vs. short-term) in relation to the possibility to convert the tangible asset into cash, marks the difference between these two categories.

In any case, tangible assets and intangible assets should not be considered separately as there might be mutual functionalities and dependencies. To give a simple example: Company X owns a patent for a special type of product, to commercialize this product they need a machine for production. To enhance the example: Company X does not own the machine but company Y does and so they arrange a licence agreement for company X to use the machine and company Y to provide the machine and to receive a compensation for the lease.

2.2 Background on intangible assets

The literature contains various definitions of the term ‘intangible assets’. A closer look at the individual definitions reveals that they differ depending on their context and specific purpose, e.g. accounting or taxation purposes. As the present paper aims at looking into the subject by a diversified and broad approach, a general definition needs to be found.

Following the assumption that the classification of intangibles is still restricted, we need to conclude at this point that there is no complete definition of intangible assets. Due to its connotation the term ‘asset’ is mostly linked to a financial environment. The definition should be free of associations or specific context.

In order to provide an overview about what currently can be found and what is missing, the definition of intangibles according to IFRS will serve as a basis: ‘An intangible asset is an identifiable non-monetary asset without physical substance. Such an asset is identifiable when it is separable, or when it arises from contractual or other legal rights.’⁷ Furthermore the criteria for assets other than identifiability, namely the ownership and/or

⁵ N.a. (n.y.): What is tangible asset? Definition and meaning. URL:

<http://www.businessdictionary.com/definition/tangible-asset.html>, accessed on 29th March 2017.

⁶ Cf. N.a. (n.y.): Tangible Asset Definition. <http://www.investopedia.com/terms/t/tangibleasset.asp>, accessed on 29th March 2017.

⁷ N.a. (n.y.): IAS 38 - Intangible Assets, URL: <https://www.iasplus.com/en-gb/standards/ias/ias38#link8>, accessed on 29th March 2017.

control by the entity and the expectation of future economic benefits apply as well. Herein lies the difficulty: an (intangible) asset needs to be identifiable. This means its cost and/or value has to be measured with a certain diligence.

Another definition seems to be clearer in this sense: 'Intangible assets are all the elements of a business enterprise that exist in addition to working capital and tangible assets. They are the elements, after working capital and tangible assets, that make the business work and are often the primary contributors to the earning power of the enterprise. Their existence is dependent on the presence, or expectation, of earnings.'⁸

As the above definitions do not contain all the relevant elements, the following one will serve as a basis for further discussions.

Intangibles are assets without physical substance bringing economic value to an individual and/or an organization. They can either be generated internally or purchased from an external source. Intangible assets include patents, licenses, trademarks, software and similar rights as well as intellectual capital (human, structural and relational capital). Due to their high complexity and specificity they are limitedly imitable and transferable. Capitalized by their use in a value-added process, and not necessarily by ownership or property, they can only be measured to some extent. As they constitute an important element for economic decision-making and lead to competitive advantages they need to be recognized in the balance sheet of an organization or individual.⁹

To recapitulate, not all intangibles meet the requirements, specified by international accounting regulations. For taxation purposes, the amortization needs to be determinable. Therefore, the period of time, in which the company receives benefits from the intangible assets, has to be specified.¹⁰ As of the difficulty to classify intangibles under the accounting and/or taxation point of view, the present paper will look at the subject from an economic perspective.

2.3 Classification of intangible assets

⁸ Smith, G., Parr, R. (1994): Valuation of Intellectual Property and Intangible Assets, 2nd Edition, 1994, New York, p. 83.

⁹ Own draft

¹⁰ Cf. Graham, C. (2011): Tax Insights. What are Intangible Assets?, URL: <http://www.hhcpa.com/blogs/income-tax-accountants-cpa/what-are-intangible-assets/>, accessed on 04th May 2017.

When discussing intangibles, some intangibles come to mind quickly. However, others are to be recognized more slowly. Depending on the purpose, the presentation method to classify the intangible assets varies. The following two sub-chapters will provide an overview on the intangible assets which are already commonly identified and measurable as such ('The Known') and the ones which require further evaluation and will be frankly named as 'The Unknown'.

2.3.1 The known

IAS 38 provides some examples of intangible assets which fulfil the pre-defined requirements (as discussed in chapter 2.2):

- patented technology, computer software, databases and trade secrets
- trademarks, trade dress, newspaper mastheads, internet domains
- video and audiovisual material (e.g. motion pictures, television programmes)
- customer lists
- mortgage servicing rights
- licensing, royalty and standstill agreements
- import quotas
- franchise agreements
- customer and supplier relationships (including customer lists)
- marketing rights¹¹

In light of the scope of the present paper intellectual assets constitute the main group of intangibles to focus on. Intellectual assets are primarily divided into two categories: intellectual property and intellectual capital. The intellectual assets which are more linked to the first group - intellectual property (IP) - contain a higher portion of tangible elements. This means they are easier to identify, to value and to measure. Moreover IP is a part of the general legally protected assets of an organization.

The most common and established intellectual assets are categorized in Figure 2.

¹¹ N.a. (n.y.): IAS 38

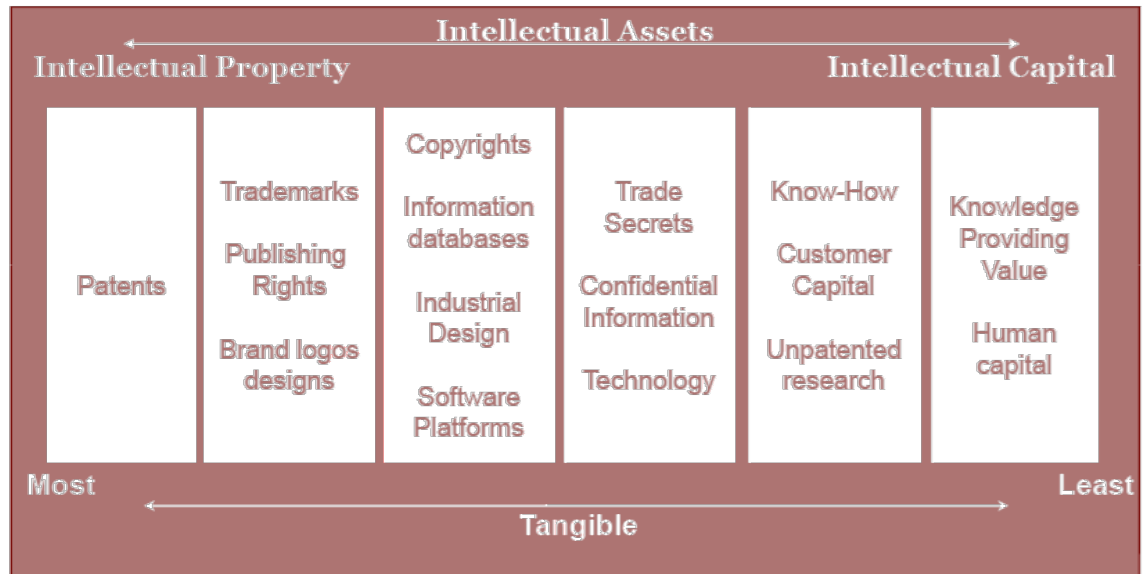


Figure 2: Classification of intellectual assets

Source: Hadjiloucas, T. (2011): IP valuation, exploitation and finance. WIPO workshop on effective intellectual property asset management by SMEs, PWC, Tel Aviv, URL: http://www.wipo.int/edocs/mdocs/sme/en/wipo_smes_tlv_11/wipo_smes_tlv_11_ref_t15.pdf, accessed on 12th April 2017.

In terms of value intangibles often outperform the tangible part of the total assets allocated to an organization. Therefore, it is of great importance to be aware of the second group of intellectual assets - the intellectual capital (IC) - and to understand its full extent and impact on the organization as well as the economic decision-making.

2.3.2 The Unknown

Within the IC group, three particular categories can be identified: human capital, structural capital and relational capital. In literature a certain consensus concerning this classification can be recognized.^{12 13 14 15}

As this classification marks a central element for the present paper, it is highlighted in the figure below.

¹² Cf. Hsu, L.C.; Wang, C.H. (2012): Clarifying the Effect of Intellectual Capital on Performance: The Mediating Role of Dynamic Capability, in: British Journal of Management, Vol. 23 No. 2, p. 179-205.

¹³ Cf. Andrikopoulos, A. (2010): Accounting for intellectual capital: On the elusive path from theory to practice, in: Knowledge and Process Management, Vol. 17 No. 4, p. 180-187.

¹⁴ Cf. Moon, Y.J., Kym, H.G. (2006): A model for the value of intellectual capital, in: Canadian Journal of Administrative Sciences, Vol. 23 No. 3, p. 253-269.

¹⁵ Cf. Martinez-Torres, M.R. (2006): A procedure to design a structural and measurement model of Intellectual Capital: An exploratory study, in Information & Management, Vol. 43 No. 5, p. 617-626.

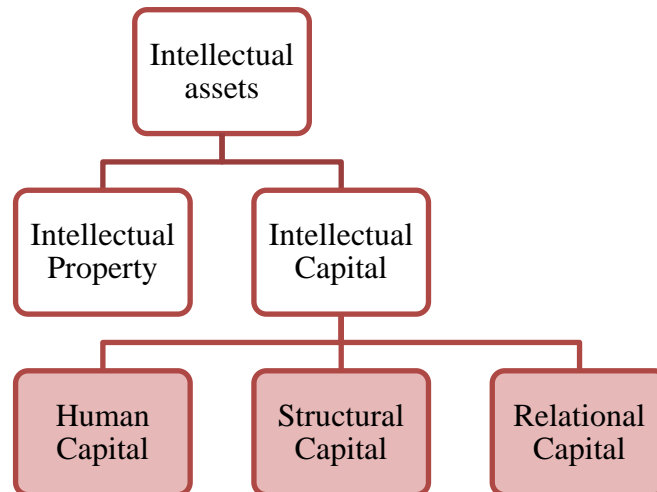


Figure 3: IC categories

Source: Own draft, based on Hadjiloucas, T. (2011): IP valuation, exploitation and finance and Hsu, L.C.; Wang, C.H. (2012): Clarifying the Effect of Intellectual Capital on Performance.

Most authors describe Human Capital (HC) as the aggregation of an employees' knowledge, capabilities and skills. Depending on the source they consider education, experience, attitude, creativity/innovativeness and versatility as separate additional points.^{16 17}

For the present paper the following definition should serve as a basis: The term Human Capital accumulates all parts of individual, human-based knowledge as well as a person's competencies, attitude and attributes.¹⁸

Education, experience, creativity, versatility and motivation fall under this umbrella likewise.

Structural Capital (SC) represents the business knowledge in the form of structures, processes and procedures, routines, guidelines as well as databases and technology. SC combines all the non-human knowledge and know-how within an organization which can be used by the employees.¹⁹

Some sources describe the SC as organizational capital and separate between internal and external SC.²⁰

¹⁶ Cf. Lopez Saez, P.; Martin de Castro, G. (2010): Intellectual Capital and Technological Innovation: Knowledge-Based Theory and Practice, Information Science Reference, New York, p. 300 ff.

¹⁷ Cf. Tidd, J.; Bessant, J. (2009): Managing Innovation: Integrating Technological, Market and Organizational Change, 4th edition, John Wiley & Sons Ltd, Chichester, p. 62ff.

¹⁸ Own draft

¹⁹ Own draft

²⁰ Cf. Lopez Saez, P.; Martin de Castro, G. (2010): p. 300 ff.

The Relational Capital (RC) can be defined as the knowledge and potential within and of all internal and external networks of an organization. RC can give enormous power to an organization.²¹

In all three definitions, the element *knowledge* seems to be the essential. Therefore, the following chapter will deal with this topic.

3. Specifics of a knowledge economy

Within the last 200 years the Western society has first shifted from an agricultural to an industrial society, around 100 years after this first step it turned towards a service society and finally we are right at the edge of a transition towards an information/ knowledge economy.²²

This shift does not simply mean having another way of production and a broader range of products and services. In fact, it implicates a complete transition of how our world works and how we function as a part of it. In order to analyse the forces behind the shift, the society's infrastructure - meaning the production and reproduction of the society itself - needs to be looked at. Secondly the examination of the structure of the society and thirdly the analysis of its values can help to gain a relevant insight.²³

As a complete paper could be written on the shift of the society, this chapter will only draw a short picture of the major changes which are most relevant for the present paper.

Some theories describe the development of new technologies as driver for the social, cultural, political and economic changes. Other theories see the origin of the shift in the transition of the society itself which thus prepared the ground for the invention of new technologies and methods. For the present paper there is no need to define the origin of the shift itself. Far more important is to detect the impact on the society, the labour market and the shift of work which has to be performed in order to ensure a stable or even growing economy.

²¹ Own draft, according to: Lopez Saez, P.; Martin de Castro, G. (2010): p. 300 ff.

²² Cf. N.a. (n.y.): Industrialization, written by: The Editors of Encyclopaedia Britannica, URL: <https://www.britannica.com/topic/industrialization>, accessed on 14th March 2017.

²³ Cf. Kaynak, E.; Kahle, L. (2013): Euromarketing and the Future, International Business Press, Binghamton, p. 115ff.

Before the role and importance of the factor knowledge will be analysed, the following sub-chapter will outline the fundamentals of economy.

3.1 Fundamentals of economy

We are surrounded by economics, they influence our everyday life, our decision-making as well as the relationships and networks we have, due to internationalization and globalization the dimensions are even broader. In order to embed the previously discussed subjects into a global picture it is important to explore the core principles of the economic landscape. Therefore, the following sub-chapters will provide the reader with a short overview.

3.1.1 The equilibrium market conditions

In the economy a market appears where a demand and a supply meet. In concrete, this means a party A has a certain need and a party B can offer a good to cover the demand. Depending on the need party A is willing to pay a certain price for the coverage of his/her demand. On the other side party B is willing to supply the good for a certain price. If the price varies, two phenomena happen: If the price increases party A is only willing to buy a lower quantity whereas party B is willing to sell a higher quantity. If the price decreases the contrary happens; party A is willing to buy a higher quantity whereas party B is only willing to sell a lower quantity.

The equilibrium market condition describes in theory a fictional constructed market situation with demand and supply in balance. The outcome of this situation is an equilibrium price. For all participants in the market the exchange is the best option; there is no opportunity for a participating individual to improve the own position with changing his/her actions. This imaginary situation presumes that there is no change of attitude or hidden interests. This situation leads to a predictability of the individuals' behaviours and decision-taking. The equilibrium market conditions apply whether we look at a single market or at the overall market system.²⁴

3.1.2 The rivalry principle

²⁴ Cf. Kirzner, I.M. (2007): Market theory and the price system, The Mises Institute, New York, p. 22ff.

Rivalry originates in an exclusivity of usage. If a good can only be used by one market participant, whereas others are restricted to benefit from the good, rivalry emerges. A loaf of bread for example can only be consumed by one individual (as long as he/she does not share it, and even in this case the amount of consumers is limited). That means the value derived from a good is limited to a fixed number of individuals. On the other hand certain goods exist which bring advantage to an unlimited group of individuals. Mostly the value allocated to these goods appears in combination with a general supply to cover basic requirements of society as inner security or a legal system.²⁵

3.1.3 The exclusion principle

The exclusion principle applies when individual human-beings or groups can be excluded from using a good. Mostly the question arises in connection with a (monetary) exchange value which individuals might not be amenable to accept. Public transport for example can be generally used to demonstrate the exclusion principle. Individuals can be banned if they are not willing to pay the required fee. In literature the lighting of public streets often serves as a counter-example. In this case it is not easily possible to exclude individuals from the use. Although there might be technological possibilities to exclude a certain group of people, the effort and costs would not justify the purpose. Economic reasons prevail in this case.²⁶

Human -, structural - and relational capital do not have a fixed market price. Generally, neither the rivalry, nor the exclusion principle apply to these intellectual assets. On one hand, it is nearly impossible, to keep others from using them. On the other hand, they can be used from a number of people at the same time. This leads regularly to a suboptimal allocation of resources in a market economy.

3.1.4 Positive and negative external effects

Economic activities cause consequences, which can have a positive and/or negative impact on others (who are not directly involved). Since the individual benefits and/or costs differ from the social costs/benefits, these externalities are often disregarded by the ones responsible for their appearance. The externalities can either appear during the

²⁵ Cf. Linde, F.; Stock, W. (2011): Information Markets. A strategic guideline for the I-commerce, Walter de Gruyter GmbH & Co. KG, Berlin, p. 62

²⁶ Cf. Linde, F.; Stock, W.G. (2011): p. 61

production process and/or during the consumption process. Positive external effects lead to an unplanned benefit for another party, whereas negative external effects lead to an unplanned cost for another party. A common example for a negative externality is pollution caused by companies during their production process. An example for a positive external effect could be the employee completing a part-time training on his own while the company can profit from the additional knowledge and competencies gained.²⁷

3.1.5 Private, public and meritorious goods

In general, one differentiates between private goods and public goods. For public goods neither the rivalry principle nor the exclusion principle applies. If both principles apply, the good belongs to the private good category. For private goods the consumption as well as the derived value only belong to the individual who has the ownership. Furthermore there are some options for mixed forms, if either one principle applies or the other. Scarce resources can be an example for societal common goods. Even though no one can be excluded from consumption there is a risk of exploitation. Often there is no direct fee allocated to the use, which leads to an over-consumption as individuals try to get most out of it (e.g. environmental pollution, fishing disputes). On the other hand natural monopolies exist. In fact, individuals can be excluded but as long as there is no exhaustion of capacities, there is no rivalry between the market participants (e.g. private security service).²⁸

Meritorious goods take up a special status. Primarily they belong to the category of private goods, but they are institutionally transformed into public goods *ex post*. Generally, this applies to goods which should serve the society. State monopolies fall under this category (e.g. education, health, railways). The transformation is mainly done in the best interest of the population in terms of equity and equality.²⁹

The nature of the subject leads to the question which category information and knowledge fall into or should fall into. To answer the question, economic, social and ethical concerns need to be considered. At this point we should come to the agreement that the type of

²⁷ Cf. N.a. (2015): Positive Externalities vs. Negative Externalities, URL: <https://quickonomics.com/2015/10/positive-externalities-vs-negative-externalities/>, accessed on 3rd April 2017.

²⁸ Cf. Linde, F.; Stock, W.G. (2011): p. 62

²⁹ Cf. Lane, J.E. (2005): Public Administration and Public Management. The principle-agent perspective, Routledge, London, p. 84 ff.

good depends on the information and knowledge itself. There are some elements which obviously need to be public, and if they are not, they will probably need to be institutionally transformed to meritorious goods, but when it comes to legal regulations on data protection and intellectual property, these types of information and knowledge require a legal protection and thus remain private. In any case the relevance of information and knowledge for certain parties needs to be analysed.

3.2 The relevance of knowledge

Comparable to the transition from the agricultural to the industrial society in the mid of the 18th century, which was marked by the beginning of the industrialization, and as well to the later shift from the industrial to the service society, we are today right at the edge of a further transition. Today the factors information and knowledge, the second advancing from the first one through a closer assessment of its background and the context specific environment, play a major role in this development. Due to the special relevance these factors give today's economy its name - *the (information and) knowledge economy*.

Previously it has been sufficient to determine the production factors as labour, capital and land.³⁰ Today these factors require a further examination. During the agricultural as well as during the industrial society an essential characteristic of the production factors has been the ownership. The further advanced the transition towards the service society, the necessity of ownership became less important. The power of disposition and later only the utilization of production factors was sufficient. With the information and knowledge society the focus will turn to the practice. The main resources and consequently the most important production factors will be and already have become information and knowledge - intangibles. Work and hence the whole job market have shifted drastically. Manual jobs will disappear more and more whereas a flexible and dynamic adaptation to changes will become (if not already is) key. This shift requires a multitude of competencies rather than set skills. Against this background human capital will play a major role for companies.

³⁰ Cf. N.a. (n.y.): Factors of production, URL: <http://www.investopedia.com/terms/f/factors-production.asp>, accessed on 26th March 2017.

Before this subject will be addressed in particular, the following sub-chapters will illustrate how knowledge works as a production and differentiation factor, a business enabler and a business driver.

3.2.1 Knowledge as production & differentiation factor

As stated above, knowledge is a major resource in our economy. Therefore, it is important to understand the background of the subject and how knowledge is created. '*Knowledge is the endogenous result of proactive behaviour, purposive efforts and prospective investments put in place by economic actors in a given environment.*'³¹

However, knowledge cannot be seen only as a result, but rather as embedded in an ongoing infinite process of development. Likewise, the economy is dynamic and continuously changing. Due to steadily changing requirements, information and knowledge gathering is vital. Individuals and organizations are forced to adjust in order to keep up. If they can even manage to be always one step ahead, they have an advantage over the competitors. Knowledge serves as a competitive advantage and a differentiation factor. Such advantages result for example in lower costs, higher pace, a unique selling proposition (USP) or in being able to shape the competition. In any case the knowledge lead should be used strategically. Innovation through knowledge is a buzz statement in this sense.

Despite that, there is another element of knowledge which requires notice. Power, arising from its practice, and the responsibility to use it wisely go hand in hand.

Information, as the origin of knowledge, creates a difference as well. Its value depends on uniqueness and scarcity. Due to its exponential spread and the caused overload, individuals and organizations face the challenge to filter useful information. In the contextual analysis and evaluation knowledge is created. Theoretically knowledge is an unlimited resource, only the access to it is restricted. In light of the shifted requirements on the job market, individuals constantly have to increase their knowledge to differentiate from others. For that reason, learning ability is a key competence. The frame conditions

³¹ Patrucco, P.P. (2015): The Economics of Knowledge Generation and Distribution. The role of interactions in the system dynamics of innovation and growth, Routledge, London, p. 3

and the access should be set by the state. This leads the way back to the discussion whether and which information should be/become meritorious goods.

Due to the fact that knowledge constitutes as a production and differentiation factor, organizations need to ensure a certain level of knowledge for their employees. Under this aspect it has to be allocated in the most efficient and effective way. The implicit knowledge which has not been documented so far in companies needs to be transformed into explicit knowledge. As a consequence, the knowledge remains inside the company in case of fluctuation. Yet, the implicit knowledge is located within the mind of individuals who themselves might draw an advantage from not sharing it as it can be seen as their own competitive advantage. Furthermore, companies sometimes do not even know or realize the value within. Structures and processes for active knowledge management need to be established.³²

Knowledge provides value, in the environmental context it is of commercial interest and can serve as a business enabler and a business driver.

3.2.2 Knowledge as business enabler and business driver

The business enabling function is of primary interest in the entrepreneurial context or in change management processes where new ideas and innovation are highly valued. Knowledge in form of relational capital can be highly crucial for founders. Having a broad network and knowing who to contact can make the difference whether a new business is successful or not. Especially start-ups without an own network have to rely on the already existing network of their founders and potentially on the network of their business angels/venture capital owners.

It is not only the knowledge about who to contact but the own ideas to start with, what makes the entrepreneurs successful. Many globally known products and services are attributable to the knowledge of their founders. Dietrich Mateschitz (Red Bull), Elon Musk (PayPal, SpaceX), Bill Gates (Microsoft) and Mark Zuckerberg (Facebook) are some examples for leading scientists in their areas. However, knowledge does not only serve as a business enabler but also as a business driver.

³² Cf. Robertson, P.; Jacobson, D. (2011): Knowledge Transfer and Technology Diffusion, Edward Elgar Publishing Limited, Cheltenham, p. 1ff.

Driving a business through knowledge is based on the utilization of this knowledge and the expertise about how to use it. Reverting back to Elon Musk, one can state that, he is not only recognized because of his founding spirit but also due to his entrepreneurial success. In 2004 he invested in the company Tesla Motors which has since received an enormous boost.³³

3.2.3 The importance of knowledge for companies

In organizations in which knowledge is the main business driver, certain competencies and a global framework are crucial in order to apply knowledge in the most effective and efficient way. The ability to learn fast, adapt to changes and a continuous development as well as a generally open environment for innovation and creativity are fundamental. Meaning the organization has to be prepared and an active knowledge management system needs to be in place. Thus, not only the upper management but also all the employees should understand the importance of knowledge.

In the survey, undertaken within the scope of this paper, professionals have been asked, within an open question, about what they think, the most important assets, they bring to their companies, are. The following figure depicts the answers of 125 participants. Terms which reoccurred most frequently are bigger than single answers (detailed answers can be found in the annexe).

³³ Cf. Calderone, J. (2015): 18 things Elon Musk has invested in, in: Business Insider Deutschland, URL: <http://www.businessinsider.de/what-companies-has-elon-musk-invested-in-2015-8?r=US&IR=T>, accessed on 26th March 2017.

- Flexibility/Mental flexibility
- Cultural fit³⁴

This result reveals the growing importance of competencies and attitude, whereas education and experience are not mentioned among the top five factors. Obviously, these ‘hard’ factors serve as a base for the personal development.

To approach a comparison between the participants’ perspective and a company point of view further questions have been asked. As the results of the previous question has led to a broad variety of answers, the following questions have been posed as closed ones with ten response possibilities to be rated. In order to avoid the possibility of the participants changing their answers for the previous question according to the predefined answer options for the recent question at this point, the option to return to a previous question has been turned off.

In the following course of this chapter three similar looking figures, representing different but similarly structured questions, are shown. The purpose has been to evaluate a set of ten attributes, representing main criteria for the employee selection in a recruitment process.³⁵ Firstly, the participants have been asked to rate the attributes according to their importance/relevance for a company from their point of view (figure 5), in a second step they have been asked to rate the same attributes according to what they think recruiters/companies look for/at (figure 6). Finally the participants have been asked to rank the ten attributes from one to ten according to what they see as the most important asset (1 = most important, 10 = least important), they provide to their company (figure 7). The response options have been the same as for the two previous questions. The figures show the results as well as a graph representing the arithmetic mean and the standard deviation to enable a direct and easy comparison.

³⁴ Pütz, G. (2017): Personal Branding, University meets Business ‘Talent Day’, presentation 11th March 2017.

³⁵ Classification according to own professional experience

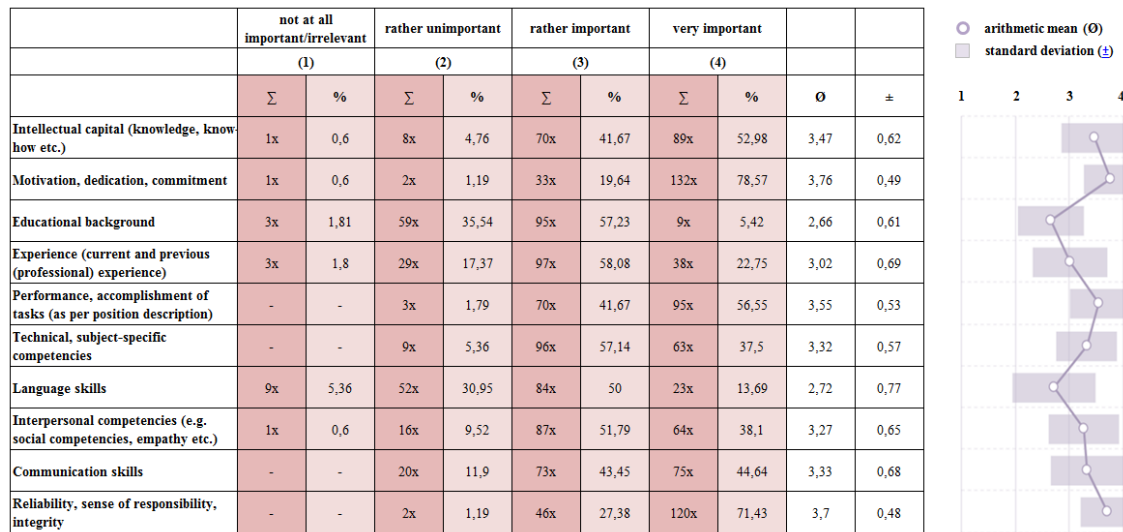


Figure 5: Employees' attributes (personal PoV participant)

At first sight the graphs showing the arithmetic mean and the standard deviation appear to be relatively identical. Comparing the individual attributes in general, we can observe that the participants see a major difference in the importance of 'hard' facts versus 'soft' facts. Asked from a company perspective they rate the educational background, experience, performance, technical competencies and language skills as more important than when they were asked from their personal perspective, as demonstrated in the arithmetic mean. On the other hand, intellectual capital, motivation, interpersonal competencies, communication skills and reliability are rated lower from a company perspective.

This result could be very interesting for companies which are interested in assessing their recruitment process. Eventually this divergency could lead candidates to present themselves differently during job interviews as they might have the impression, companies focus on other values than they do. For example, if a candidate assumes, that a company is focusing on his previous experience, he might as well focus his self-presentation on this aspect. However, the company might have a completely different target.



Figure 6: Employees' attributes (PoV company)

Analysing the highest scores for both questions, the result shows that from a personal PoV 'motivation, dedication and commitment' are rated highest with a value of 3,76/4, whereas from a company PoV performance has the highest score with a value of 3,59/4. However, 'reliability, sense of responsibility, integrity' has the second highest score in both cases. Another fact to be noticed is that the standard deviation for nine of ten cases is higher in figure 6 than in figure 5. This displays the disunity of answers, the opinions differ.

The already previously mentioned divergency between personal perspective and company point of view receives further relevance when analysing the answers related to the question about the personal assets, displayed in figure 7.

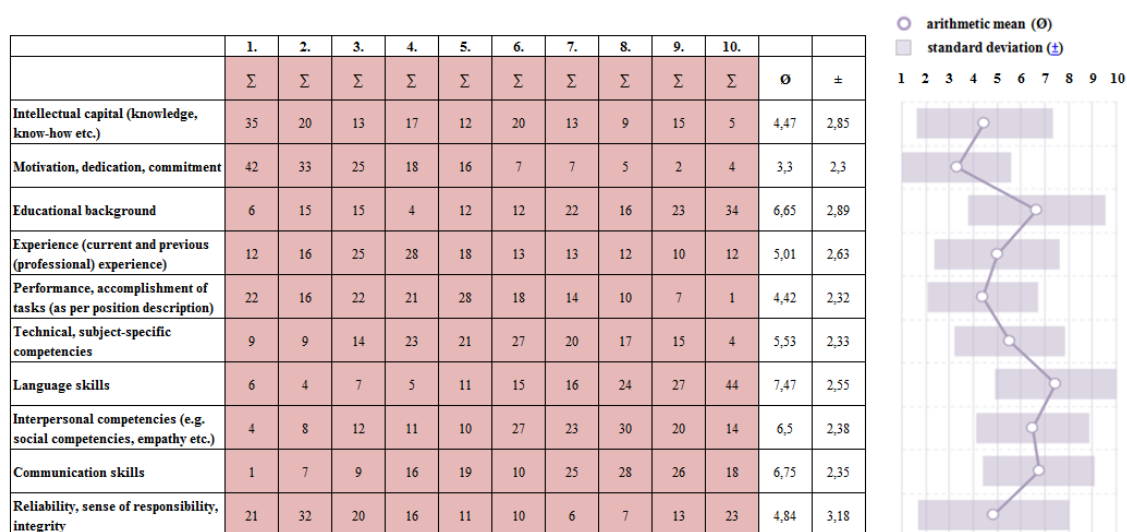


Figure 7: Assets participants

Clearly emphasized should be the broad variety of answers as demonstrated by the standard deviation in figure 7. Notwithstanding, some tendencies can be extracted. The closer the arithmetic mean trends towards '1', the more important it has been rated from the majority of respondents. Vice versa, the closer the result shows a tendency towards the number ten, the less important it has been determined. Again, as already highlighted in figure 5, 'motivation, dedication, commitment' has been considered the most important asset, also the standard deviation is the lowest for this question. So there is definitely a clear trend to be recognized. With a gap of 1,12 in the arithmetic mean, 'motivation' is followed by 'performance, intellectual capital and reliability'. Language skills, with a value of 7,47/10, have been rated as least important asset, respondents provide to their companies. In fact, this is interesting as the survey has mainly been conducted in the greater region of Luxembourg, Rhineland-Palatinate, Saarland, France and Belgium; hence in an area where language skills are supposedly highly valued and important. Communication skills, educational background and interpersonal competencies have been classified as less important as well. This result should ring several alarm clocks. Within the subsequent chapter the importance of competencies will be addressed.

4. Human Capital Management

'In the knowledge society the most probable assumption and certainly the assumption on which all organizations have to conduct their affairs is that they need the knowledge worker far more than the knowledge worker needs them.'

(Peter F. Drucker - economist & management consultant)

This quote of Peter F. Drucker reveals in one sentence why the debate about human capital management is that relevant in knowledge economies.

In the previous chapters the importance of knowledge has already been outlined. Yet, it is not that easy; knowledge alone is not sufficient as it generally correlates with a human factor. In order to use knowledge in the most effective and efficient way, the human factor, providing and using knowledge, needs to be managed as well. Continuous learning

and adaptation to changing environments become particularly important. Hence a set of competencies is required as well as a certain attitude.

These factors are displayed in the human capital and are as well crucial for an effective knowledge management. As a reminder, the previously compiled definition of human capital states, that the term human capital accumulates all parts of individual, human-based knowledge as well as a person's competencies, attitude and attributes. In fact there is no concrete definition for human capital management.³⁶

However, HCM represents a certain approach towards how the human capital of an organization is perceived. It should be embedded in the overall company strategy and it needs to be adapted to the changing nature of work.

The following sub-chapters address the future of work, including the significance for today's management, the company strategy, the role of leadership as well as the human capital as part of the personal brand.

4.1 The future of work

With the shift in our economy, the nature of work and the job requirements change. Companies search less for people who are able to conduct routine tasks as this type of work will be more and more carried out by robots and automated systems.

The transition towards knowledge-based companies has several impacts. On one hand, the job market will become tougher for candidates looking for a job. On the other hand, it will become more difficult for companies to find suitable candidates who meet the job requirements. Well-educated and trained talents who have the right set of competencies will be even higher in demand. Employer branding as well as personal branding and the utilization of social media on the job market increasingly gain impact. The future of work is about to be completely re-shaped.³⁷

Terms like human capital and war for talents and their impact on today's management are not fully discussed and solved yet, another major topic already requires an increasing awareness: the augmented workforce. It appears as if robots and automated systems already have long ago taken over a large-scale of production tasks. Today we are talking

³⁶ Cf. Ingham, J. (2007): Strategic Human Capital Management. Creating Value through People, Elsevier Ltd., Oxford, p. 359.

³⁷ Cf. Scharff, C.; Burioni, B. (2016): The HR challenges in business transformation in Luxembourg, PWC, Luxembourg.

about cognitive technology and artificial intelligence taking over ‘office duties’. Along with this development, a majority of jobs is reinvented as well. This development implies that organizations and their employees need to be ready and able to cope with the changing requirements. Furthermore, a set of competencies, a great amount of training and the acceptance of change are required. Although this tremendous shift seems frightening at first sight, it leads to many positive aspects as well. At the end, it is a change and change always has its positive and its negative elements.³⁸

So far the technological singularity, describing theories in the futurology which deal with the self-development of artificial intelligence, has not been transitioned into practice. Artificial intelligence does not function as a perpetual motion machine yet. Especially the human factor/the people aspect cannot be replaced. This leads to a growing demand on competencies, rather than on hard skills. Especially interpersonal competencies, communication skills, decision-making and problem-solving skills are becoming more important.³⁹

During the already previously mentioned ‘PWC journée de l’économie’ the participating HR Director mapped the top ten abilities employers look for in staff, comparing the abilities looked for in year 2015 and the ones which will be needed in year 2020.

Top 10 abilities in 2015		Top 10 abilities in 2020
1. Problem solving competence	→	1. Problem solving competence
2. Coordination with colleagues	→	2. Critical thinking
3. Personnel management	→	3. Creativity
4. Critical thinking	→	4. Personnel management
5. Conduct of negotiations	→	5. Coordination with colleagues
6. Quality control	→	6. Emotional Intelligence (NEW)
7. Service orientation	→	7. Ability to judge
8. Ability to judge	→	8. Service orientation
9. Active listening	→	9. Conduct of negotiations
10. Creativity	→	10. Mental flexibility (NEW)

Figure 8: Top 10 abilities employers look for in 2015 & 2020

Source: Pütz, G. (2017): Personal Branding

Problem solving competence is ranked as the most important ability of staff in year 2015 as well as in year 2020. In year 2020 it is followed by critical thinking and creativity.

³⁸ Cf. Schwartz, J. et al. (2017): The future of work: The augmented workforce, in: Rewriting the rules for the digital age, Deloitte Global Human Capital Trends, Deloitte University Press, p. 119ff.

³⁹ Cf. Schwartz, J. et al. (2017): p. 120.

Compared to the results for year 2015 there are even two new abilities appearing in the top ten in 2020, which are emotional intelligence and mental flexibility.

HCM becomes crucial and it needs to be part of the overall company strategy.

4.2 HCM as part of the company strategy

Without a strategy companies would never be successful on long-term view. But without people working towards the company goals, companies would not be successful either. Therefore, employees should not only know about what their company's strategy is, in fact they should be part of the strategy definition as well.

One of the first obstacles in strategy discussions is to find a common ground for the strategy definition. Although in literature various definitions for the term strategy exist, some similarities can be summarized. The origin of the terminology is based on the Greek word 'strategos' which is primarily the title for 'general' in military. Actually, our modern understanding of strategy comes from a military background. Even the most famous works in literature, which are still on the book lists of today's managers, deal with military thinking and the question on how to lead an army to success. Even though the publications date back several hundred years, literary works of Sun Tzu ('The Art of War'), Niccolo Machiavelli ('The Prince') and Carl von Clausewitz ('On War') on strategy have not lost much of their relevance and impact.^{40 41}

What these works all have in common is the utilization of ruses and stratagems to achieve targets. And even if it is named differently, the human capital plays a major role, in form of leadership, the input of human resources and knowledge. As the role of managers and leaders is important for human capital management it will be discussed in the following chapter after a further discourse on the results of the conducted survey.

First of all the participants of the survey have been asked, whether they know the overall strategy of the company they are working for. The results are shown in the figure below.

⁴⁰ Cf. De Wit, B.; Meyer, R. (2010): Strategy. Process, Content, Context, An International Perspective, 4th Edition, Cengage Learning EMEA, Andover, p. 3.

⁴¹ Cf. Horwath, R. (2006): The Origin of Strategy, Strategic Thinking Institute, Barrington Hills, URL: http://www.strategyskills.com/Articles_Samples/origin_strategy.pdf, accessed on 22nd April 2017.

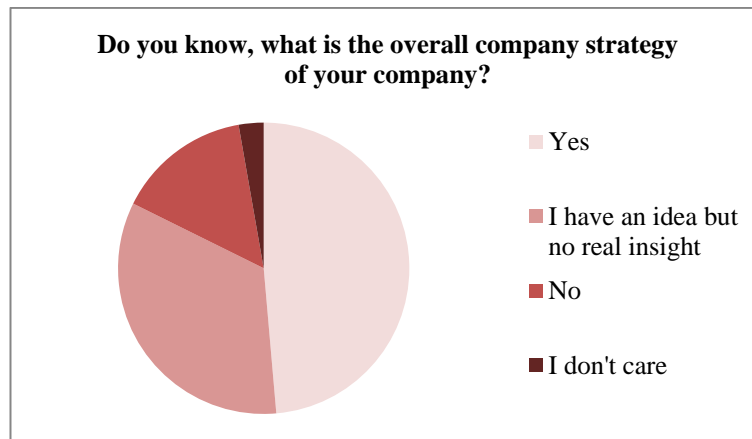


Figure 9: Knowledge about company strategy

The results show that nearly half of the respondents are aware of the company strategy and around 34% at least have an idea, although they do not have a deep insight. Nevertheless around 15% answered with a clear 'no' and even 3% replied that they do not care. All in all the result can be seen as quite positive for companies. Despite this, there is still some work which needs to be done; companies need to further improve their communication on the subject. To identify whether there are certain groups lacking insight or interest, the results of the first questions have been filtered per age group and per position. Figure 10 displays the outcome.

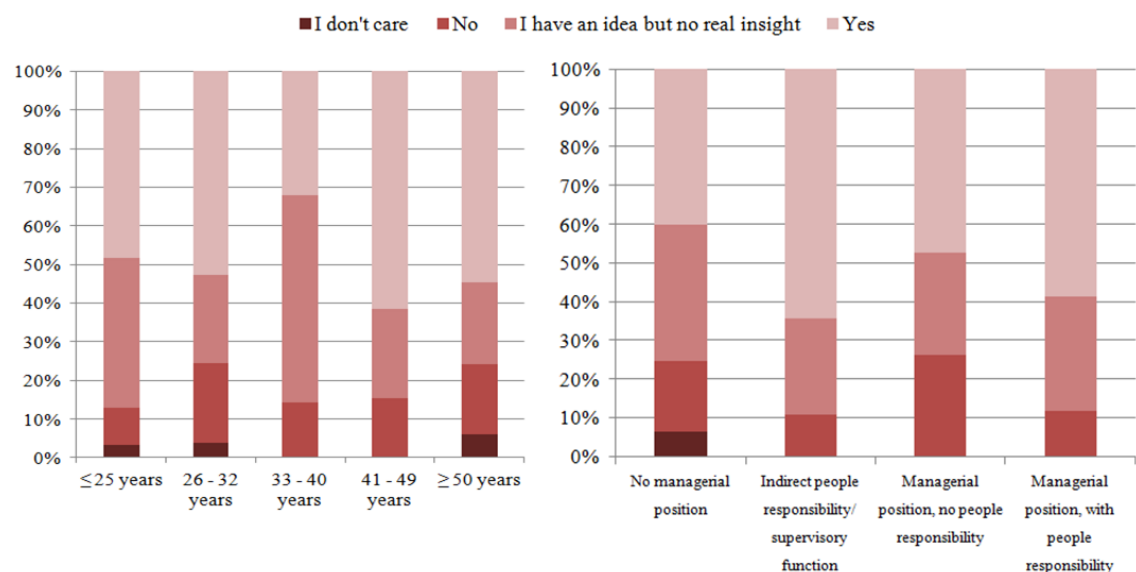


Figure 10: Target group analysis - strategy awareness

Having a closer look at the group responding that they do not care about company strategy, it seems as if it is limited to non-managerial positions and affects the age groups below 32 years and above 50 years. Reasons might be that company communication on this subject is focusing more on positions higher in hierarchy and especially people who are looking to strive for a management career are interested. Another point which becomes apparent is that the two groups with direct or indirect people responsibility answered more often with a 'yes' and less often with a 'no' than the two groups without people responsibility. Interestingly the group representing the responders who are in the midst of their careers (33-40 years old) answered less often with a clear 'yes' than the other age groups. However, the reply 'I have an idea but no real insight' occurs more frequently. Conceivably they consider their insight as not sufficient. It should be assessed whether they really have less insight than the others.

After the general evaluation of the strategy awareness, another important question is about who is involved in the development process of the strategy definition in companies. Participants of the survey were given seven answer options with the possibility to choose several answers.

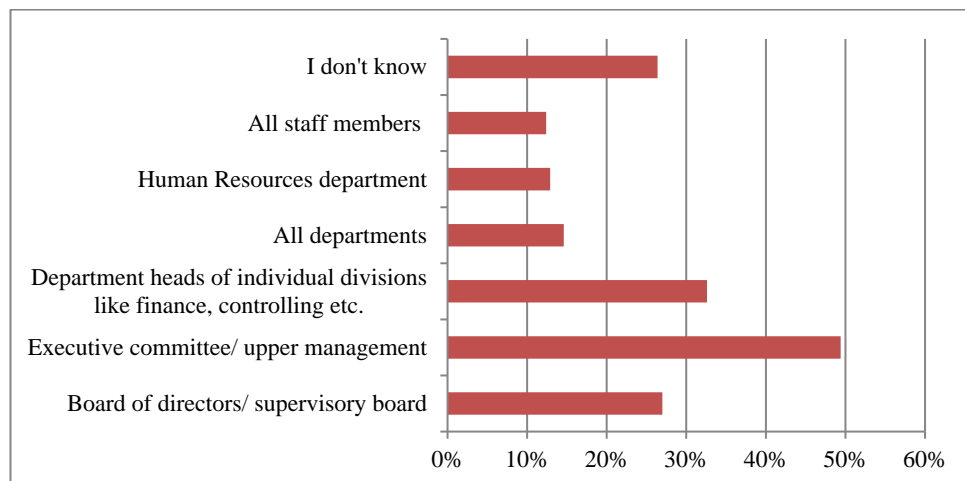


Figure 11: Parties involved in strategy definition

Around a quarter of the participants answered that they do not know, who is involved in the strategy definition. Again, here it would be important to have a clear company communication on the subject. Nearly half of the responders have chosen the option 'executive committee/upper management' which seems obvious as they should be involved in the development of the strategy anyhow. One third of the replies demonstrates an implication of department heads of individual divisions like finance and controlling.

However only one eighth of the participants could see that the human resources department and/or all staff members are involved.

Coming back to the first paragraph of this chapter, about the relevance of human capital and the involvement of employees, we have to record that there is still a lot of work to do when it comes to the strategy definition of companies. Besides the strategic course of human capital, management should be part of the overall company strategy. For that matter, leadership plays a major role. For leading over to the next chapter about management and leadership, a quote of Sun Tzu's 'The Art of War' seems adequate:

'If wise, a commander is able to recognize changing circumstances and to act expediently. If sincere, his men will have no doubt of the certainty of rewards and punishments. If humane, he loves mankind, sympathizes with others, and appreciates their industry and toil. If courageous, he gains victory by seizing opportunity without hesitation. If strict, his troops are disciplined because they are in awe of him and are afraid of punishment.'⁴²

4.3 Role of leadership for HCM

Staff retention, staff loyalty and staff satisfaction depend highly on the role of the manager. Additionally, leadership should not be underestimated as a very valuable intangible asset for companies. Although it is difficult to measure its value. However, this topic will be further discussed in the following chapters.

First of all, the terms 'management' and 'leadership' need to be clearly differentiated. To sum it up in just one word, management is responsible for the organization of work. In concrete, this means the planning, coordination and controlling of work. It is mainly task-focused oriented. Therefore, people are able to acquire management skills. Leadership on the other side describes more an approach to people. It is people-oriented and strives to motivate people by inspiring them, helping them grow and developing further. Leadership requires a different set of competencies which are not all easy to acquire as a due portion of self-awareness is required. A real leader focuses more on others than on himself.^{43 44}

⁴² Griffith, S. (1963): SUN TZU The Art of War, Oxford University Press, Oxford, p. 65.

⁴³ Cf. Ryan, L. (2016): Management Vs. Leadership: Five Ways They Are Different, URL: <https://www.forbes.com/sites/lizryan/2016/03/27/management-vs-leadership-five-ways-they-are-different/#6f72ab3269ee>, accessed on 22nd April 2017.

⁴⁴ Cf. Hegele-Raih, C. (2004): Leadership?, in: Harvard Business Manager, issue 4/2004.

Especially in the light of the ongoing transition and re-design of work, leaders are essential to bring organizations and employees to the next level. Furthermore, they have a huge impact on the engagement and commitment of employees. A research from the Gallup institute shows, that only a minority of employees has a high engagement towards their companies. An overview about the engagement index of leading industrial countries is shown in the figure below.

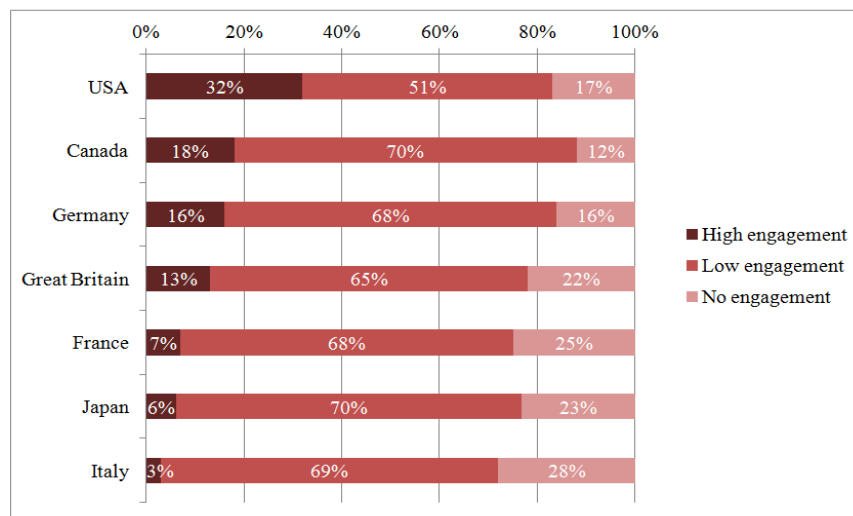


Figure 12: Gallup Engagement Index 2015

Source: Nink, M. (2016): Engagement Index Deutschland, URL:

<http://www.gallup.de/183104/engagement-index-deutschland.aspx>, accessed on 22nd April 2017.

Below one third of the interviewed persons in all of the listed countries show a significant engagement towards their companies. Between 12 percent and 28 percent have already quitted inwardly. This result should shake up companies. The main reason why people leave their jobs is not based on economic factors, it is rather based on bad atmosphere, lack of development possibilities and lack of recognition. This result is as well part of the survey which has been conducted within the scope of the present paper. Participants of the survey have been asked for their three main reasons for thinking about a job change. Within the following figure the outcome is presented.

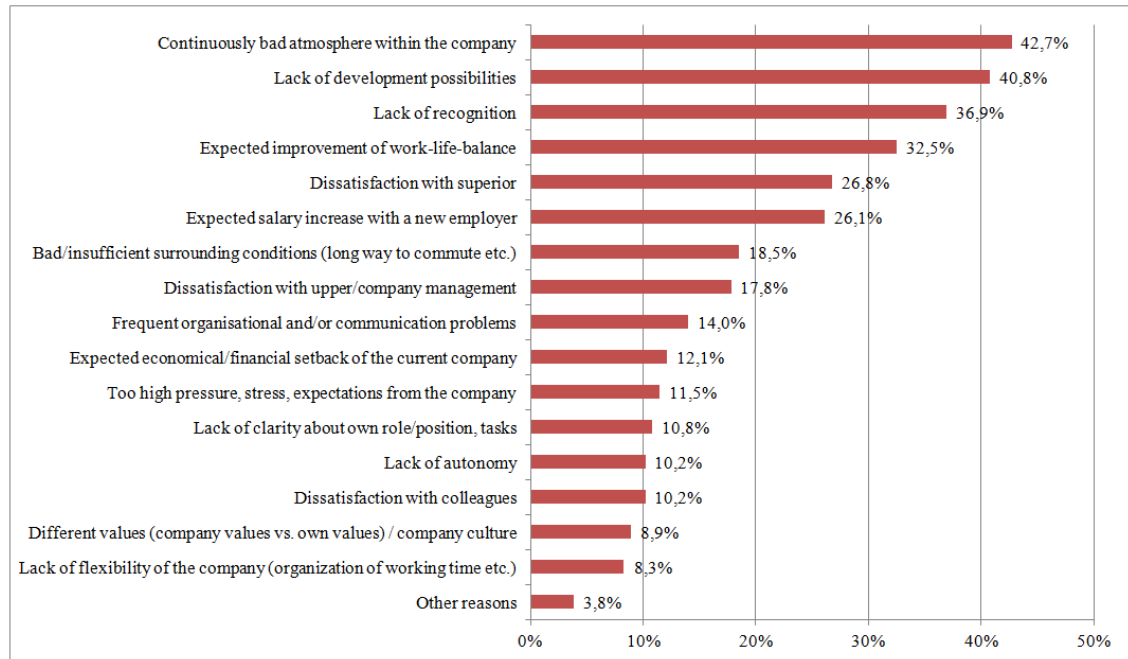


Figure 13: Reasons for job change

For most of the listed reasons for people starting to look for another job, the superior could have an influence on the situation in order to improve it. In difficult times the performance of employees is better, if they feel recognized and have trust in their management. Only if people trust their superiors and their company, they do their best. At the end it is the people who matter. Authenticity is a very important topic in that sense. Leaders should provide a vision to their team and motivate them by showing what they could achieve - but in an honest way. Leaders help people grow and develop further. This, in turn, has positive consequences for the knowledge account of an organization. People gain new knowledge in an open company culture where they feel recognized. Here they might share their knowledge and know-how with others more freely. The question is whether employees are aware of their human capital and if they are able to use it to gain competitive advantages for themselves.

4.4 Human Capital as part of the personal brand

Branding is a topic people might assimilate with marking the own goods and services and marketing in the first place. Likewise, the term employer branding has already gained awareness. However especially due to social media, personal branding is a critical subject which requires broad attention as well. Statistics say that around 48 percent of the employers reject candidates as a consequence of their online search on them and the

information they find. The main reasons for employers not to hire a candidate based on the information found online are inappropriate photos, information on drinking/drugs, negative comments on previous workplace/colleagues, poor communication skills and/or discriminatory comments.⁴⁵

‘Personal branding is the process whereby people and their careers are marked as brands... the creation of an asset that pertains to a particular person or individual, such as an area of knowledge, that leads to a uniquely distinguishable, and ideally memorable, impression.’⁴⁶

The personal brand can either have a positive or a negative tonality and it is a lot about perception by others. Whether it is built on purpose or not, people have the opportunity to shape it. If used wisely it can have a tremendous impact on peoples’ careers. Therefore, people should focus on it continuously. In some businesses it is already a must-have to have a certain ‘online visibility’, representing the personal brand. Referrals and social networks are the main sources for recruiters to find qualified staff.⁴⁷

In order to determine if people know their personal brand and if they can even sell it in job interviews, participants in the survey have been asked several questions. At this point, the link to chapter 3.2.3, where the importance of knowledge for companies has been discussed, can be drawn. Within that chapter the questions about what people see as their most important assets, have already been answered. In the following course it will be evaluated, how people present themselves in recruitment processes. First question in that sense has been, whether people have been thinking about a job change lately. Afterwards they have been asked about the last time, they have applied for another position (could have been inside the company or outside) and if they received a job offer. Obviously, it is not only the application for a new position itself, which reveals that employees might keep an eye open for new opportunities. Therefore, the subsequent questions within the survey addressed the most current point in career, when people have updated their resumes/CVs. Besides, updating the resume (without applying for another position) could be a sign for awareness of the personal brand. Due to this awareness, people continuously try to maintain it.

⁴⁵ Cf. Grasz, J. (2015): CareerBuilder’s 2015 Social Media Recruitment Survey, URL: <http://www.careerbuilder.com/share/aboutus/pressreleasesdetail.aspx?sd=5%2F14%2F2015&id=pr893&ed=12%2F31%2F2015>, accessed on 24th April 2017.

⁴⁶ Wehbe, M. (2013): How to build your personal brand in IT.

⁴⁷ Cf. Pütz, G. (2017): Personal Branding.

Finally, participants have been asked, whether they perceive to have received a fair chance for presenting themselves as well as their competencies during their last job interview. Furthermore, they have been asked, if they are satisfied with the way, they presented themselves. The following figure represents the results.

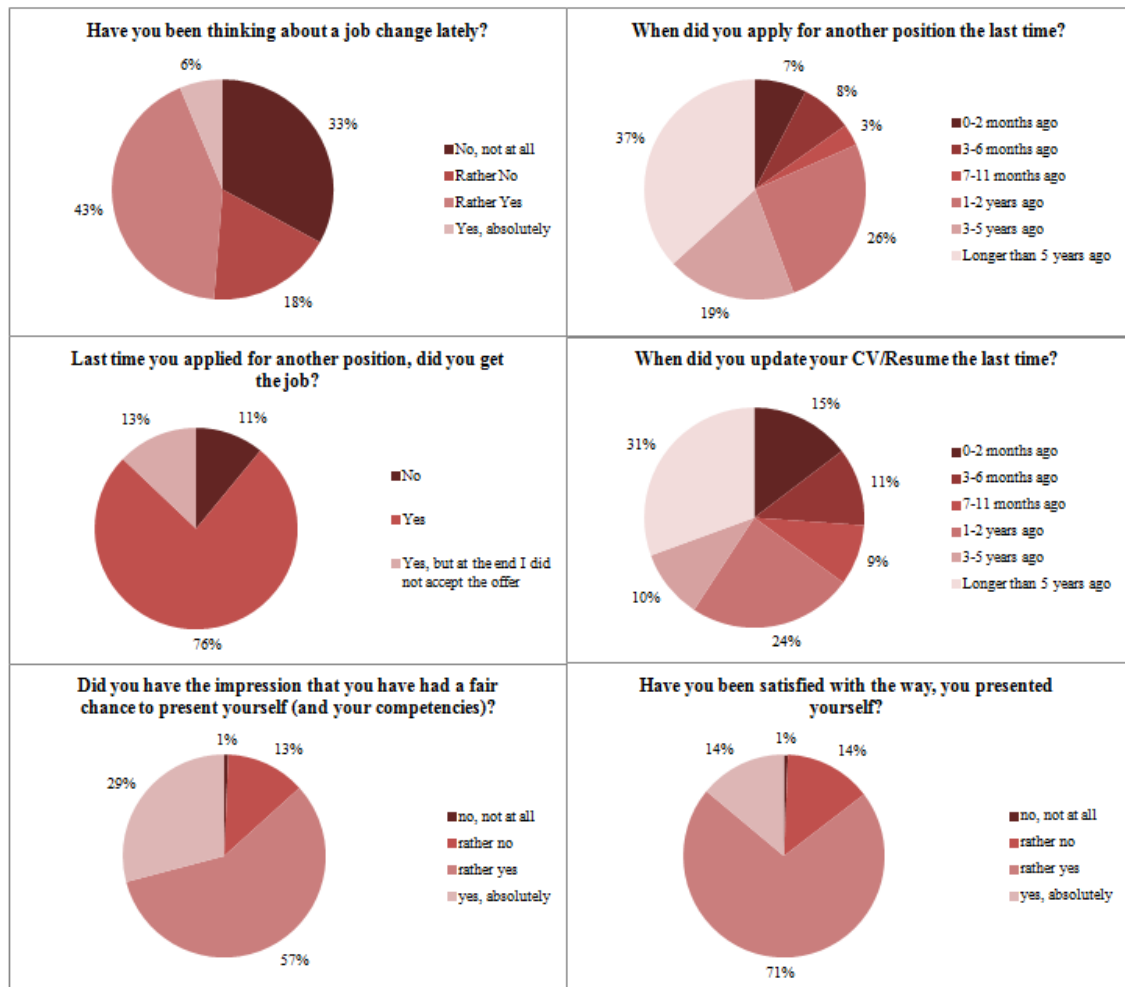


Figure 14: Survey job interview

Even if it seems balanced, whether people have been thinking about a job change lately or not, it is interesting that one third of the responders precisely denied that they think about a job change. Nonetheless six percent seem to look explicitly for a new opportunity and 43 percent would be open for a change. For the concerned companies it is crucial to determine the reasons why people are (actively) looking for a job change. They should figure out, how to motivate their employees for remaining inside the company. Additionally, the risks if people leave (e.g. loss of knowledge) and which countermeasures (e.g. knowledge transfer) to take, ought be evaluated.

Over half of the responders applied for another position more than three years ago. However, the order of frequency of response is different, compared to the question about

the last time, people revised their resumes. This could be an indication for people being aware of their personal brand. One reason for updating the resume could be an enhancement of personal human capital (e.g. acquisition of new competencies). Due to the fact that nearly 90 percent of the responders have gotten the last job they applied for, indicates that they seem to be able to present themselves in a right way. Conceivably they provide assets (intellectual capital), companies look for. The majority of participants has the impression having received a fair chance to present themselves and are satisfied with the way they presented. However, some could evaluate the reasons why they are not (fully) satisfied. The average time for preparation for the job interview has been between one and a half and two hours, though the range varies from zero minutes to thirty hours.⁴⁸ All in all the results can be rated as quite positive for employees as well as for companies.

5. How to measure intangible assets?

The awareness for intangibles is rising due to their economic impact. It has already been discussed that intellectual assets can lead to competitive advantages. Yet, in time of crisis staff savings are often the first step for cost reducing actions. On the other hand investments in staff are usually harder to get through upper management evaluation. The main reason for this phenomenon is the lack of numbers for valuation.

In the course of the present paper several intangibles and their relevance for companies have already been identified and highlighted. Being aware of the intangibles' value is already a first step. Knowing the exact economic value of the intangibles is another essential phase and helps to take (strategic) decisions on the assets. Eventually intangibles could be fully commercialized and transacted. Therefore, it is vital to value them.

5.1 Theoretical background on measurement in research

In research 'measurement is the process observing and recording the observations that are collected as part of a research effort.'⁴⁹ In this scope the levels of measurement, the reliability and the validity need to be observed. The level of measurement focuses on the

⁴⁸ Results based on survey

⁴⁹ Trochim, W. (2006): Measurement, in: Research Methods Knowledge Base, URL: <https://www.socialresearchmethods.net/kb/measure.php>, accessed on 2nd May 2017.

linkage between the values attributed to a specific variable and determines the applicable statistical analysis/the way to interpret the data. Generally, a distinction in four levels is made: nominal, ordinal, interval and ratio measurement. Nominal measurement only implies a naming structure, without any ordering system. In concrete, this means that the individual elements are labeled numerically. Within the ordinal measurement the values can be ordered by rank. Still, the distance in-between has no significance for interpretation, in contrast to interval measurement, where the distance between the numbers has an informative value. The interval measurement cannot be used for ratios. Therefore, the fourth level of measurement exists. Certainly, the ratio measurement allows the construction of a meaningful ratio/fraction with a ratio variable and it always implies a meaningful absolute zero. Relevance and validity are growing within the described levels of measurement. Hence the usage of an interval or ratio measurement is preferable.⁵⁰

‘In research, the term reliability means "repeatability" or "consistency". A measure is considered reliable if it would give us the same result over and over again (assuming that what we are measuring isn't changing!).’⁵¹ Due to the fact that reliability cannot be precisely ascertained, several means of estimation exist:

- Inter-Rater or Inter-Observer Reliability: Used to assess the degree to which different raters/observers give consistent estimates of the same phenomenon.
- Test-Retest Reliability: Used to assess the consistency of a measure from one time to another.
- Parallel-Forms Reliability: Used to assess the consistency of the results of two tests constructed in the same way from the same content domain.
- Internal Consistency Reliability: Used to assess the consistency of results across items within a test.⁵²

Reliability is about consistency. If humans are involved in qualitative and/or quantitative measurement processes, the question of reliability has to be addressed and observed due to subjective perceptions, information asymmetries and hidden agendas. Yet, reliability

⁵⁰ Cf. Trochim, W. (2006): Levels of Measurement, in: Research Methods Knowledge Base, URL: <https://www.socialresearchmethods.net/kb/measlevl.php>, accessed on 2nd May 2017.

⁵¹ Trochim, W. (2006): Theory of Reliability, in: Research Methods Knowledge Base, URL: <https://www.socialresearchmethods.net/kb/reliablty.php>, accessed on 2nd May 2017.

⁵² Trochim, W. (2006): Types of Reliability, in: Research Methods Knowledge Base, URL: <https://www.socialresearchmethods.net/kb/relytypes.php>, accessed on 2nd May 2017.

does not necessarily entail validity of data or in research the validity of the construct. ‘Construct validity refers to the degree to which inferences can legitimately be made from the operationalizations in your study to the theoretical constructs on which those operationalizations were based.’⁵³ In short, construct validity refers to the question whether the effective measurement itself is matching with the label it has.

5.2 The importance of valuation

The valuation of intellectual assets represents an important topic for several reasons. First of all the total share of intellectual assets in the company value is increasing as well as the expenditures in intangibles. Knowing the value of intellectual assets has an impact on accounting and taxation. On top of that it is crucial to know the exact company value for mergers, acquisitions, joint ventures or in case of liquidity shortage/bankruptcy for financial support or company liquidation. In case of liquidity shortage or for financing reasons valuated intellectual assets could as well be used for fund raising purposes. In this sense it could help to attract investors and venture capitalists or serve as security for bank loans. Even for arbitrations it is important to know exactly the value of all the company assets to set the path for recovery. In these cases, an exact planning is crucial.⁵⁴

Due to the specifics of the knowledge economy intellectual assets are more and more subject of commercialization. Selling and/or licensing rights on intellectual assets is a common business model. In order to calculate the correct prizes and to calculate the margins the intellectual assets have to be valuated.⁵⁵ This is not only the case for intellectual properties as patents but also for intellectual capital rights. Companies whose business model is based on providing knowledge to other companies, for example through sale of creativity and innovative ideas, need methods for measuring the value of their ‘services’.

Besides, decision-making processes within companies require exact figures on the value of individual assets. Especially if investment decisions are taken, which have an impact on the intellectual assets.

⁵³ Trochim, W. (2006): Construct Validity, in: Research Methods Knowledge Base, URL: <https://www.socialresearchmethods.net/kb/constval.php>, accessed on 2nd May 2017.

⁵⁴ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation, European IPR Helpdesk.

⁵⁵ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

Eventually, for the above listed reasons, a valuation has to be performed. Within the following chapter the existing methods for valuation of intellectual property will be presented.

5.3 Existing valuation methods for intangibles

Generally, two different groups of valuation methods exist: the quantitative approach and the qualitative approach. Most commonly four different methods are applied to the quantitative valuation:

- cost-based method
- market-based method
- income-based method
- option-based method⁵⁶

They all serve the purpose to calculate the economic value by collecting and analysing numerical and measurable data. Whereas the qualitative approach is concentrates on the utilization and characteristics of IP.⁵⁷

The basic principle behind the cost-based method is to focus on the correlation between the development costs for IP and its economic value. Determination of the accrued costs is based on current costs for either reproduction or replacement of specific IP. Reproduction implies acquisition of identical IP whereas for replacement purposes the purchase or production of a substitute with a similar function is sufficient. Besides direct expenditures for purchase and production, opportunity costs arising from the interim time without usage of the IP and thus the relating lost business opportunities and profits are included.⁵⁸

The cost approach can be seen as a first step to value intangible assets. Still, it is lacking completeness due to its focus on current costs. Neither historical costs nor potential future benefits are included. Furthermore, it does not answer the question of valuating intangibles which cannot be reproduced or replaced due to uniqueness and exclusivity.

Baseline for the market approach is the comparison of similar transactions on the market and therein the scored value. For valuation the function, technological specificity and

⁵⁶ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁵⁷ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁵⁸ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

nature as well as the property are considered. Data research is focusing on annual reports, publications, specific databases (such as 'Royalty Source', 'Recap', 'Intellectual Property Research Associates' and 'Knowledge Express'⁵⁹) and court decisions concerning damages.⁶⁰

The contemplated transactions and the IP do not have to be identically. Consequently, the market-based method factors the uniqueness and exclusivity of intangibles. This leads to the difficulty that the reckoned value might not be correct due to a lack of information and transparency. The higher the level of information the better the calculation. Nonetheless the acquisition of data, especially for unique and exclusive IP, is limited.

The lack of consideration of future benefits is solved with usage of the income-based method, which focuses on the estimated future income streams.⁶¹ There are several methods of calculation concentrating on the expected income of future cash flows: discounted cash flow, risk adjusted net present value and relief from royalty. Within the income-based approach the discounted cash flow method is the most frequently used one.⁶²

Due to the importance of respecting the present value, a discount factor is taken into account. Meaning the expected future benefit is discounted by a certain factor to adjust it to current conditions.⁶³ The calculation of a discount factor is relevant as of the time value of money as well as the potential risks linked to the expected future income streams.⁶⁴ Determining the discount factor has a tremendous impact on the valuation and is not simple. The discount factor depends on the risks associated with the estimated cash flows. For general risks it is mapped with ten to twelve percent, whereas high risks ought to be discounted by 25 to 45 percent.⁶⁵

For certain industries the discounted cash flow method is being enhanced on the risk adjusted net present value. Affected by high risks during development of IP (e.g. medicine), industries like biotechnology or pharmaceutical require a special valuation method. After discounting the expected cash flows the risks are taken into account by

⁵⁹ www.royaltysource.com, www.recap.com, www.ipresearch.com, www.knowledgeexpress.com

⁶⁰ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁶¹ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁶² Cf. Sople, V. (2016): Managing Intellectual Property. The Strategic Imperative, 5th Edition, PHI Learning Private Limited, Delhi, p. 407.

⁶³ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁶⁴ Cf. Bryer, L. et al. (2011): Intellectual property strategies for the 21st-century corporation. A shift in strategic and financial management, John Wiley & Sons Inc., Hoboken, p. 289.

⁶⁵ Cf. Ruder, D. (2008): Strategies for Investing in Intellectual Property. Intangible Valuations, Real Returns, Beard Books, Washington D.C., p. 27.

statistical probability rates for successfully reaching the end of each development phase (e.g. clinical trials, marketability). These probability rates depend on industry indicators.⁶⁶

To determine the value of IP, the relief from royalty method is based on the assumption that an organization would have to pay a certain licensing rate (= the royalty), if it does not own the IP. Besides the license fee itself, the expected income streams, discounted by a specific discount rate in order to determine the present value, are considered as well.⁶⁷

Valuation of IP through income-based methods is dependent on the accuracy of forecasts and projections. Variables, such as discount rate, risk factors and the IP lifetime, need to be determined. Due to lack of information in most of the cases only an estimation is possible, which leads to discrepancies between the predicted and the exact value.

The last one of the mentioned quantitative approaches for IP valuation, the option-based method, is primarily used for pricing of financial options. Same as for the income-based methods, estimated future cash flows are considered for valuation. Pricing is often based on the Black-Scholes option-pricing model or similar mathematical models for valuation of (stock) options.^{68 69}

In contrast to the quantitative methods which are based on analytical data, the qualitative approach is concentrating on the evaluation of certain indicators to rate the IP. Means of valuation are surveys used for evaluating these indicators from different angles, such as market, company organization/resources, legal aspects, technological aspects and level of innovation.⁷⁰ In the frame of a due diligence process by rating and scoring of various relevant aspects, qualitative methods indicate the qualities, strengths and weaknesses as well as the opportunities and risks of IP. Criteria for valuation need to be identified first. These criteria should correlate with the derived value of the contemplated IP. As a second step the scoring and weighting factors are defined. Finally, the scores are entered in a decision table. The valuation should be done by a multi-disciplinary team to have a broad spectrum of perceptions and to guarantee a diversified approach.⁷¹ A commonly used tool for qualitative valuation of IP is the so called IPscore, which has been developed by the

⁶⁶ Cf. Sople, V. (2016): p. 407.

⁶⁷ Cf. Sople, V. (2016): p. 407.

⁶⁸ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁶⁹ Cf. Sople, V. (2016): p. 407.

⁷⁰ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁷¹ Cf. Munari, F.; Oriani, R. (2011): *The Economic Valuation of Patents. Methods and Applications*, Edward Elgar Publishing Limited, Cheltenham, p. 10ff.

Danish Patent and Trademark Office and is distributed by the European Patent Office.⁷²

⁷³

The qualitative approach can be seen as a useful method if analytical data is missing. On the other hand, this fact is also the main limitation of the method. If possible, the valuation ought to be backed by empirical data. Also, the definition of the criteria and the weighting factors should be done carefully and in an objective way.

All of the introduced valuation methods have advantages as well as disadvantages. Which method ought to be applied depends on the type of intellectual asset, the given data for the analysis, the level of development and the purpose.⁷⁴ Ideally the methods can be combined, to limit inaccuracy and subjectivity. For the valuation many variables need to be defined through forecasts and assumptions. However, it is a first step to measure the economic value of intangibles. Therefore, the difficulty of measurement should not be seen as a blocking factor.

5.4 Lack of valuation

The existing methods for valuation, which have been described in the previous chapter, are focusing on IP. Valuating and measuring the economic value of intellectual capital is much more difficult as it is even less tangible than IP. The present chapter has the aim to provide a frame for IC valuation.

A first step to design a model for IC valuation is to determine the core elements of human capital, structural capital and relational capital. These elements are visualized in the figure below and are based on the common dimensionalities described in literature.

⁷² Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

⁷³ Cf. Munari, F.; Oriani, R. (2011): p. 12.

⁷⁴ Cf. N.a. (2015): Fact Sheet Intellectual Property Valuation.

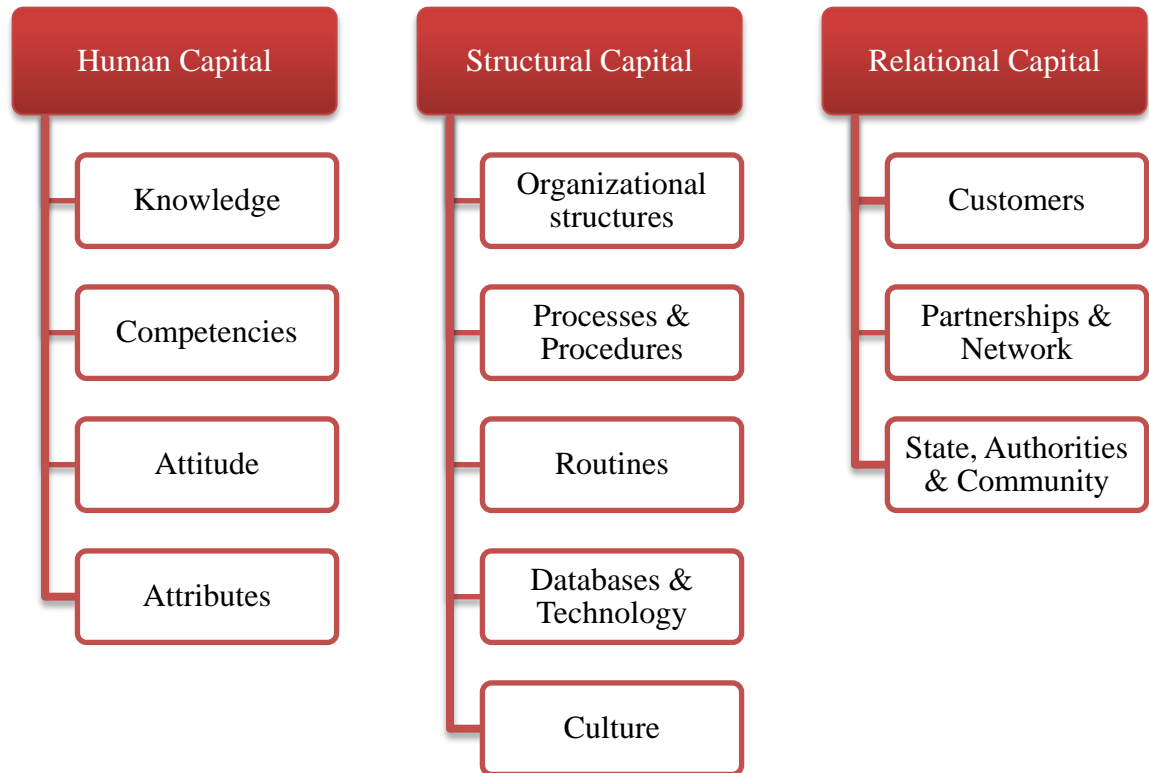


Figure 15: Elements of intellectual capital

Source: Own draft, based on definitions in chapter 2.3.2

According to the definition of human capital the four extracted elements are defined as knowledge, competencies, attitude and attributes. The necessity for having a separate element for attributes is based on the fact, that several personality traits, such as creativity and flexibility, cannot be assigned to any of the other groups. Even if they might be seen at the first sight as competencies, the author does not agree to that. For the classification of the structural capital elements, a distinction is made between the ‘hard facts’ concerning the organizational/hierarchical structures and the ‘soft facts’ related to the company culture. Another distinction between the explicit processes/procedures and the related know-how/knowledge and the implicit routines including the associated know-how/knowledge ought to be made. Breaking down the elements of the third group has been the most difficult one. Due to the importance and relevance of customers for the business, this group has been listed separately. Initially a second group for suppliers has been drafted. However, the author has decided to assign them to the group of partnerships and network due to a lack of unique feature for the specific purpose. The third group ‘state, authorities & community’ should round the macro-economic scope.

Human capital takes on a key role in this process, impacting and influencing the structural and relational elements. (For this reason, the title of the present paper bears the addendum ‘the special relevance of human capital’.) An employee with a high degree of commitment and motivation, possessing relevant business knowledge, can help consolidating partnerships as well as customer relations and hence developing relational capital. Furthermore, though organizational savvy the structural capital will be strengthened. The correlations within this nomological network have been confirmed in previous studies.⁷⁵ In a second step for valuation of IC, the indicators/factors for the individual elements ought to be identified. Therefore, each element has to be looked at separately. Indicators to be observed in order to value IC are listed in the figure below. Due to the nature of some elements they can be grouped in either one category or the other. Employee turnover and retention for example can either be linked to the organizational structures (nature of the business) and/or to the culture (e.g. Big 4 vs. family owned business). The proposition is based on own experience and knowledge in human resources related topics and studies as well as on the model for the value of intellectual capital proposed by Moon and Kym.⁷⁶

⁷⁵ Cf. Moon, Y.J., Kym, H.G. (2006): p. 253-269.

⁷⁶ Cf. Moon, Y.J., Kym, H.G. (2006): p. 253-269.

Knowledge	<ul style="list-style-type: none"> • Education, certificates, previous experience (inside & outside the company), additional experience (without link to current position), monthly training, business insight, IQ
Competencies	<ul style="list-style-type: none"> • Learning ability, intrapersonal competency, interpersonal competency, decision-making, organizational skills, information processing, manage resources, ability to deal with complexity and pressure, leadership, adaptation
Attitude	<ul style="list-style-type: none"> • Motivation, commitment, dedication, openness, satisfaction
Attributes	<ul style="list-style-type: none"> • Creativity, innovation thinking, flexibility, focus on performance, assertiveness
Organizational Structures	<ul style="list-style-type: none"> • Hierarchical levels, potential for development, mobility, career opportunities, uniqueness, employee turnover & retention, innovation potential, strategy, vision, goals, mission, responsibilities, decision powers, information channels, agility
Processes & Procedures	<ul style="list-style-type: none"> • Efficiency, relevance, scope, structure, key processes, accuracy, time frame, involved parties, explicit/documented know-how/knowledge, level of automation, quality measurements, responsibilities, error ratio & tolerance, innovation capability
Routines	<ul style="list-style-type: none"> • Implicit/non documented know-how/knowledge, uniqueness
Databases & Technology	<ul style="list-style-type: none"> • Importance, relevance, usefulness, accuracy, maintenance, substitutes, informativeness, scope, extent
Culture	<ul style="list-style-type: none"> • Openness, approach, employee satisfaction, development, turnover & retention, communication
Customers	<ul style="list-style-type: none"> • Target groups, customer satisfaction, loyalty & retention, relationships & trust, relationships towards individual employees, ratio of new customers vs. customer loss, potential for other opportunities
Partnerships & Network	<ul style="list-style-type: none"> • Relationships, hidden relationships, potential contacts, mutual dependency, correlations, satisfaction, loyalty & retention, power dimensions, potential for other opportunities, network development, possibility of preserving relationships, importance, relevance, dependency on individual contacts/employees
State, Authorities & Community	<ul style="list-style-type: none"> • Interference, support, collaboration, cross-border cooperations, relationships, positive publicity, perception

Figure 16: Indicators/Factors of IC elements

Although the identification and measurement of intangibles is a late-breaking research topic, no in-depth method for delineation of the respective elements has been developed so far.⁷⁷

Within the following chapter a proposal for approaching the measurement will be formulated.

5.5 Approach to measurement of intangible elements

After having defined the individual intangible elements, in a next step, the valuation method needs to be determined. Obviously, the valuation is dependent on its purpose. In the context of the present paper, the purpose of valuation is to identify the economic value of IC. In the course of writing on this paper, the author has thought about several approaches towards the way of looking at the problem to measure specific intangible elements.

First idea has been to look at the production/development process of a specific product or service. In simple terms the classic production process can be described as follows:

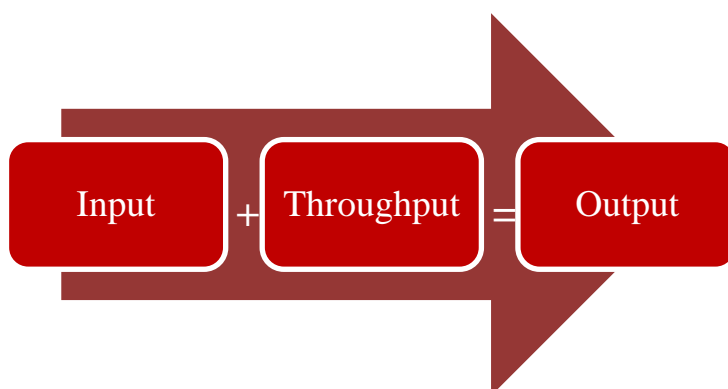


Figure 17: Classic production process

Financial and tangible production factors are part of the input as well as intangible factors. These intangible factors can either be based on intellectual property, on intellectual capital or both. The throughput specifies the service chain, the information chain and consequently the entire value-creation chain. It is an indicator for the efficiency of the whole process. Tangible and intangible goods and services are the output, respectively the outcome, which can be valued at market prices. Through calculation of the financial and tangible resources, that had been used during the entire production process, the

⁷⁷ Cf. Moon, Y.J., Kym, H.G. (2006): p. 253-269.

contribution and thus the ratio of intangibles can be determined. If IP and IC are distinguished, the intellectual capital can be extracted.

Example

Market price of product:	100 EUR
Financial resources:	15 EUR
<u>Tangible resources:</u>	<u>35 EUR</u>
Intangible contribution:	50 EUR
<u>Valuated IC</u>	<u>10 EUR</u>
IC resources	40 EUR

Certainly, this view on measurement of IC is way too simplified. Furthermore, it does not give any information on the economic value of individual intangible elements. To address this part of the problem, the conditions, which are necessary to determine the economic value of one element, need to be specified. First a perfect market is assumed, without any external or internal effects and preferences, but instant reactions, homogeneity of resources/goods/services and total transparency. One factor needs to be extracted, the other factors/conditions remain the same. This single factor is determined as variable and for the start of the analyses set to '1'. Analyzing, the outcome of the production process while varying the extracted factor (e.g. through multiplication), the contribution and influence of the factor on the outcome can be measured.

Even if this model is a simplified theoretical approach, the idea behind can be useful for further exploration of the topic. Breaking down the complexity of measurement to a very simple basis might help, to focus on what is essential when trying to measure the economic value of intangibles.

Second idea to measure the economic value of IC has been to use the cost approach in combination with the income-based method and even more concretely on the relief from royalty method. The question on royalty of IC can in this case be compared with a 'make-or-buy decision', which describes the calculation of costs and benefits for producing in-house compared with the costs and benefits arising when purchasing from an external supplier (outsourcing).

Therefore, internal services need to be analysed individually. For this analysis all the costs occurring inside the organization referred to the regarded in-house service are calculated.

In addition to the expenses for payroll (salary + social charges and other benefits), further costs arising from the organization of the service need to be included. Comparing the result with market prizes for using third party services is an indicator for the efficiency of the contemplated service. Due to the background of the author, a Recruitment Services (RS) department of a company is used for the following example. Given period is one year and it shall be assumed that within the fictitious RS department four people with similar tasks and responsibilities work. The company is reporting in Euro.

Example Recruitment Services department

Payroll expenses of RS department	EUR	231,438
Miscellaneous personnel expenses (trainings, travel costs,...)	EUR	22,890
Expenses for advertising	EUR	16,500
Expenses for participation in job fairs	EUR	10,000
Miscellaneous expenses (communication, ...)	EUR	88,562
Expenses for external assessments	EUR	12,000
Total	EUR	381,390
Total of recruitments (Jan16-Dec16)		225
Costs per Recruitment	EUR	1,695

Table 1: Example expenses Recruitment Services department

According to the result, the average costs per recruitment amount to 1,695 EUR. For simplification purposes the individual position and the allocated resources have been distinguished. The idea is, to charge other departments inside the organization with the average costs per recruitment, if they have a vacancy to fill and require assistance of the RS department. Supposing that there is no internal RS department, the departments would need to purchase recruitment services from external providers. The average fee for external recruitment in Luxembourg amounts to 20-25% of the total annual salary or

package of the final candidate.⁷⁸ Given the average annual salary of 55,752 EUR of employees in the private sector in Luxembourg,⁷⁹ the costs for one external recruitment amount to around 12,545 EUR. In the presented example, the RS department seems to work extremely efficiently. The result of 10,850 EUR, comparing costs for external recruitment with costs for internal recruitment, could be seen as the economic value of the intellectual capital allocated in the RS department. Elements like knowledge, competencies, attitude, attributes as well as network, efficiency of processes and routines may be parts of this IC. To compare more in detail, it would be interesting to see the cost structure of external recruitment providers. Furthermore, the contribution of the individual team's members should be analysed.

Therefore, the author would like to propose the following idea. Balancing the pros and cons of the previously introduced approaches, described in chapter 5.3 'Existing valuation methods for intangibles' and the ideas for measurement within the current chapter, the qualitative method should be chosen for valuation of individual intangible elements.

Assuming that there is no separation in tasks and responsibilities and no segregated area of duty, managers accessing the services of the RS department as well as other stakeholders, could participate in a survey about individual elements. Based on the indicators/factors which are represented in figure 16 a questionnaire could be set up. The following questionnaire serves as a simplified example to understand the idea behind.

Example questionnaire:

- How would you rate the knowledge of the subject for person A (B, C, D) from 1-Beginner to 5-Expert?
- How would you rate the level of dedication for person A (B, C, D) from 1-Low dedication to 5-Highly dedicated?
- How would you rate the level of commitment for person A (B, C, D) from 1-Low commitment to 5-Highly committed?
- How would you rate the level of reliability for person A (B, C, D) from 1-Not reliable to 5-Very reliable?

⁷⁸ Based on own experience

⁷⁹ Cf. N.a. (2016): Wer in Luxemburg wie viel verdient, in: Luxemburger Wort, URL: <http://www.wort.lu/de/business/gehaelter-wer-in-luxemburg-wie-viel-verdient-5808917e5061e01abe83aa94>, accessed on 2nd May 2017.

- How would you rate the level of empathy for person A (B, C, D) from 1-Not empathetic to 5-Very empathetic?
- How would you rate the communication skills of person A (B, C, D) from 1-Weak communicator to 5-Strong communicator?
- How would you rate the level of flexibility for person A (B, C, D) from 1-Low flexibility to 5-Highly flexible?
- How would you rate the level of rigour for person A (B, C, D) from 1-Low rigour to 5-Very rigorous?
- How would you rate the level of decision making ability for person A (B, C, D) from 1-Weak in decision-making to 5-Strong in decision-making?

To assure reliability of the result, the question related to one indicator, should appear repeatedly with another spelling or twist of word. Such a questionnaire should be set up based on psychological principals and with proven methodology. Therefore, practitioners should rely on expert knowledge on how to draft this kind of surveys from dedicated specialists. Setting up a real case survey would go beyond the scope of the present paper. The results should be embedded in a scorecard, with weighting factors to integrate the different importance of individual indicators. In order to be able to compare within equal conditions, for the following example it will be presumed, that the considered parameters are similar to each other. In the present case, the personal profiles of the four individuals match the job profile (which displays the requirements of a job - experience, education, competencies,...; often used as job advertisement) to a full extent and all of them have the same level of experience and education. In order to avoid any discrimination, the related factors are also identical. Based on this framework and on the potential outcome of the described survey the following scorecard represents the theoretical result. Within the first column the individual factors which have been evaluated, in the frame of the survey, are listed. The following columns represent the ranking for person A, B, C and D. Multiplied with the weighting factor the last four columns represent the resulting values.

Factors	Ranking				Weighting factor	Value			
	A	B	C	D		A	B	C	D
Knowledge of the subject	3.46	2.55	3.89	3.92	15%	0.52	0.38	0.58	0.59
Dedication	2.45	3.11	4.21	3.76	10%	0.25	0.31	0.42	0.38

Commitment	2.17	4.88	3.54	2.59	10%	0.22	0.49	0.35	0.26
Reliability	2.67	1.78	3.87	3.34	10%	0.27	0.18	0.39	0.33
Empathy	3.65	3.21	3.92	3.45	20%	0.73	0.64	0.78	0.69
Communication skills	3.83	3.24	3.56	3.91	15%	0.57	0.49	0.53	0.59
Flexibility	2.21	2.63	3.77	3.27	10%	0.22	0.26	0.38	0.33
Rigour	2.74	3.47	3.25	2.74	5%	0.14	0.17	0.16	0.14
Decision-making quality	3.92	3.17	2.43	2.66	5%	0.20	0.16	0.12	0.13
Sum						3.11	3.08	3.72	3.43
Percentage distribution						23,28	23,10	27,91	25,71
Distribution total economic value RS (10,850) in EUR						2,526	2,506	3,029	2,789

Table 2: Example Scorecard valuation RS

As demonstrated in the above scorecard, the previously calculated total economic value for one department/service unit can be distributed among the individual members by means of a qualitative valuation approach. The qualitative approach can also help to determine the overall economic value of IC for a company. Obviously this approach is a simplified version, as in practice external and internal influencing factors need to be taken into account. Future research might extend this framework to make it more specific and comprehensive.

5.6 Ethical concerns

Valuating and measuring intangibles is a key topic in knowledge economies. Identifying the economic value of intellectual capital seems to be something like the golden snitch for researchers. Reasons for relevance of the subject have already been outlined. However, the core of research is still about human beings. Certainly, companies would gain a better understanding of their full economic value and it could as well help for reporting and taxation purposes. The question is, how far do we want to go? Is it really desirable to value human beings with numbers and currencies? Projects on tracking employees, including their concentration, work rate and mood with electronic sensors,

already exist.⁸⁰ It is important to deal sensitively with the topic and to keep ethical concerns in mind. With the right approach, it can be valuable from a human perspective as well. The attention towards the subject is rising and the awareness about the importance of the human factor for organizations is increasing. Furthermore it is crucial to make sure that the intangible assets are safeguarded. Within the following chapter this point will be examined more in detail.

6. How to safeguard intangible assets?

Intangibles are highly valuable for companies and for individuals. They represent an economic value, are often the major source for revenue generation and lead to competitive advantages. The acquisition of intangibles is associated with costs, thus it is classified as an investment. To protect intangibles from loss and/or devaluation, organizations need to care about how to safeguard their IP and IC. Due to the different nature of these intangible asset groups, the scope of protection is different as well. Reasons for devaluation of IP can be the development of similar inventions from competitors, suppliers or customers, obsolescence and/or infringement.⁸¹

6.1 Safeguarding intangible assets against loss and obsolescence

For counteracting IP being devaluated because of loss and obsolescence, IC plays an important role and more concretely the innovation capability of a company. Furthermore, this implies that with safeguarding IC, a part of IP is protected as well. One solution for safeguarding intangibles seems to be quite simple. First of all the intangibles and their current status need to be identified. Without knowing what exactly needs to be safeguarded, intangibles cannot be protected. The present paper has already outlined the dimensions of intangible assets within organizations. As the following sub-chapters will show, it exists a certain frame for protection intangibles. Yet, it is mostly limited to IP. Besides, safeguarding IC within companies goes hand in hand with caring about the human capital - the employees. Risks related to human capital are amongst others linked to turnover, reputational damages and loss or obsolescence of knowledge and innovation

⁸⁰ Cf. Giang, V. (2013): Companies are putting sensors on employees to track their every move, in: Business Insider, URL: <http://www.businessinsider.com/tracking-employees-with-productivity-sensors-2013-3?IR=T>, accessed on 6th May 2017.

⁸¹ Cf. Pandey, N.; Dharni, K. (2014): Intellectual Property Rights, PHI Learning Private Limited, Delhi, p. 140ff.

capability. Reasons why people leave their employer have already been detected in the course of the present paper.

To detect the general openness to innovation within companies, one question of the survey has addresses this topic. Participants have been asked whether they perceive, that within their company new ideas and suggestions are appreciated and get discussed openly. The result is represented in the following figure.

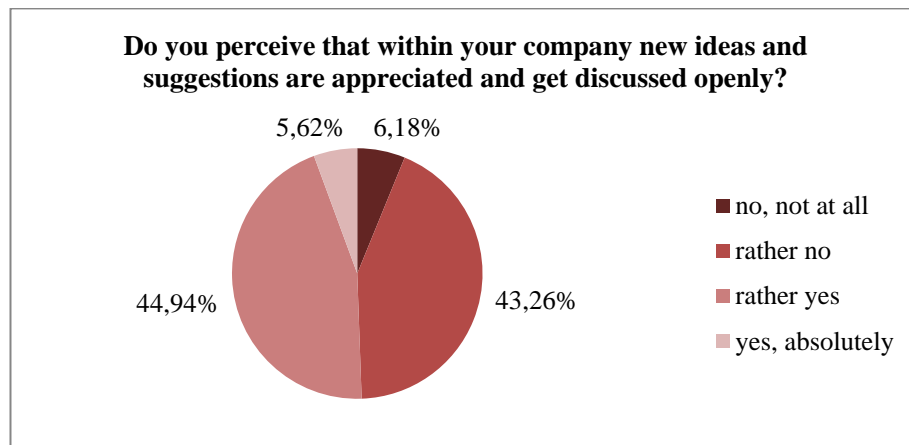


Figure 18: Openness to innovation

As the figure demonstrates, the distribution is quite equal. Around six percent of the participants answered either with ‘no, not at all’ or ‘yes, absolutely’. The remaining seven eighths of responses are nearly equally split between ‘rather no’ and ‘rather yes’. Results show that companies do not seem to be very open in terms of innovation and new ideas. Especially in view of the importance of innovation in a competitive environment and long-term strategic implications, this outcome should encourage companies to re-think about their innovation capability. To detect, which branches have the most difficulties in terms of openness towards new ideas and suggestions, the outcome has been analysed per branch. Within the following figure the distribution of responses per branch is displayed. Regarding validity, it needs to be considered that there has been a difference in total numbers of participants per branch, however a trend can be extracted.

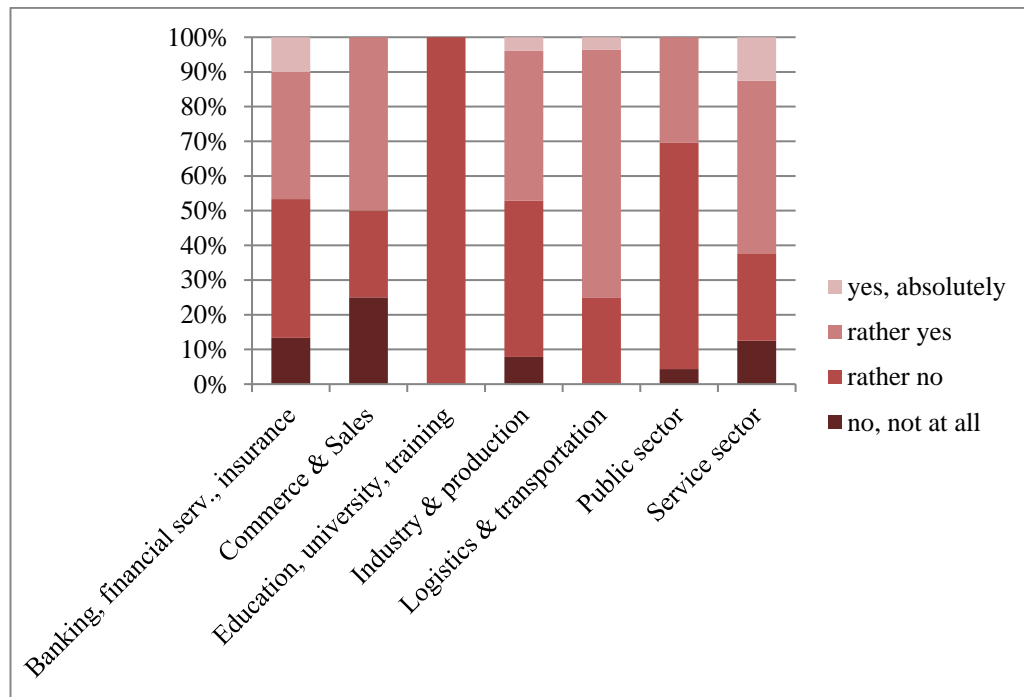


Figure 19: Openness to innovation per branch

Surprisingly, the participants working in the branch education, university and training seem to perceive only a limited openness to new ideas and suggestions. Also, the majority of respondents linked to the public sector perceive a low openness in terms of innovation. Branches with the highest openness seem to be logistics and transportation as well as the service sector. As these branches are characterized by a fast pace and high flexibility, it is not surprising, that these companies are more open to new ideas and suggestions.

In order to prevent the knowledge and know-how inside the organization from obsolescence, companies need to invest in the training and development of their staff. Participants of the survey have been asked if they perceive the offer of trainings, directly offered by their company or financed by their company, as sufficient. Again, the result has been analysed per branch.

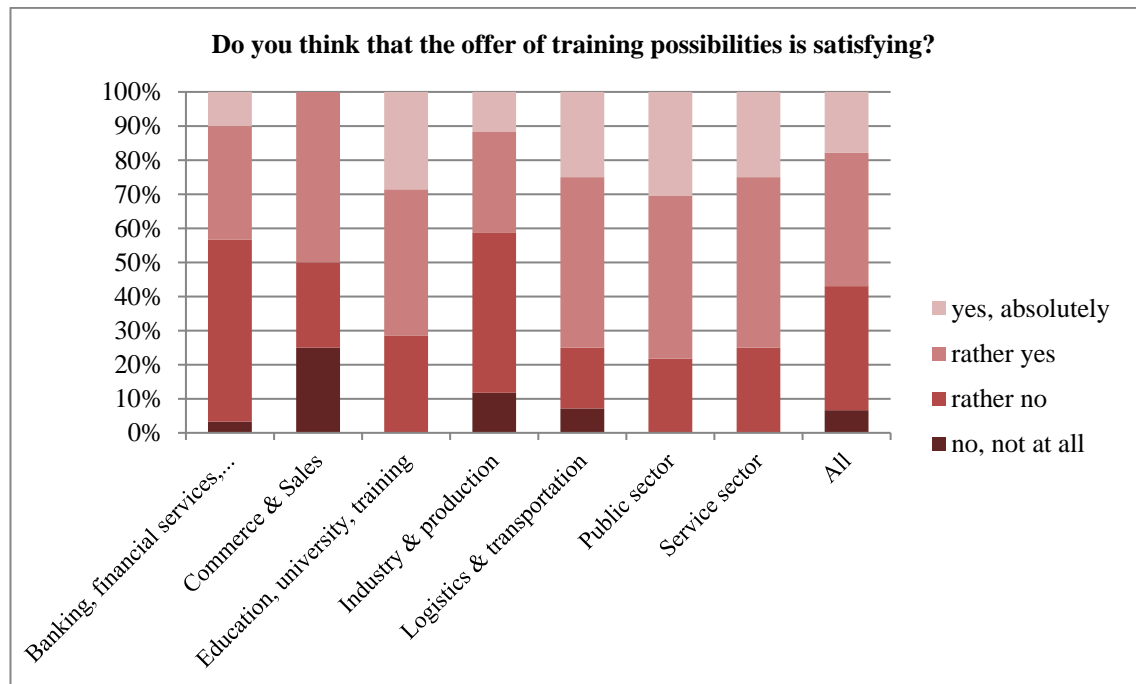


Figure 20: Satisfaction with offered training possibilities

This time, employees working in education, university and training as well as in the public sector seem to be satisfied with the offered training possibilities above average. However, there is a backlog when it comes to training possibilities in commerce and sales. Due to close customer contact and thus direct link to revenue generation, employer in this sector should re-think their staff development strategy. Obviously, the offered trainings should make sense and provide additional benefit to employees and employers. The need should be analysed inside the organizations in a collaboration between management, employees and the human resources/training department.

Within the survey, participants were asked, which training they would choose, if their company would pay for an additional one. Categories have been selected based on the author's experience in personnel development and training.

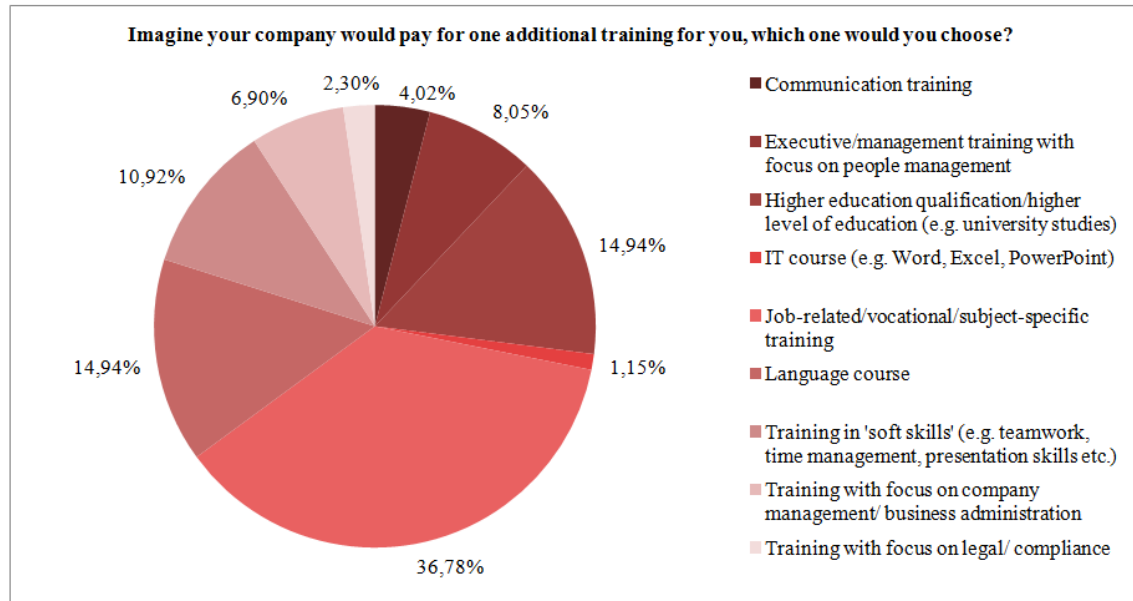


Figure 21: Types of training

As represented in the above figure, the highest percentage of responses refers to job-related trainings, followed at great distance by higher education qualification as well as language courses. Only a minority of participants would choose an IT course, a training with focus on legal/compliance or a communication training. Within the following figure the outcome has been separated by gender and age group.

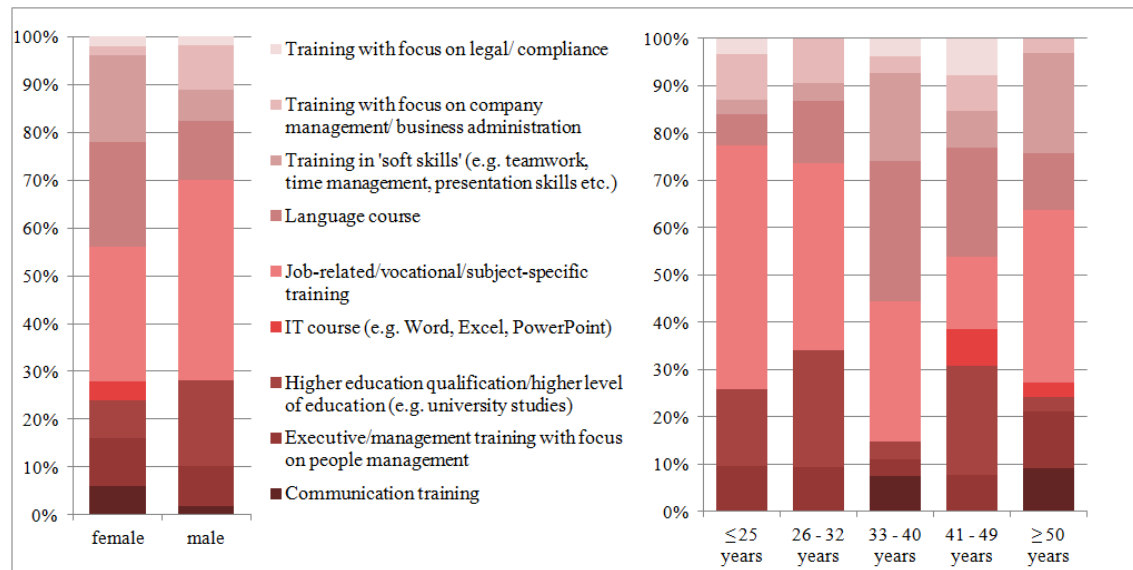


Figure 22: Types of training per gender and age group

The percentage of answers related to 'training in soft skills', 'language courses', 'IT course' and 'communication training' is higher in the female group of participants than in the male one. On the other hand, the male group chose more often 'training with focus

on company management/business administration', 'job related trainings' and 'higher education qualification' than the female group. Highest percentage for the category 'job related trainings' can be identified in the age group ≤ 25 years, whereas 'IT courses' have only be chosen in the age groups 41 - 49 years and ≥ 50 years. The age group 33 - 40 years has the highest share in language courses and the age groups ≤ 25 years and 26 - 32 years seem to be most interested in trainings with focus on company management/business administration, compared with the percentage linked to other age groups. The highest share in higher education qualification is represented among the age groups ≤ 25 years, 26 - 32 years as well as 41 - 49 years.

For sure analyses and discussions about the training and development of employees can be done in depth. However, as the topic of the present chapter deals with the question on how to safeguard intangibles, another aspect needs to be expounded. This aspect deals with the risk of infringement of intangibles and the legal conditions. Within the following subchapters the current legal frame will be examined as well as the question on what to expect in terms of how to safeguard intangibles.

6.2 Discourse towards current legal framework

In conjunction with the shift in economy and the related importance of intangibles for organizations the demand for legal protection of intangibles is increasing. Due to globalization, global interrelations and international competition it is not sufficient to protect the intangible assets within the country, the place of business is located in. However, in each country different laws and regulations exist. These are mainly focused on the protection of IP. The European Commission tries to harmonize the national laws in order to provide an umbrella for property rights within the European countries. Therefore, the European Union is currently developing a European Union IP law. The following statement, which has been published by the EC, summarizes the objective: 'In our increasingly knowledge-based economies, the protection of intellectual property is important for promoting innovation and creativity, developing employment, and improving competitiveness. The European Commission works to harmonise laws relating to industrial property rights in EU countries to avoid barriers to trade and to create efficient EU-wide systems for the protection of such rights. It fights against piracy and counterfeiting and aims to help businesses, especially small businesses, access and use

intellectual property rights more effectively.’⁸² A number of directives and regulations on IP already exist.⁸³ Another focus in regards to the protection of intangibles is on copyright. Currently the EC aims to adapt the related EU regulations to the ongoing economical shift and development of digital technologies. Due to the increasing digitalization and easy access to information via the internet and thus the exponential spread of information and content, an update of the existing legal framework is necessary. Communication on this topic has been issued in year 2015.⁸⁴ This means that the EU is still at the beginning of providing a valid legal framework. This second modernization with focus on copyright and related rights includes:

- ‘Economic rights which enable rightsholders to control the use of their works and other protected material and be remunerated for their use. They normally take the form of exclusive rights, notably to authorize or prohibit the making and distribution of copies as well as communication to the public. Economic rights and their terms of protection are harmonised at EU level.
- Moral rights include the right to claim authorship of the work and the right to object to any derogatory action in relation to the work. They are not harmonised at EU level.’⁸⁵

Summing up, the EU is currently in a process of updating laws related to the protection of intangibles. However they are still at the beginning and in light of the continuously ongoing changes, the protection of IP is in the backlog. Intangibles are lacking legal protection. This circumstance requires quick action.

7. Validation of quantitatively compiled data with qualitative research

Before drawing a conclusion of the present paper, the quantitatively gathered data will be validated with qualified research. For this part, an interview has been chosen as method.

⁸² N.a. (2017): Intellectual Property, published by European Commission, URL:

http://ec.europa.eu/growth/industry/intellectual-property_en, accessed on 8th May 2017.

⁸³ Cf. N.a. (n.y.): European Union IP laws, URL: <http://www.wipo.int/wipolex/en/profile.jsp?code=EU>, accessed on 8th May 2017.

⁸⁴ Cf. N.a. (2016): Copyright, published by European Commission, URL: <https://ec.europa.eu/digital-single-market/copyright>, accessed on 8th May 2017.

⁸⁵ N.a. (2016): Copyright.

7.1 Preparation and execution of the interview

The interview had the aim, to receive practical insight on the main research topics, which already had been addressed in the survey:

- Importance of intangibles for companies
- Most important assets, employees provide to their companies
- Awareness of companies and recruiters about these assets
- Inclusion of employees in strategy definitions
- Demand for intangibles in Luxembourg

In order to gain answers to these questions, an interview with an expert, having close contact to companies, employees and public institutions, has been conducted. In his position as ‘Chef de Service - Service employeurs’ at ADEM (the national employment agency in Luxembourg), Mr. Guy Pütz is referred to as someone who characterizes an expert in this field due to his specific knowledge and the exposure of his position. A characteristic of the Luxembourgish labour market and especially the function of the national employment agency is the mandatory requirement, that companies need to announce each vacancy to ADEM.⁸⁶

The interview has been set up in a semi-structured way. Previous to the execution of the interview a basic frame, which consists of 12 questions, has been developed. This basic frame has been focused on the most relevant questions in relation to the expert’s field of knowledge. In the course of the interview further questions arose, which helped to highlight the most important aspects more in depth. The interview with Mr. Pütz has been conducted by phone on May 3rd, 2017. In order to have an open atmosphere for discussion, the interview has been conducted in Luxembourgish language. Within the following sub-chapter, the result of the interview is presented. This result should be seen as an abstract of the conversation as the main points have been summarized.

⁸⁶ Cf. Loi du 18 Janvier 2012, Art. L. 622-4.

7.2 Results of the interview

Due to the shift in economy during the last decade, intangibles constitute a major part of the overall company value. Do you agree?

- Yes, absolutely, and it increased over the last years. Today knowledge is key. However due to this shift companies are now facing difficulties on how to manage the knowledge in the organization, especially in regard to staff turnover.

Referring to this, how do you see the transfer of implicit knowledge, which basically is in the heads of experienced staff?

- Some of the before mentioned difficulties relate to this aspect and to experienced staff who has been in the company for many years and thus possesses broad know-how. Even if there might be an obsolescent, redundant part of know-how, there remains a huge part which needs to be transferred to younger generations. However companies often do not realize the value of the experienced staff. They might only see higher salaries based on seniority compared to less experienced employees. As these experienced employees do not seem to fit anymore in the company picture, they are made redundant or sent to pre-pension. I could give many examples of cases where the know-how has been sent away. Now new, maybe younger, employees come in. They are trying to get up to speed but there a mistake happening. Companies start to realize that these mistakes could have been avoided, if the know-how had been transferred properly and if companies had set up mixed teams of experienced and new staff. Unfortunately today this is often not the case. Some companies even think that experienced staff does not fit in their young company culture or that mixed teams do not work out. This is a huge problem. Of course, there are also companies who already set up their teams like this. If every company builds teams, where people really work together, we could achieve/win a lot.

How important is the human capital for Luxembourgish companies?

- Extremely important, as well as for other countries. Luxembourg has the highest percentage on highly qualified staff (60%).⁸⁷ This implies a lot of knowledge. Due to Luxembourg being a service society, a huge part of this knowledge is linked to the people.

⁸⁷ Cf. N.a. (2015): 60% of Luxembourg's workforce is 'highly qualified', in: Luxemburger Wort, URL: <http://www.wort.lu/en/business/world-economic-forum-2015-human-capital-report-60-of-luxembourg-s-workforce-is-highly-qualified-562f882c0da165c55dc4c0e2>, accessed on 8th May 2017.

Thus human capital is extremely important as well as the network and personal contact between people.

Do you see a difference between Luxembourg and other countries (besides high percentage of highly qualified staff)?

- Good question. For sure the language environment is unique. In Luxembourg the majority of people speaks several languages. But yes, the main difference is related to the high percentage of highly qualified people. Less qualified staff is always easier to replace for companies. Others can take over the work quickly. But the knowledge of highly qualified staff is not that easy to transfer to others, and especially not from one day to the other.

In the course of my paper I have conducted a survey among professionals with focus on the Greater Region. Participants received a list of ten major categories of Human Capital related factors, which they had to rank according to what they see as their most important asset, they provide to their company. Within this ranking, they ranked language skills as least important. How do you see this?

- That is surprising. What we can see at ADEM is that languages are extremely important. If companies contact ADEM because they are looking for staff, they often face difficulties in finding the right personnel due to lack of language skills. Obviously, it depends on the position, there are as well jobs, where language skills are not crucial. However, especially if the position is linked to a sales environment and contains client contact, language skills are very important. It might as well depend on the branch, for example in aviation, mainly the English language is required. If you do not excel English, you might not have a chance in this sector.

Do you see any risk if companies do not care about their human capital?

- Yes, people leave their employers. Obviously, this can be seen negatively or positively. However normally only the good employees leave. The less good ones might stay as they might have difficulties to find something else. Besides the obvious risks arising from the loss of Human Capital, these people might even create their own businesses and become a competitor, or they leave directly to competition. And these people take their knowledge and know-how with them. Companies should really try to keep their (good) employees by designing the workplace in the right way.

So in your eyes, what is important for people to stay in their companies?

- Respect and recognition. People need to realize that they are needed, that they are valued as well as that their work is meaningful and is recognized. As well, what is getting more and more important is a flexible work environment and work-life-balance. Salary cannot be left aside. However especially for highly qualified staff it is not the main driver. It is the challenge itself that counts. A lot of people come from abroad to Luxembourg to work, for the sake of the challenge. But this means as well that you need to have continuously new challenges to keep those highly qualified people. For example, in research: if you do not give them the means and interesting projects, they will look for something else. But again the main reason, why people leave their companies, is a lack of recognition and respect. Often it is an accumulation of small details, which become the crucial factors for dissatisfaction and at the end for people quitting their jobs. And often the employer thinks, that these facts are only details and of minor importance. But still, these 'minor' facts drive people to realize and they do not get recognized for what they are doing, and they leave.

In your eyes, what are the most important assets, employees provide to their companies?

- The knowledge they possess as well as interpersonal skills and the ability to build networks. Of course, especially this last part is depending on the position but especially for high profiles, the network and the direct contact with others is essential. This part is cannot be replaced or substituted by robots. Often this ability makes the difference. If you have a good business developer or sales person, you will never be able to replace him by a robot. Furthermore, flexibility and the ability to adapt are important assets.

Regarding this last aspect, do you see any shift during the last years, that employees are asked to adapt more and have to be more flexible?

- Definitely. Due to the digitalization, people need to adapt to changing work environments and requirements. Today you often see that companies go the 'easy way' and dismiss people who are not able to cope with the changes. Maybe employees did not have to adapt much during the last 20 years and are not prepared for the new challenges. Maybe they even lack on flexibility to adapt. However, the responsibility also lies with the employer, who should realize if someone is not able to cope anymore and to do

something about it. So the flexibility and the ability to adapt, which are demanded, are increasing - for both sides.

Do you think employees are aware of their (these) assets?

- I would say yes, most people are aware.

To a full extent?

- Not necessarily but still a lot of people are aware. But it is questionable, whether the employer is aware of these assets too. I am not sure, it often seems as if he is not really aware. As well there are people who overestimate themselves.

What about recruiters? Are they aware of?

- There are for sure companies who are not yet on the right level, there are still a lot of them, focusing more on the past than on the future. They look at past experiences, instead of analyzing what the person will have to cope with in future and how the future responsibilities will look like; which competencies, capacities and degree of flexibility will be needed. Just because something has been proven over the last 20 years, it does not mean that you can cope with the requirements in future. All too often the focus is narrowed only on the experience of a person and what he has done before as well as on his technical knowledge. Instead companies should focus more on the potential of people and how they will need to adapt/what they will have to learn in future as well as on the competencies required to cope. Especially in smaller companies we often experience that people with no experience in the relevant field do not get a chance. But this is the wrong way to go. Instead of employing someone with relevant experience who might not be able to cope with the changing requirements in future, they could as well employ someone with less experience but with the potential to adapt and learn quickly and with the necessary motivation. What needs to be added at this point is, that a majority of the companies in Luxembourg are not that big but SMEs where recruitment is not always done professionally.

So how important is a well-founded education today – for employees and for companies?

- It is the foundation, it is important and will remain important. Education is already a proof for being able to handle a certain subject in a certain timeframe and having a

reflection capacity, which should not be underestimated. Furthermore, with a diploma you often have other opportunities to step into particular positions.

Do you see any tendency whether it is more important than in the past or the other way around? Or is there a different focus?

- Good question... It is depending on the branch. For sure there is a tendency towards higher education which is required. Low skills jobs will disappear nearly completely, meaning that without a secondary education you practically cannot do much. This is as well the problem we face in Luxembourg with the apprenticeships, our requirements are still too low. In comparison to the German system, where people complete their 'Abitur' and start their apprenticeship afterwards. This is a direction we will take in Luxembourg too and we already started. For example, in tourism there are already similar approaches. Still it will take some time, until the system changes. It should become standard, that people complete their secondary education and start an additional apprenticeship with a certain level afterwards. This is the direction which is preferred by us (ADEM). The further development of e-learning tools will help people who additionally want to study. People will not need to go physically to university anymore but can complete their studies from home. As a result, the level will increase continuously as well as the required knowledge will become more and more specific in some areas. If the required level of knowledge is increasing, people will need to specialize even more.

Do you think companies involve their employees in a sufficient way in their strategy definition?

- Rather no. In Luxembourg there are not that many big companies, where the strategy definition and decision-making processes take place in Luxembourg as well. On the other hand there are a lot of family businesses, which are managed in a patriarchal way and where employees are not much involved in strategic decisions either. In case of crisis, companies call in consultants from external providers, instead of involving resources from inside the organization. Although the knowledge about the company and what could be done to solve the crisis is already in the company in most of the cases: the employees. This knowledge needs to be catalyzed. Therefore, employers should speak with their employees. Often the knowledge is there but it is not used. In my eyes, employees are not involved sufficiently. This is as well the case for the development and implementation of new processes. Companies might say, that they do not involve their employees on a large

scale because of lack of time as it takes too long to engage them in the process and to work on the vision and strategy together. At first sight, it might seem easier to simply give directions to people and explain the employers view on strategy. However, this view entails a huge potential for demotivation and misunderstandings. On the long run, it does not safe any time, if you exclude the employees at the beginning. If the employees know, why they have to do something, know, what is behind and know, why the decision on strategy has been taken like this, people can derive their actions and tasks much easier and work more autonomously. Otherwise the strategy and the idea behind always remains abstract. Companies should definitely involve their staff in all of their processes. Their employees have the knowledge. They let them speak with clients and employees work autonomously on projects, so they should as well be involved in strategy definition. At the end, both sides have to work together as one. The employer as well as the employees have information which the other party does not have. Both get stronger, if they are united and have a common understanding. If people are included in decision making processes, they understand. Employees can as well help the management to gain a better insight in what is going on at all levels.

How could companies involve their employees?

There are many methods. They should start speaking with their employees. I have made good experience with strategy workshops. Perhaps external catalysers/coaches can be involved. Employees can ask questions and receive information they would never receive in a hierarchical relationship in the same way. The management needs to be open to criticism. If people are involved, companies gain a completely different enthusiasm and understanding about why decision are taken from their employees.

Can you identify a demand for intangibles in Luxembourg?

- There is a difference in offer and demand. One of the major problems companies face, is finding key skills, meaning finding the right people with the right competencies. Actually, this is one of the main topics at each conference. At the end it all comes down to this: the human resources. And this trend is increasing. If a vacancy is reported to ADEM, in 30% of the cases we do not have any candidate, for another 20% we have maximum one candidate, who often does not match as well. So you can say, that for around 50% of the positions, announced to ADEM, we do not have a candidate. *(Note of the author: announcing a vacancy to ADEM is a mandatory legal requirement in*

Luxembourg.) And if we do not have one, it is also difficult on the market to find one. In IT and finance we even do not find a suitable candidate for 70/80% of the cases - with upward tendency. Within the last four years we could see, that at the end of the month there remains an increasing number of vacancies open. More vacancies are announced to ADEM and more are extended because the employer cannot find a suitable candidate. This number is continuously increasing - it is getting more and more difficult.

To what extent is the ADEM prepared to cope with the demand for intangibles?

- Not that good. Therefore, we focus a lot on offering trainings. In Europe all employment agencies will develop in this direction. They will develop towards training organizations more than anything else. People, who have the right set of competencies, find jobs themselves. So we have to train the people who want to and can be trained. In this direction we already do a lot and want to do even more. Now we are facing the problem, that we have more training offers than candidates. It is extremely difficult to find enough people to do the trainings.

What is the reason?

- Some people are not willing to do jobs, they do not find comfortable in terms of working hours, shifts or travel involved. We can as well offer a lot of trainings together with the companies but we do not find enough people. Unemployment is decreasing but the remaining ones might often be seen as the less motivated ones. These are the natural limits and boundaries for ADEM. There are nearly no limits for trainings, we can offer but we need people who are willing to do these trainings.

In light of these statements, what would you recommend to companies?

- There are a couple of things, they could do. First one is about strategy: Set up a strategy with a path for the future, the direction you are going to take, the goals you want to achieve and how you want to get there. Then start with an analysis. Do you see a gap of skills, which you are missing? Continuously train people who are already inside the organization, so that they grow together with the company in order to avoid facing one day a situation where you do not have anymore the right people. Stop sending people to pre-pension, try to keep good people who have the know-how and right attitude towards work as long as possible. They could even act as mentors for new employees. They might not need to work fulltime anymore but remain as mentors for X hours or days per month

to accompany new employees. A lot of problems and mistakes could be avoided like this. In recruitment: look for more future oriented skills, soft skills, potential as well as drive to develop further and learn instead of focusing only on what people did in the past.

What else?

- If companies implement these suggestions, it would already be great. However, there are extremely big differences between companies.

8. Conclusion

Even if it is not possible yet, to allocate a fixed prize to all intangible assets, they constitute a major value for organizations. Human-, structural- and relational capital are eminent important resources for corporate operating -, value creations and information processes. Thus, it is extremely important, to address and focus on intangibles - not only in research but to look at them from an overall perspective, keeping in mind economical, accounting and taxation interests. However before starting to think about valuation and measurement, the specific intangibles need to be identified. Next to intellectual property elements, a number of intellectual capital factors exist, which might not be identified as intangible assets at first sight. After the identification, the current status of the intangibles ought be analysed. In this process organizations should focus on effectiveness first, before they start thinking about efficiency, even though nowadays it is commonly done the other way around. After the intangible elements as well as their status has been determined, the right valuation and measurement method has to be found. This process is not a self-contained but a continuous circle. Due to the economic value of intangibles, safeguarding these assets becomes crucial. To protect intellectual capital from obsolescence, companies should invest in their staff and help their employees to develop further. Human capital has a special relevance. In order to give consideration to the importance, human capital management should be part of each company strategy. Research has shown, that the majority of employees is well aware about their assets and what they provide to their companies. On the other hand, companies seem to lack awareness about these assets. In light of the increasing demand for intangibles and the difficulties, companies already face today in regard to find qualified employees with the right set of competencies, this is definitely a development point, organizations need to concentrate on. Understanding the

relevance of intangibles seems to be hindered as there is no complete valuation method to determine the economic value. Within the present paper several already existing methods as well as a new approach towards the topic have been presented. The paper might be used for further research on the subject. All considerations should be done with focus on the future. Changing requirements lead to a higher demand for flexibility - both: of employers as well as employees.

IV Annexe

Annexe 1: Survey English version

Bitte wählen Sie eine Sprache aus. / Veuillez s'il vous plaît choisir une langue. / Please choose a language. / Selezionare una lingua. / Lützen bir dil seçin. / Por favor, seleccione un idioma. / Por favor escolha um idioma. / Kies een taal. / Välj ett språk. / Vennligst velg et språk. / Vælg sprog. / Valitse kieli. / الرجاء اختيار لغة.

☐ Deutsch

☐ English



Survey to complete Master-thesis with the topic: Identification and Measurement of Intangibles in a Knowledge Economy - The special relevance of human capital

0 %

Dear Sir or Madam,

With answering the following survey you are supporting me to complete my Master-thesis about the topic "Identification and Measurement of Intangibles in a Knowledge Economy - The special relevance of human capital".

All information collected will remain anonymous and will only be used for the stated purpose.

If you are interested in the results of the survey, please enter your e-mail address with a corresponding note at the last page of the survey. After evaluation of the results I will send them to you.

Answering the survey will take approximately 10 minutes time.

I thank you very much in advance for your support!

Nadine Allar

Next

Please rate your level of satisfaction within your current job/position.

- ☐ not at all satisfied ☐ partly dissatisfied ☐ partly satisfied ☐ very satisfied

Do you feel challenged within your current job/position?

Please enter the basic tendency.

- ☐ no, not at all
☐ rather no
☐ rather yes
☐ yes, absolutely
☐ I feel frequently unable to cope/overburdened

How satisfied are you with your current superior?

Again it is about the basic tendency.

If you do not have a direct superior, please select 'not applicable'.

- ☐ not at all satisfied
☐ partly dissatisfied
☐ partly satisfied
☐ very satisfied
☐ not applicable

Do you feel appropriately appreciated by your superior?

If you do not have a direct superior, please select 'not applicable'.

- ☐ no, not at all
☐ rather no
☐ rather yes
☐ yes, absolutely
☐ not applicable

Do you know, what is the overall company strategy of your company?

- ☐ yes
☐ no
☐ I have an idea but no real insight into the topic
☐ I don't care

Which parties/stakeholders are involved in the strategy definition of your company?

- ☐ The board of directors/ supervisory board
- ☐ The executive committee/ upper management
- ☐ Department heads of individual divisions like finance, controlling etc.
- ☐ All departments
- ☐ Human Resources department
- ☐ All staff members (potentially indirect e.g. by workshops, surveys etc.)
- ☐ I don't know

Do you perceive that within your company new ideas and suggestions are appreciated and get discussed openly?

Please enter the basic tendency regarding openness for suggestions/ideas within your company.

- ☐ no, not at all
- ☐ rather no
- ☐ rather yes
- ☐ yes, absolutely

Do you think that the offer of training possibilities - directly offered by the company or financed by the company - is satisfying?

- ☐ no, not at all
- ☐ rather no
- ☐ rather yes
- ☐ yes, absolutely

Imagine your company would pay for one additional training for you, which one would you choose?

- ☐ Job-related/vocational/subject-specific training
- ☐ Higher education qualification/higher level of education (e.g. university studies)
- ☐ Training with focus on company management/ business administration
- ☐ Executive/management training with focus on people management
- ☐ Training in 'soft skills' (e.g. teamwork, time management, presentation skills etc.)
- ☐ Communication training
- ☐ Training with focus on legal/ compliance
- ☐ Language course
- ☐ IT course (e.g. Word, Excel, PowerPoint)
- ☐ Other

From your point of view: What do you see as your most important asset which you bring to your company?

Please answer subjectively, it is your opinion which the question is asking for. To answer, you could think about what differs you from others? Why are you important for your company? What is your personal attribute/value/asset which you provide to your company?

Please see below a table of different attributes of an employee.
Please rate these attributes according to their importance/relevance for a company (from YOUR point of view).

Again it is about your personal opinion, what you see as an important asset of an employee to provide to a company.

	not at all important/irrelevant	rather unimportant	rather important	very important
Intellectual capital (knowledge, know-how etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation, dedication, commitment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Educational background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience (current and previous (professional) experience)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance, accomplishment of tasks (as per position description)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical, subject-specific competencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Language skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpersonal competencies (e.g. social competencies, empathy etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliability, sense of responsibility, integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please find below the same table again.

Please now rate, what you think recruiters/companies look for/at what they think is an employee's most important asset.
(Company point of view)

	not at all important/irrelevant	rather unimportant	rather important	very important
Intellectual capital (knowledge, know-how etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation, dedication, commitment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Educational background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience (current and previous (professional) experience)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance, accomplishment of tasks (as per position description)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical, subject-specific competencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Language skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpersonal competencies (e.g. social competencies, empathy etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliability, sense of responsibility, integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please now rank what you see as YOUR most important asset, you provide to your company.

1 = most important

10 = least important

It is about your personal opinion.

- ⚡ Intellectual capital (knowledge, know-how etc.)
- ⚡ Motivation, dedication, commitment
- ⚡ Educational background
- ⚡ Experience (current and previous (professional) experience)
- ⚡ Performance, accomplishment of tasks (as per position description)
- ⚡ Technical, subject-specific competencies
- ⚡ Language skills
- ⚡ Interpersonal competencies (e.g. social competencies, empathy etc.)
- ⚡ Communication skills
- ⚡ Reliability, sense of responsibility, integrity

Have you been thinking about a job change lately?

- ☐ no, not at all
- ☐ rather no, not concretely
- ☐ rather yes, if there is a good opportunity
- ☐ yes, absolutely, as soon as I get the chance, I will leave

For which reasons would you start thinking about a job change? Please choose the 3 main reasons for you.

Multiple answers possible - please choose the 3 which are the most relevant for you

- ☐ Lack of recognition
- ☐ Lack of development possibilities
- ☐ Expected salary increase with a new employer
- ☐ Expected improvement of work-life-balance
- ☐ Too high pressure, stress, expectations from the company
- ☐ Dissatisfaction with superior
- ☐ Dissatisfaction with colleagues
- ☐ Continuously bad atmosphere within the company
- ☐ Expected economical/financial setback of the current company
- ☐ Bad/insufficient surrounding conditions (long way to commute, frequent traffic jams, infrastructure etc.)
- ☐ Different values (company values vs. own values) / company culture
- ☐ Frequent organisational and/or communication problems
- ☐ Dissatisfaction with upper/company management/
- ☐ Lack of clarity about own role/position, tasks
- ☐ Lack of autonomy
- ☐ Lack of flexibility of the company (organization of working time, short-notice requests)
- ☐ Other

When did you apply for another position the last time?

- ☐ 0-2 months ago
- ☐ 3-6 months ago
- ☐ 7-11 months ago
- ☐ 1-2 years ago
- ☐ 3-5 years ago
- ☐ Longer than 5 years ago

Last time you applied for another position, did you get the job?

- ☐ Yes
- ☐ Yes, but at the end I did not accept the offer
- ☐ No

When did you update your CV/Resume the last time?

- ☐ 0-2 months ago
- ☐ 3-6 months ago
- ☐ 7-11 months ago
- ☐ 1-2 years ago
- ☐ 3-5 years ago
- ☐ Longer than 5 years ago

Please think about your last job interview.

How would you rate the level of difficulty of the job interview?

Very easy Very difficult

Again please think about your last job interview.

Did you have the impression that you have had a fair chance to present yourself (and your competencies)?

- ☐ no, not at all
- ☐ rather no
- ☐ rather yes
- ☐ yes, absolutely

Have you been satisfied with the way, you presented yourself?

- ☐ no, not at all
- ☐ rather no
- ☐ rather yes
- ☐ yes, absolutely

How much time did you spend preparing for your last job interview?

Please specify in minutes.

minutes

Your gender/sex?

- ☐ male
- ☐ female

Your age group?

- ☐ < 25 years ☐ 26 - 32 years ☐ 33 - 40 years ☐ 41 - 49 years ☐ > 50 years

Branch of profession?

- ☐ Banking & financial services, insurance
- ☐ Logistics & transportation
- ☐ Public sector
- ☐ Industry & production
- ☐ Service sector
- ☐ Education, university, training
- ☐ Commerce & Sales
- ☐ Supply
- ☐ Other

Do you currently occupy a managerial position?

- ☐ Yes, with people responsibility
- ☐ Yes, without people responsibility
- ☐ No, but with indirect people responsibility/supervisory function
- ☐ No

Thank you very much for spending your time to complete this survey.
If you have any questions or suggestions, please feel free to leave a comment below.

Best regards,
Nadine Allar

Done

Annexe 2: Survey German version

Umfrage zur Erstellung der Master-Thesis zum Thema: Identification and Measurement of Intangibles in a Knowledge Economy - The special relevance of human capital

0 %

Sehr geehrte Damen und Herren,

Mit der Teilnahme an nachfolgender Umfrage unterstützen Sie mich bei der Erstellung meiner Master-Thesis zum Thema "Identification and Measurement of Intangibles in a Knowledge Economy - The special relevance of human capital".

Die erhobenen Daten werden selbstverständlich absolut anonym behandelt und dienen lediglich dem oben genannten Zweck.

Falls Sie Interesse an den Ergebnissen dieser Umfrage haben, geben Sie bitte Ihre E-Mail Adresse in das dafür vorgesehene Feld am Schluss der Umfrage mit einem entsprechendem Vermerk ein; ich werde Ihnen die Ergebnisse nach der Auswertung gerne zur Verfügung stellen.

Die Beantwortung der Fragen dauert ca. 10 Minuten.

Ich bedanke mich bereits im Voraus recht herzlich für Ihre Hilfe!

Nadine Allar

Weiter

Wie zufrieden sind Sie mit Ihrem derzeitigen Arbeitsplatz?

☐

überaus unzufrieden

☐

eher unzufrieden

☐

eher zufrieden

☐

überaus zufrieden

Fühlen Sie sich in Ihrer aktuellen Position gefordert?

Bitte geben Sie hier die grundsätzliche Tendenz an.

- ☐ überhaupt nicht
- ☐ eher nicht
- ☐ eher ja
- ☐ vollkommen
- ☐ Ich fühle mich regelmäßig überfordert

Wie zufrieden sind Sie mit Ihrem Vorgesetzten?

Hier geht es um die grundsätzliche Tendenz.

Sollten Sie keinen direkten Vorgesetzten haben, wählen Sie bitte die Antwortmöglichkeit 'nicht anwendbar'.

- ☐ überaus unzufrieden
- ☐ eher unzufrieden
- ☐ eher zufrieden
- ☐ überaus zufrieden
- ☐ nicht anwendbar

Fühlen Sie sich von Ihrem Vorgesetzten angemessen wertgeschätzt?

Sollten Sie keinen direkten Vorgesetzten haben, wählen Sie bitte die Antwortmöglichkeit 'nicht anwendbar'.

- ☐ überaus unzufrieden
- ☐ eher unzufrieden
- ☐ eher zufrieden
- ☐ überaus zufrieden
- ☐ nicht anwendbar

Kennen Sie die Unternehmensstrategie Ihres Unternehmens?

- ☐ Ja
- ☐ Nein
- ☐ Ich habe eine Ahnung aber keine tiefer gehende Einsicht in diese Thematik
- ☐ Ist mir egal

Welche Bereiche ("Stakeholder") werden in die Strategiedefinition Ihres Unternehmens aktiv mit eingebunden?

- ☐ Anteilseigner
- ☐ Unternehmensleitung/-führung
- ☐ Abteilungsleiter einzelner Unternehmensbereiche wie z.B. Finanzen, Controlling etc.
- ☐ Sämtliche (Fach-)Abteilungen
- ☐ Personalabteilung
- ☐ Alle Mitarbeiter (eventuell indirekt z.B. durch Arbeitsgruppen Befragungen etc.)
- ☐ Ich weiß es nicht

Werden neue Ideen und Anregungen in Ihrem Unternehmen offen angenommen und diskutiert?

Hier geht es um eine generelle Tendenz innerhalb des Unternehmens hinsichtlich der Offenheit gegenüber neuen Vorschlägen.

- ☐ überhaupt nicht
- ☐ eher nicht
- ☐ eher ja
- ☐ vollkommen

Stehen genügend Angebote zur Schulung und Weiterbildung bereit, die entweder direkt vom Unternehmen angeboten werden oder die das Unternehmen bereit wäre, zu finanzieren?

- ☐ überhaupt nicht
- ☐ eher nicht
- ☐ eher ja
- ☐ vollkommen

Angenommen Ihr Unternehmen würde Ihnen eine Weiterbildung Ihrer Wahl finanzieren, für welche würden Sie sich entscheiden?

- ☐ Fachspezifische Weiterbildung
- ☐ Höherer Bildungsabschluss
- ☐ Weiterbildung im Bereich Unternehmensführung
- ☐ Führungskräfteseminar/Personalmanagement
- ☐ Training im Bereich 'soft skills' (Soft Skills umfassen persönliche, soziale und methodische Kompetenzen wie z.B. Teamfähigkeit, Zeitmanagement, Präsentationsfähigkeit etc.)
- ☐ Kommunikationstraining
- ☐ Training mit Schwerpunkt auf rechtliche Thematik/Compliance
- ☐ Sprachkurs
- ☐ Informatikkurs (z.B. Word, Excel, PowerPoint)
- ☐ Anderes

Was sehen Sie als Ihren wichtigsten Beitrag an, welchen Sie Ihrem Unternehmen zur Verfügung stellen?

Bei dieser Frage geht es um Ihre ganz persönliche Einschätzung, worin Sie Ihren hauptsächlichen Wert sehen, den Sie Ihrem Unternehmen zur Verfügung stellen. Zur Beantwortung der Frage können Sie eventuell auch überlegen, was Sie von anderen unterscheidet. Warum sind Sie für Ihr Unternehmen von besonderer Bedeutung?

Nachfolgend aufgelistet sehen Sie eine Tabelle mit verschiedenen Beiträgen/Attributen eines Arbeitnehmers. Bitte ordnen Sie diesen ihre entsprechende Wichtigkeit/Relevanz für ein Unternehmen zu (aus IHRER SICHT).

Hierbei geht es um Ihre völlig subjektive Einschätzung, was Sie als den wichtigsten Beitrag eines Arbeitnehmers für einen Arbeitgeber sehen.

	unwichtig/irrelevant	eher unwichtig	eher wichtig	sehr wichtig
Intellektuelles Kapital (Wissen, Know-How etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation, Engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schulische/Universitäre Bildung, Ausbildung	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Erfahrung (im derzeitigen Beruf sowie vorherige Berufserfahrung)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Arbeits-)Leistung, Performance, Aufgabenerfüllung (gemäß Anweisung)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fachspezifische Kompetenzen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sprachkenntnisse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpersonelle Kompetenzen (soziale Kompetenz, Empathie, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kommunikationsfähigkeit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verlässlichkeit, Verantwortungsbewusstsein, Integrität	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Nachfolgend sehen Sie wiederum eine Tabelle mit den Attributen eines Arbeitnehmers.

Nehmen Sie dieses Mal eine Einschätzung vor, was aus SIGHT DES UNTERNEHMENS voraussichtlich die wichtigsten Eigenschaften eines Arbeitnehmers sind.

	unwichtig/irrelevant	eher unwichtig	eher wichtig	sehr wichtig
Intellektuelles Kapital (Wissen, Know-How etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation, Engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schulische/Universitäre Bildung, Ausbildung	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Erfahrung (im derzeitigen Beruf sowie vorherige Berufserfahrung)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Arbeits-)Leistung, Performance, Aufgabenerfüllung (gemäß Anweisung)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fachspezifische Kompetenzen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sprachkenntnisse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpersonelle Kompetenzen (soziale Kompetenz, Empathie, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kommunikationsfähigkeit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verlässlichkeit, Verantwortungsbewusstsein, Integrität	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Bitte erstellen Sie nun eine Rangfolge, was Sie als IHREN wichtigsten Beitrag sehen, den Sie Ihrem Unternehmen zur Verfügung stellen.

1 = am wichtigsten

10 = am wenigsten wichtig

Hierbei geht es um Ihre persönliche Einschätzung

- ⚡ Intellektuelles Kapital (Wissen, Know-How etc.)
- ⚡ Motivation, Engagement
- ⚡ Schulische/Universitäre Bildung, Ausbildung
- ⚡ Erfahrung (im derzeitigen Beruf sowie vorherige Berufserfahrung)
- ⚡ (Arbeits-)Leistung, Performance, Aufgabenerfüllung (gemäß Anweisung)
- ⚡ Fachspezifische Kompetenzen
- ⚡ Sprachkenntnisse
- ⚡ Interpersonelle Kompetenzen (soziale Kompetenz, Empathie, etc.)
- ⚡ Kommunikationsfähigkeit
- ⚡ Verlässlichkeit, Verantwortungsbewusstsein, Integrität

Denken Sie oder haben Sie in der letzten Zeit über einen Arbeitsplatzwechsel nachgedacht?

- ☐ Nein, ein Arbeitsplatzwechsel käme für mich momentan überhaupt nicht in Frage
- ☐ Noch nicht konkret
- ☐ Ja, ich wäre durchaus offen, wenn sich eine gute Gelegenheit ergibt
- ☐ Auf jeden Fall, bei der nächsten passenden Gelegenheit bin ich weg

Aus welchen Gründen würden Sie einen Arbeitgeberwechsel in Betracht ziehen? Bitte wählen Sie die 3 Hauptgründe aus, die für Sie in Frage kämen.

Mehrfachauswahl möglich - bitte die 3 für Sie relevantesten Gründe auswählen

- ☐ Mangelnde Wertschätzung
- ☐ Keine ausreichenden Entwicklungsperspektiven
- ☐ Zu erwartende Gehaltssteigerungen bei einem neuen Arbeitgeber
- ☐ Zu erwartende Verbesserung der Work-Life-Balance (Verhältnis Beruf zu Freizeit)
- ☐ Zu hohe Erwartungshaltung/Druck/Stress in der derzeitigen Position
- ☐ Unzufriedenheit mit dem Vorgesetzten
- ☐ Unzufriedenheit mit den Arbeitskollegen
- ☐ Anhaltende schlechte Atmosphäre/Stimmung im Unternehmen/am Arbeitsplatz
- ☐ Absehbare Verschlechterung der wirtschaftlichen/finanziellen Situation des Unternehmens
- ☐ Mangelhafte Rahmenbedingungen (lange An- und Abreisezeiten, Stau, Infrastruktur, etc.)
- ☐ Unterschiedliche/divergierende Wertvorstellungen zwischen mir und dem Unternehmen (Unternehmenskultur)
- ☐ Andauernde Organisations- und/oder Kommunikationsprobleme innerhalb des Unternehmens
- ☐ Unzufriedenheit mit der Unternehmensleitung/ -Führung
- ☐ Unklarheiten über eigene Rolle/Position, Aufgaben
- ☐ Zu wenig Freiraum/Autonomie (Mikromanagement)
- ☐ Mangelnde Flexibilität seitens des Arbeitgebers (Arbeitszeitgestaltung, kurzfristige Anfragen, etc.)
- ☐ Anderes

Wie lange ist es her, dass Sie sich zum letzten Mal um eine neue Stelle beworben haben?

- ☐ Vor 0-2 Monaten
- ☐ Vor 3-6 Monaten
- ☐ Vor 7-11 Monaten
- ☐ Vor 1-2 Jahren
- ☐ Vor 3-5 Jahren
- ☐ Vor mehr als 5 Jahren

Als Sie sich das letzte Mal um eine neue Stelle beworben haben, haben Sie diese bekommen?

- ☐ Ja
- ☐ Ja aber ich habe die Stelle dann letztendlich doch nicht angenommen
- ☐ Nein

Wann haben Sie zum letzten Mal Ihren Lebenslauf aktualisiert?

- ☐ Vor 0-2 Monaten
- ☐ Vor 3-6 Monaten
- ☐ Vor 7-11 Monaten
- ☐ Vor 1-2 Jahren
- ☐ Vor 3-5 Jahren
- ☐ Vor mehr als 5 Jahren

Bitte denken Sie an Ihr letztes Vorstellungsgespräch zurück.

Wie schätzen Sie den Schwierigkeitsgrad des Vorstellungsgespräches ein?

Sehr einfach Sehr schwer

Bitte denken Sie erneut an Ihr letztes Vorstellungsgespräch zurück.

Hatten Sie das Gefühl, dass Sie eine faire Chance erhalten haben sich und Ihre Fähigkeiten/Kompetenzen zu präsentieren?

- ☐ Überhaupt nicht
- ☐ eher nicht
- ☐ eher ja
- ☐ Vollkommen

Sind Sie mit der Art und Weise, wie Sie sich in Ihrem letzten Vorstellungsgespräch präsentiert/vorgestellt haben, zufrieden?

- ☐ Überhaupt nicht
- ☐ Eher nicht
- ☐ Eher ja
- ☐ Vollkommen

Wie viel Zeit haben Sie ungefähr verwendet, um sich auf Ihr letztes Vorstellungsgespräch vorzubereiten?

Angabe in Minuten

Minuten

Welchem Geschlecht gehören Sie an?

- ☐ männlich
- ☐ weiblich

Welcher Altersstufe gehören Sie an?

- ☐ < 25 Jahre ☐ 26 - 32 Jahre ☐ 33 - 40 Jahre ☐ 41 - 49 Jahre ☐ > 50 Jahre

In welcher Branche sind Sie derzeit tätig?

- ☐ Banken- & Finanzdienstleistungen, Versicherung
- ☐ Logistik/Transport
- ☐ Öffentlicher Dienst
- ☐ Industrie & Produktion
- ☐ Dienstleistungssektor
- ☐ Bildung, Universität, Weiterbildung, Lehre
- ☐ Handel & Vertrieb
- ☐ Versorgung
- ☐ Andere

Sind Sie aktuell in einer Führungsposition?

- ☐ Ja, mit Personalverantwortung
- ☐ Ja, ohne Personalverantwortung
- ☐ Nein aber mit indirekter Personalverantwortung/Weisungbefugnis
- ☐ Nein

Umfrage zur Erstellung der Master-Thesis zum Thema: Identification and Measurement of Intangibles in a Knowledge Economy - The special relevance of human capital

96 %

Vielen Dank, dass Sie sich die Zeit genommen haben, an meiner Umfrage teilzunehmen.
Falls Sie Fragen oder Anregungen haben, können Sie mir diese gerne untenstehend zukommen lassen.

Mit besten Grüßen,
Nadine Allar

Fertig

Annexe 3: Additional results of the survey

Question 10: From your point of view: What do you see as your most important asset which you bring to your company?

Number of responses: 125

- Organisation
- Wissen
- Engagement, Know How
- vernetztes Denken, Zusammenhänge verstehen, Integrität, Loyalität
- neue innovative Ideen und Herangehensweisen;
- hohes Maß an Flexibilität;
- Teamspirit;
- Sprachkenntnisse;
- Kompetente Kundenberatung. Gute Verkaufsquote.
- spezialwissen
- A combination of legal knowledge and soft skills, mediation approach
- special intuition for connecting people to achieve a common goal and look in places no one else looks to gather information
- impact on people to go further and develop their full potential
- always balancing importance of a task and importance of the people involved
- seeing the bigger picture and repercussions of decisions in the long term

- My experience and my global knowledge of the company, i am not an expert in any domain.
- Erfahrung und Teamfähigkeit
- flexibel und bereit, Überstunden zu machen, Teamzusammenhalt
- Zuverlaessigkeit, Fleiss, Pflichtbewusstsein, Wertschaetzung des Arbeitsplatzes und des Arbeitgebers
- The knowledge of the company and the experience in the field are in my eyes a big asset. However, this could also be a backfire in some aspects. My experience of running my own business on top of my actual career was a real eye opener in regards to customer relationship and customer service. This is definitively an experience I could transcribe into my day to day activities.
- Special knowledge and experience.
- Ich bin Ansprechpartner in einem Teilbereich eines Projektes und führe das Projekt mit meinem Einsatz und Führungsverantwortung ans Ziel
- Erfahrung
- Flexibilität sowie berufliche Qualifikation, Selbständigkeit, Motivation
- flexibility, adaptability, dedication, accountability, solution driven
- knowhow
- skill and graduation
- Weil ich Unternehmens orientiert arbeite und immer versuche das beste für mein Unternehmen raus zu schlagen sodass das Unternehmen immer gut darsteht.
- Anwendung der Inhalte eines betriebswirtschaftlichen Studiums im Betrieb
- Fachkenntnisse, Teamfähigkeit
- meine Arbeitskraft
- kann ich nichts zu sagen
- durch meine langjährige Erfahrung
- Mein Know-How und meine Zeit
- schnelle Auffassungsgabe, sehr strukturiertes Arbeiten und Führen, flexibel und anpassungsfähig im sich schnell verändernden Umfeld, offene Kommunikation mit den Kollegen / Mitarbeitern, Erkennen und Fördern der Stärken der Mitarbeiter
- Die Umsetzung/ Realisierung max. Gewinn zu erzielen zu dem kosteingeringsten Einsatz.
- Fachwissen, Sozialkompetenz, Teamfähigkeit
- langjährige Erfahrung in verschiedenen Bereichen
- My most important asset is my ability to learn and adapt quickly and to coordinate with many and various stakeholders.
- schnelle Auffassungsgabe, Lernfähigkeit, Fachwissen
- Fachliches Know how verbunden mit einem hohen Maß an Zuverlässigkeit.
- Gutes Kenntnis von meiner Arbeit, Erfahrung, Hilfsbereit ...
- zuverlässige Arbeitskraft
- wegen der Fachkenntnis und der Berufserfahrung
- Determination to bring the most efficient solutions for the company and the people working for it
- Die langjährige fachliche Erfahrung, die man an neue Kollegen weitergeben könnte.

- Weil ich mich mit meinem Arbeitgeber sehr zufrieden bin und daher meine ganze Arbeitskraft zur Verfügung stelle.
- I try to communicate as openly as possible with my team in order to avoid misunderstandings and preserve a certain transparency.
- Employees should not get the feeling that they are sidelined, but part of the team and that their ideas and suggestions are always welcome.
- Flexibilität und Arbeitseinsatz in allen anfallenden Fachbereichen. Verständnis für Planänderungen der Disposition.
- Ich sehe mich selbst von besonderer Bedeutung, da ich jung und kreativ aber auch zielstrebig und kompetent bin. Mit unserer Haupt-Zielgruppe kann ich mich identifizieren und diese daher besser einschätzen als andere.
- positive Einstellung bei Erledigung aller Aufgaben
- Engagement, Hohe Lern- und Leistungsbereitschaft, Gutes und breites Fachwissen, Über den Tellerrand denken
- Don't ask what your company can do for you, ask, what you can do for your company!
- Ich bin durch meine langjährige Berufserfahrung und mein breites Fachwissen für mein Unternehmen besonders wichtig. Verschiedene Abteilungen bitten mich gerne um eine neutrale Einschätzung der Dinge.
- Hoher Individualisierungsgrad, der auf die jeweiligen Bedürfnisse des jeweiligen Kunden angepasst wird.
- Fach-Kompetenz, Belastbarkeit
- Hohes Maß an Einsatz und Loyalität
- Einsatz und Wille Dinge im Sinne des Unternehmens umzusetzen.
- jung, arbeitswillig, strebsam, organisiert, engagiert
- Umgang mit vielfältigen Problemen der Mitarbeiter, Erfahrung im Umgang mit der inländischen Gesetzgebung
- fachliche / persönliche Weiterentwicklung im Einklang mit den Zielen / Aufgaben des Unternehmens
- Zuverlässigkeit
- Freundlichkeit
- gute Teamfähigkeit/verständnis
- Durch Kompetenz, Fachwissen und Hilfsbereitschaft den MA und Kunden weiterhelfen und dadurch die allg. Zufriedenheit steigern.
- Ausbildung / Erfahrung
- Immer meine Aufgaben zu erledigen & nie krank zu sein.
- Pflichtbewusstsein & Bewältigung von hohem Arbeitsaufkommen in relativ kurzer Zeit
- Diligence and perseverance
- Mein Engagement, Gewissenhaftigkeit, Team-Denken, ständiges Reflektieren, ständige Optimierung
- Flexibilität
- Erfahrung
- I guess it's a mixture of knowledge, skills and creativity.

- I think I bring structure and organization to the department.
- Erfahrung und kompetenz, Wertschätzung und Leistung in der Ausbildung der Auszubildenden
- zuverlässig
- wenige Krankheitstage
- lange Betriebszugehörigkeit und dementsprechend umfangreiches Wissen
- Zielstrebigkeit, Zuverlässigkeit, Pünktlichkeit, wenig o. gar keine Krankheitstage, Teamfähigkeit
- Unser Team arbeitet super zusammen und wir ergänzen uns perfekt.
- dedication
- Dedication, Accuracy, Follow Up, Management skills, Organization skills, Multi-lingual, Cultural sensitivity, Project Management skills
- Company minded, positive, striving for improvement, open for change.
- My flexibility and dedication to CV.
- Erfahrung, fachliche Kenntnisse
- Motiviert, Ambitioniert => geb mich nicht nur mit dem zufrieden was ich machen soll sondern versuche immer noch darüber hinaus mir mehr wissen/erfahrung zu sammeln.
- Die Bereitschaft sich mit jedem anstehenden Thema intensiv auseinander zu setzen und Lösungsvorschläge aufzuzeigen; Loyalität
- Das Einbringen meiner technischen Kenntnisse, dient sehr zur Zufriedenstellung unserer Kunden und unseren anderen europäischen Filialen.
- Fach und Führungskompetenz.
- Situationselastisch
- Fachliche Kompetenz, Loyalität, Lösungsorientiert, proaktiv und fortlaufend auf der Suche nach Optimierung bestehender Prozesse.
- Reliability, accuracy, team building, positivity, building good relations with our suppliers and customers.
- Identifizierung mit dem Unternehmen
- Pflichtbewusstsein
- Saubere und hochqualitative Arbeit.
- Hohe Bereitschaft, Zuverlässigkeit und Fachkenntnisse in vielen Bereichen
- Fachkompetenz
- Die Bereitstellung meiner Arbeitskraft.
- Problemlösungen die nicht direkt meine eigentliche Aufgabe betreffen.
- Ich hatte eher das Gefühl nicht wichtig für mein Unternehmen zu sein. Dazu kam das man auch regelrecht "kleingehalten" wurde und einem nie alle Informationen übermittelt wurden sonder nur so viel wie ich halt wissen musste. Ich würde eher sagen mir wurde indirekt klargemacht das ich austauschbar bin und jederzeit ersetzt werden könne.
- Bisher nur das Erbringen der verlangten Leistungen.
- Instandhaltung der Maschinen
- 100% arbeiten, Motivation

- Keine besondere Bedeutung. Grundsätzlich einfach eine Nummer und zu hundert Prozent ersetzbar. Nicht aufgrund schlechter Arbeitsleistung, sondern neue Arbeitskräfte sind günstiger.
- Nicht so faul wie andere. Gedanken um Dinge und Verbesserungen machen. Nicht alles egal Einstellung.
- Zuverlässigkeit und Facharbeiter
- Ich bringe mich über alle Maßen in die Firma mit Wissen und Arbeitskraft ein. Dabei werde ich von der Firma sehr unterstützt, so dass mir das auch nicht schwer fällt
- Neue Ideen dem Unternehmen mitteilen und evtl. bei der Durchführung helfen.
- Neue Ideen bzw Verbesserungsvorschläge dem Vorgesetzten mitteilen
- Mir geht's es darum das ich akzeptiert werde und meine Arbeit ordentlich durchführe alle zufrieden sind
- Geistige und körperliche Eigenschaften da es sich um einen Handwerksbetrieb handelt
- Motivation des Mitarbeiters
- Die einbringen persönlicher Erfahrung und fachübergreifender Kompetenzen.
- Wissen Teamfähigkeit
- Fachwissen
- Ich bin Leiterin einer größeren Abteilung und schätze vor allen Dingen den Teamgeist und Zusammenhalt der Mitarbeiter. Das wirkt sich positiv auf die Arbeit aus.
- Diese Frage kann ich nicht beantworten, Als Sozialarbeiter mit festumrissenen Arbeitsgebiet bin ich in erster Linie dem Klient verpflichtet und im Besonderen als neutrale, kostenlose Beratungsstelle interessiert mich die Firma eher nur am Rande.
- The drive to improve the way we work in the dept, constant improvement in our processes to improve productivity, implement new technology, new methods. Curious to learn and try new things. Lately focusing on creating a good atmosphere where people feel valued.
- Kompetenzen, Zertifizierungen, Ideen, Motivation
- Mehrsprachigkeit, Interkulturelle Kompetenz, Offenheit, Teamfähigkeit, Flexibilität
- Unterstützung eines Partners in jeglicher beruflichen Form als seine PA
- Knowledge, Motivation, Belastbarkeit
- Gutes Verhältnis zu denen Kunden
- Sprachliche Kompetenz (deutsch im frankophonen Umfeld), Kulturelle Vielfalt
- Kreative Arbeitsweise und offen für Veränderungen. Treiben dieser Veränderungen mit Hands on Mentalität
- sharpness in identifying customer needs by listening and showing true interest (most important asset in my position as a Sales Manager)
- Pünktlichkeit, positive und offene Einstellung, Selbständigkeit, aktiv bei Neuerungen, fachlich interessiert, teamfähig
- Leadership
- Loyalität und langjährige Erfahrung.
- Sehr gute Fachkenntnisse, Zuverlässlichkeit
- Ich halte es für sehr wichtig, dass ich jeden Tag mit voller Leistungsbereitschaft im Sinne meiner Tätigkeit und auch im Sinne des Unternehmens arbeite. Ich komme nicht zur Arbeit, um meine

Arbeitsaufgaben abzuarbeiten, sondern habe auch ein Interesse daran, wie sich meine Tätigkeiten u. Entscheidungen auf Kollegen und die Organisation als Gesamtes auswirken. Daher denke ich, dass ein besonderer Wert darin liegt, bei seiner Arbeit soweit es geht im Allgemeininteresse (nicht nur im persönlichen) zu handeln.

- hohes Maß an Eigeninitiative, Fleiß, Perfektionismus, Verantwortungsbewusstsein, hohes Maß an Priorisierungsvermögen
- Nachhaltige Kosteneinsparungen zur Stärkung der Wettbewerbsfähigkeit und Aufbau von optimierten/neuen Lieferketten (End-to-End).
- My motivation and the ability to motivate my team
- Knowledge of informatics tool, competence in analyzing the various domains of the company
- Mehrsprachigkeit

19. Please think about your last job interview.
How would you rate the level of difficulty of the job interview?

Anzahl Teilnehmer: 162

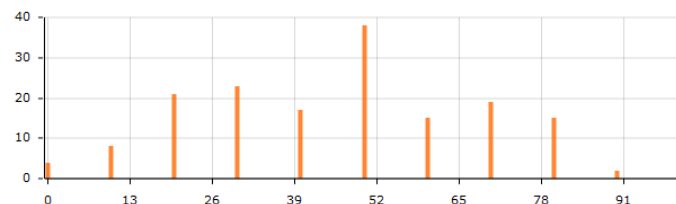
0 = Very easy

100 = Very difficult

Arithmetisches Mittel: 45,56

Mittlere absolute Abweichung: 17,97

Standardabweichung: 21,61



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