

**Virtual organisations as a special cooperation form
in the activity field of Mergers & Acquisitions**

THESIS OF DISSERTATION

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Abstract

This dissertation aims to provide guidance to research and practice in regards to the cooperation form of the virtual organisation and the insight that virtual organisation forms could prove to be a viable alternative to classic and traditional cooperation forms such as mergers, acquisitions, strategic alliances, joint ventures and others in business practice. Although the classic and more traditional cooperation forms are widely known and often discussed in the relevant press, the same does not seem to be true for the cooperation form of the virtual organisation.

The explanation of the emergence and the theoretical foundation of the virtual organisation are mentioned in this dissertation. After that, typical characteristics and chances and risks of the organisation form follow. Empirical studies with business professionals and stock exchange listed companies in Europe prove that the concept of the virtual organisation is not so widely known in the public and in the business praxis as other classic and traditional cooperation forms.

It is shown that on the other hand, many characteristics and aspects of the virtual organisation, as they are described in the relevant business and management theory, can also be found in business praxis and in real life companies. Case studies from modern business praxis will be discussed in order to further highlight the concept of the virtual organisation and its inherent characteristics via real examples from the business world. This dissertation aims to make clear this discrepancy of a lack of public conscious awareness on the one hand and representation of relevant characteristics of virtual companies on the other hand.

The comparison with other forms of cooperation shows that virtual corporations can be clearly distinguished from other forms of cooperation, despite the fact that significant similarities and common grounds can be partially observed. The relevance and the potential of the cooperation type of the virtual organisation can have in the present and in the future is also discussed.

Key words: Virtual organisation, virtual company, virtualisation, cooperation form, collaboration, technology

Abstrakt

Předložená disertace se zaměřuje na poskytnutí návodu k výzkumu a praxi v oblasti spolupráce formou virtuální organizace, a poskytuje podklady k prokázání, že virtuální organizační formy mohou být životaschopnou alternativou ke klasickým a tradičním formám spolupráce jako jsou fúze, akvizice, strategické aliance, joint ventures a další v praxi uplatňované formy. Přestože klasické a tradiční formy spolupráce jsou široce známé a často diskutované v příslušných publikacích, neplatí totéž o spolupráci formou virtuálních organizací.

Disertace vysvětluje vznik a teoretické základy virtuálních organizací. Poté jsou uvedeny typické charakteristiky, a také příležitosti a rizika této organizační formy. Empirické studie manažerů a firem kotovaných na burzách v Evropě prokazují, že koncept virtuálních organizací není mezi odbornou veřejností a v podnikatelské praxi tak rozšířen, jako jiné klasické a tradiční formy spolupráce.

Na druhé straně práce též dokládá, že mnohé charakteristiky a aspekty virtuální organizace popsané v příslušné manažerské literatuře lze nalézt také v podnikatelské praxi a v reálných firmách. Následně jsou diskutovány případové studie z moderní podnikatelské praxe s cílem dále zdůraznit koncept virtuální organizace a jeho přirozené vlastnosti pomocí reálných příkladů z podnikatelského světa. Tato disertační práce si klade za cíl objasnit tento rozdíl spočívající v nedostatečném veřejném povědomí na straně jedné a v zastoupení příslušných charakteristik virtuálních organizací ve firmách na straně druhé.

Srovnání s jinými formami spolupráce ukazuje, že virtuální korporace lze jasně odlišit od jiných forem spolupráce, a to navzdory skutečnosti, že lze pozorovat významné podobnosti a společné základy. V závěru je diskutován význam a potenciál virtuálních organizací v současnosti a v budoucnosti.

Klíčová slova: Virtuální organizace, virtuální firma, virtualizace, formy spolupráce, spolupráce, technologie.

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1 INTRODUCTION

“Progression happens so fast nowadays that while one person is declaring that something is impossible, he will be interrupted by someone who has already realised just that.”

Albert Einstein

“The Networked Virtual Organisation is the most fundamental and significant change in organisational structure we have ever experienced.”

John Chambers, CEO Cisco Systems, 2002

“In 10 to 20 years we will see an explosion of new industries and companies, which will then form ten thousands of virtual organisations.”

John Scully, CEO Apple, 1994

“The whole is more than the sum of its parts.”

Aristotle

“Action may not always bring happiness, but there is no happiness without action.”

Former British Prime Minister Benjamin Disraeli

1.1 About the topic

As a consequence of incremental globalization and the dawning of the information age, various national economies as well as nationally and internationally acting companies are nowadays subject to a permanent processes of change. Many companies are significantly under pressure to adapt to the ever changing environmental requirements in today's world and its constant needs for improvement. Due to the often global competition, they have to constantly increase their efficiency and effectiveness. To achieve these improvements new leadership styles and organisation structures are needed. These recent phenomena of economic development have summarised by Reichwald/Möslein under the three pillars "change in working environment and society", "advancements in information and communication technology" and "change in the market situation and the competitive situation".¹

Few topics have received more attention in the management literature of recent years than that of virtual organisations² and virtual kinds of cooperation inside as well as outside of companies have become increasingly popular objects of study.³ The concept of the "virtual cooperation", "virtual company" or the "virtual organisation" enjoys increasing popularity since Mowshowitz first coined the term in the north- American linguistic area.⁴ The vision of optimizing one company's own operating chain via a collaboration between cooperation partners who each have their own respective specific key-competences, while utilizing information and communication technology in order to succeed in reaching an extremely customer-oriented and competitive economic perfor-

¹ Reichwald/Möslein (2002), p. 3.

² DeSanctis/Monge (1999), p. 1.

³ Cf. Büschken (1999), p.778.

⁴ Cf. Mowshowitz (1986), p.398.

mance is captivating. By combining the increased capacity of larger companies with the adaptability of smaller companies, virtual organisations are intended to react quicker to changing market conditions. In effect a virtual organisation consists of a group of companies, acting as one company to fulfil a need in the market place.⁵

The increase in popularity is also true for a similar group of themes, which have been the object of study of economic scientists in the last decades. Among others there is the lean-discussion⁶, the concept of the fractal fabric⁷, total quality management⁸ or business process reengineering⁹. In the year 1992 two authors, Davidow and Malone, in their book “The virtual corporation“ denominate the virtual corporation as the only possible corporation method surviving for corporations in the future. Due to the success of this publication virtual corporations have also become a part of the popular themes of economic scientists. A similar issue is the discussion about virtual teams working together sometimes over long distances within the structures of a company or across these borders as it might be the case for instance in supply chains or in the course of a close cooperation of suppliers and clients. As companies continue to expand globally, also more and more virtual teams utilizing information and communication technology are formed to accomplish company goals. Another aspect related to the topic is the *cultural diversity* and the *global mindset issue*. In a short time, the terms of global mindset as well of cultural diversity became quite common in an academic discussion focusing the abilities of the global workforce to master global problems affecting their workplace. Global mindset has to be understood as a mix of individual attributes enabling employees on all levels of organisation acting global to whatever extent successfully understanding,

⁵ Cf. Singh/Sharma/Kaur (2011).

⁶ Cf. Womack/Jones/ Roos (1992).

⁷ Cf. Warnecke (1992).

⁸ In relation with lean management of Bösenberg/Metzen (1993).

⁹ Cf. Hammer/Champy (1993).

working together with or, in many cases, influences those who are different from him in all kind of teams and particularly in virtual teams enabling collaboration over continents.

1.2 Thesis outline

Chapter 1 of this thesis gives an overview about the topic and names reasons and origins of recent phenomena of economic development over the years in order to explain the emergence of virtual organisation as well as of virtual forms of collaboration.

Chapter 2 describes the objectives of the present thesis as well as the methodology used to reach them.

Chapter 3 establishes the theoretical foundations of the study through a review of the existent literature in the relevant research streams. After presenting the characteristics making a corporation *virtual*, the relevance of mergers for businesses and acquisitions are discussed as well as the main reasons why they fail frequently. Also the characteristics of collaboration in virtual organisations are investigated. This part will be rounded off by clarifying the question of which inherent chances and risks for companies inevitably result from virtual partnership and collaboration.

Chapter 4 provides the results of the cases studies and surveys studies performed for this thesis and elaborates on the chosen approaches and methods.

Chapter 5 discusses different models in sciences and speculates as to how the different economies will develop in the future.

Chapter 6 discusses the implications of the empirical results for both theory and practice. It includes a discussion of the limitations of this study and suggestions for further research and elaborates on the contributions to theory development, practice and pedagogy of the research.

2 OBJECTIVES AND METHODOLOGY

2.1 Objectives

The emergence of virtual and virtual-like organisational forms represents a fundamental change in our understanding of organisational structures. However, although the term is frequently discussed, there is no single accepted definition of a virtual organisation or virtual corporation.¹⁰ In order to approach this complex field, it is necessary to narrow down the underlying terminology. Due to the fact that the terms, which play an important part in this study are being used in the most diverse contexts and areas, the research first intends to describe the two components “virtual“ and “company“ from the theoretical aspect.

The term “virtual“ is not new in the English language. It has been initially adopted into the English language from the French word “*virtuel(le)*” and means “almost or nearly as described, but not completely or according to strict definition” or rather in the area of physics “denoting particles or interactions with extremely short lifetimes and (owing to the uncertainty principle) indefinitely great energies, postulated as intermediates in some processes.” The root of the word is the Latin word “*virtus*“ = virtue and means approximately “the moral interpretation of the virtuous effort of virility” . Later on it denominated objects that seemed to possess external forces or capabilities: “being such in force or effect, though not actually or expressly such“.

Owing to Davidow/Malone the term has entered the terminology of informatics: “Scientists developed what they called virtual computers, machines quick enough to handle several users sequentially while giving each user the impression of being the only one using the computer. This added the connotations of interaction and adaptability to the

term. Virtual computers seemed to the user to exist at anytime and anyplace when they were needed, which in time led to the phrase virtual reality.”

The “virtual memory“, that is referred to by Savage, is not permanently existent but makes available the necessary processing capacity by overloading and outsourcing single program components. Virtual therefore includes the aspect that even though attributes or functions of an object may appear, the object itself is not present in reality. This aspect is re-examined by Davidow/Malone when they describe virtual products or services: *“The ideal virtual product or service is one that is produced instantaneously and customized in response to customer demand. It mostly exists even before it is produced. Its concept, design, and manufacture are stored in the minds of cooperating teams, in computers and in flexible production lines.”* As an example, Japanese carmakers, which due to their flexible methods of production, are often able to produce and deliver a car to order within 72 hours, are here referred to. Griese makes use of the term in a similar meaning, designating a globally acting company with decentralized locations, that, from the point of view of its clients and suppliers, is rather “virtually” present. In the economic dictionary, a company is defined as an “economically-juridically organized entity, that aims at a sustainable profitable economic performance.“ Depending on the perspective, the concept of what is a company, or what is an enterprise, is seen differently. For example, the use of terms in everyday language often differs from the use in economic science or in juridical science, which aims at looking at an enterprise as a juridical entity. In each case, different delimitations of the terms enterprise and company are the result, terms that in common language are often used as synonyms. Following this definition, in this research companies and organisations will be considered as *economic-juridical entities*.

¹⁰ Cf. Adams/Morris/Scotter (1998).

Virtual organisations are often dynamic collections of individuals, institutions and resources and are often seen in the context of decentralisation, flexibility, simplicity and efficiency.¹¹ The basic vision of a virtual organisation is that a company's innate value chain is optimised by working together with partners with their proper specific core competencies, by making use of information and communication technology and hence arrive at an extremely competitive and customer-oriented service production. By combining the clout of large companies with the agility of small companies, virtual organisation should therefore be able to respond more quickly than traditional companies to changing and increasingly demanding market conditions.

Given the interest in the emerging phenomenon of virtual organisations, it is noteworthy that very little empirical research exists on virtual organisations and articles abound on the possibilities of virtual meetings, work teams, offices, factories, firms and alliances.¹²

While many of these research studies have been published in the context of virtual organisations, studies analysing the actual knowledge about the subject and its applicability in business praxis are very limited. Especially lacking are studies regarding business professionals and stock exchange listed companies in Europe. Business professionals, who work on a daily basis on co-operations, mergers, acquisitions or strategic advice for international and national companies are ideally suited to be questioned in such a study. The knowledge that can be gained from questioning these professionals will be if the researched subject is common practice in business praxis or if it is rather uncommon. The focus on stock listed companies has the advantage that these companies, due to the stock exchange and listing requirements, have to be more transparent vis-à-vis the public, investors and shareholders than private companies and are more likely to respond to

¹¹ Cf. Zou/Zha/Wang/Zhou/Li (2010).

¹² DeSanctis/Monge (1999), p. 1.

such a survey. Furthermore, addressing the investor relations departments suggests that the company deals quickly and efficiently also with these kind of enquiries.

To reach its objectives this research will as a partial goal illustrate this much-discussed form of corporation under theoretic aspects and will then give a holistic overview of the virtual corporation/ virtual organisation from an economic and business-management perspective. It will focus on the emergence of virtual organisation forms, discuss definitions from the theory, explain its characteristics and typology and will highlight its difference to other cooperation forms and opportunities that it creates. Furthermore, assuming that a certain number of companies might have no experience with virtual organisations this thesis takes also a look to other forms of virtual business like virtual teams building in any case the basis of virtual organisation as far as the acting people are concerned. As a further aspect, this research aims to determine how well known virtual organisations are among finance business professionals and also if certain aspects of the virtual organisation, as they are described in the business literature in the first part of the research, can be found in real life business praxis and in the relevant companies. The research performed for this thesis will test if the knowledge of the concept of the virtual organisation is still limited among business professionals and also among companies and its respective professionals.. Also, it will test whether that many characteristics of virtual organisations, as they are described in business literature, can be found within these companies.

Starting from the abovementioned aspects the main objective of this dissertation is to determine how and to what extent the cooperation form of the virtual organisation is represented in actual modern business reality. In other words, this research aims to fill the gap in the existing literature with regard to virtual organisations characteristics and their effects on economic reality in the real business life. Its main objective is *to con-*

tribute by identifying the key determinants of virtual organisations and to compare scholar's theory and businesses' reality. Toward that end, it answers a general question - *what determines virtual organisations in the real business world.*

To reach this objective, this dissertation pursues several partial objectives as follows:

To delineate the specific aspects of virtual organisations as described in the recent literature:

- To investigate other forms of virtual organisational structures such as virtual teams, which do exist in addition to “normal” forms of virtual structures such as virtual companies and organisations
- To investigate what aspects of business operations are subject to virtualisation
- To investigate the specific cultural conditions of the usual virtual collaboration forms
- To investigate the influence of modern communication technology on virtualisation strategies.

2.2 Methodology

2.2.1 Literature review

In order to achieve the objectives stated in the previous chapter of this research, the concept of the virtual organisation will be highlighted from an economical, historical and practical perspective via several methods. The first method to analyse the relevant literature in regards to the cause of emergence for the cooperation form of the virtual organi-

sation will be explained by environmental changes leading to the emergence of virtual company structures. Furthermore relevant definitions regarding the concept of the virtual organisation from the business theory will be analysed and the research will then describe the typical characteristics and the typology of the virtual organisation that are mentioned in the business theory and will differentiate virtual organisations from other conventional cooperation forms. Finally, also relevant literature with regard to virtual teams and their form of collaboration, their working conditions and other characteristics will be surveyed.

2.2.2 Case studies

Case studies from modern business praxis will be discussed in order to further highlight the concept of the virtual organisation and its inherent characteristics via real examples from the business world. Despite of this limitations of acceptance case studies are widely used in organisational studies and across the social sciences, and there is some suggestion that the case study method is increasingly being used and with a growing confidence in the case study as a rigorous research strategy in its own right.¹³ The authors suggest that case studies have become "*one of the most common ways to do qualitative inquiry*".¹⁴ However, there have also been traditional prejudices against case study strategy in such a way that case studies have been viewed as a less desirable form of inquiry for instance. According to Yin (2003) however, "*the distinctive need for case studies arises out of the desire to understand complex social phenomena*" because "*the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events*," such as organisational and managerial processes, for example.

¹³ Hartley (2004).

¹⁴ Hartley et al. (2004), p. 435.

In fact, case studies seem to be the preferred strategy when "how or why"¹⁵ questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context. In such a setting, a case study would be an explanatory one. Depending on the type of research question posed, the extent of control an investigator has over actual behavioural events, and the degree of focus on contemporary as opposed to historical events, there are also exploratory and descriptive case studies¹⁶ (Yin et al. 2003).

For the present there were performed several case studies in order to investigate how companies deal with the virtualisation of the business environment in the business reality supposing that there are probably significant differences to business theory. The cases studies therefore served to explore how companies really deal with the topic relevant for this thesis and why they do so. The case studies therefore gave a contribution to the understanding of the relevance of the topic for people doing business instead of solely studying business literature.

2.2.3 Empirical field studies

As a second method, two empirical field studies, one among corporate finance professionals across Europe and one among listed technology companies in Germany, will aim to answer the question in this research if virtual organisations are known in real life business praxis. Also these studies therefore serve to understand how business is done with regard to the virtualisation of the business world in an business environment more and more *going global*.

- ***The first empirical study*** is set among corporate finance business professionals and enquires about the knowledge regarding the virtual organisation among business professionals in the financial industry across Europe. A number of 30

¹⁵ Yin (2009), p. 23.

corporate finance professionals across Europe working within and close to the specialist division of Mergers and Acquisitions within corporate finance have been asked to answer five questions. These individuals were selected because of their proximity to cooperations, mergers, acquisitions or strategic advice for international and national companies and are therefore ideally suited to be questioned in such a study. The individuals were asked via a questionnaire consisting of five questions, which was transmitted to them via e-mail, via telephone or in person. These questions are regarding virtual organisations to test their professional knowledge on this matter. After an analysis of the respective results, a clear understanding of the degree of knowledge and the familiarity with virtual organisations of business professionals in the financial industry can be achieved. The data was then collected and processed on an aggregate basis to analyse the results.

- ***The second empirical study*** in this dissertation is set among stock exchange listed companies in Germany. In especially companies listed in the German technology index, the TecDAX, which tracks the performance of the 30 largest listed German companies from the technology sector. Current research suggests that it will still take some time for true virtual organisations to appear, but that the automotive, information technology/ electronics and telecoms industry, industries which are in fact widely represented in the TecDAX index, are the most likely industries for the emergence of virtual organisation forms.¹⁷As stated above, the TecDAX index, tracks the performance of the 30 largest stock exchange listed companies from the technology sector on the German exchange

¹⁶ Yin (2009).

Deutsche Börse. In terms of order trading turnover and market capitalization the companies rank below those included in the DAX, which is the main index for all listed companies across sectors in Germany.¹⁸ An extensive questionnaire, which can be found in the appendices of this research, consisting of 17 questions tested whether the surveyed companies perceived themselves as a virtual organisation and if they themselves show typical aspects (of inter- and intra-organisational nature) of a virtual cooperation form as it is stated in the relevant business theory described in this dissertation.

Via this field survey among relevant companies, a clear picture about the popularity and knowledge regarding virtual organisations among and within the relevant companies can be determined by analysing statements concerning the self-perception as a virtual company, statements regarding inter-organisational aspects, statements regarding intra-organisational aspects and other results.

2.2.4 Hypotheses

Because of the fact that the term virtual corporation is being used in different contexts and also because it shows significant similarities to a “buzzword“ of management theory, the subjective evaluation of the polled companies as to whether the companies, or rather the employees answering the questionnaire, would consider their respective company subjectively as a virtual company is interesting.

In addition to the research above, distinctive characteristics of a virtual corporation, as they are often found in literature, are being queried and it will be tested if these distinctive characteristics of virtual companies according to theory can be found in the surveyed companies. It will therefore be tested if the surveyed companies show clear at-

¹⁷ Singh/Sharma/Kaur (2011), p. 1.

tributes and characteristics of virtual companies. This information can then be contrasted with the assessment by the employees in regards to their perception as their company to be a virtual company. It will also show to what extent the management concept of the virtual organisation, that was originally envisaged as an appropriate reaction to technical changes and the emergence of new organisational concepts, is in existence today.

The two first hypotheses of this survey are:

- 1. There exists a positive correlation between the self-evaluation as a virtual company and distinctive characteristics of a virtual company (e.g. temporary character of the cooperation, economic dependence on the cooperation partners, use of information and communication technology, orientation on core competences, trust etc.).*
- 2. Particular distinctive characteristics that are theoretically attributed to virtual corporations can be also be found in real life business praxis.*

Hypotheses one and two will be addressed following the addressing of hypotheses three and four in chapter 4.

In addition to the hypotheses above, there will also be a cross-question analysis, an analysis of possible dependencies between particular answers, which will then be statistically tested with the chi square test. The chi square test used in this research is among the most useful and most widely used tests in statistics as it allows to determine whether certain answers in the survey are independent of each other or whether there is a pattern of dependence between them. If there is a dependence, it can be inferred that the two variables have a statistical relationship with each other. In the chi square test, the hypothesis makes a statement concerning how many cases are to be expected in each cate-

¹⁸ Deutsche Börse (2013)

gory if this hypothesis is verified. The chi square test is based on the difference between the observed and the expected values for each category and is defined as follows:

$$\chi^2 = \sum_i \frac{(O_i - E_i)^2}{E_i}$$

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

O_i is the observed number of cases in category i and in case of this research the first set of answers that is to be compared with the second set of answers. E_i is the expected number of cases in category i and in this case the second set of answers that compares to the first. The chi square statistic is obtained by calculating the difference between the observed number of cases and the expected number of cases in each category. This difference is then squared and divided by the expected number of cases in that category. These values are then added for all the categories, and the total is referred to as the chi squared value. A low value of χ^2 is an indicator of independence.

The chi square test will test in this research the following hypotheses:

- 3. *The cooperation of the company and its partners is closer if the time scope of cooperation is longer.***

- 4. *The existence of formal legally reviewed agreements is higher in comparison to informal, verbal agreements is dependent on the geographic and territorial distance of the partners.***

Hypotheses three and four will be addressed in chapter 4 before the addressing of hypotheses one and two.

2.2.5 Test-related characteristics of virtual companies

As already mentioned, virtual corporations might be difficult to examine because of their temporary character. That is why it is important to find companies that at least have a similar structure to a virtual corporation. As mentioned above, such companies should be most likely to be found in the automotive, information technology/ electronics and telecoms industries, as these are the most likely industries for the emergence of virtual organisation forms. These industries are furthermore often characterized by strong growth and a high future development and innovation potential.

Current research also suggests that it will still take some time for true virtual organisations to appear, but that the automotive, Information Technology/ electronics and telecoms industry, industries which are widely represented in the TecDAX index, are the most likely industries for the emergence of virtual organisation forms.¹⁹

Because of their strong growth and the general more dynamic environment in which technology companies usually can be found, flexible structures of virtual corporations should be of advantage as this corporation form offers the possibility to make up for the disadvantage of usual smaller size and scale of younger enterprises. This represents a central advantage of virtual cooperation forms. These kind of companies are often found in Germany in the TecDAX index and due to their less developed business models in comparison to more traditional companies in more mature industries, they often employ younger employees who are as "digital natives" sometimes more familiar with modern information technology, which is necessary for any form of virtual collaboration.

¹⁹ Singh/Sharma/Kaur (2011), p. 1.

2.2.6 Responding Companies

The following section provides a list of the companies that were questioned together with their respective description by the financial community and renowned data service provider Bloomberg²⁰ to allow for a comprehensive understanding of the empirical group.

Company	Sector	Turnover	Mkt Cap as of 31/12/12	Employees
ADVA Optical Networking SE	Communications Technology	€330,1m	€190,3m	1.378
Aixtron SE	Semiconductors	€227,8m	€895,9m	964
BB Biotech AG	Biotechnology	€324,8m	€953,4m	
Bechtle AG	IT-Services	€2.096,8m	€643,7m	5.970
CANCOM SE	IT-Services	€558,1m	€154,2m	2.076
Carl Zeiss Meditec AG	Medical Technology	€861,9m	€1.613,2m	2.460
Dialog Semiconductor PLC	Semiconductors	€602,0m	€871,0m	806
Draegerwerk AG & Co KGaA	Medical Technology	€2.373,5m	€1.263,3m	12.516
Drillisch AG	Wireless Telecommunication	€323,7m	€542,8m	342
Euromicron AG	Communications Technology	€330,0m	€120,9m	1.699
Evotec AG	Biotechnology	€87,3m	€311,3m	637
Freenet AG	Wireless Telecommunication	€3.089,0m	€1.792,9m	3.886
Jenoptik AG	Advanced Industrial Equipment	€585,0m	€422,5m	3.272
Kontron AG	Electronic Components + Hardware	€547,0m	€228,6m	2.208
LPKF L& E AG	Advanced Industrial Equipment	€115,1m	€175,4m	690
Morphosys AG	Biotechnology	€51,9m	€676,9m	421
Nordex SE	Renewable Energies	€1.075,3m	€220,1m	2.536
Pfeiffer Vacuum Tech AG	Advanced Industrial Equipment	€461,3m	€903,6m	2.256
PSI AG	Software	€180,9m	€241,8m	1.559
QIAGEN NV	Biotechnology	€976,2m	€3.252,4m	3.999
QSC AG	Communications Technology	€481,5m	€260,5m	1.485
Sartorius AG	Biotechnology	€845,7m	€1.113,2m	5.491
SMA Solar Technology AG	Renewable Energies	€1.463,4m	€659,6m	5.584
Software AG	Software	€1.047,3m	€2.789,1m	5.419
STRATEC Biomedical AG	Medical Technology	€122,4m	€441,4m	527
Suss Microtec AG	Semiconductors	€163,8m	€161,3m	704
Solarworld AG	Renewable Energies	€606,0m	€117,3m	2.355
United Internet AG	Internet	€2.396,6m	€3.169,6m	6.254
Wirecard AG	IT-Services	€394,6m	€2.086,8m	674
XING AG	Internet	€72,1m	€229,4m	513

FIGURE 1: OVERVIEW OF TECDAX COMPANIES.

Source: Deutsche Boerse (2012).

Adva Optical Networking SE

²⁰ Bloomberg (2013).

Adva Optical Networking SE designs, develops and manufactures optical networking products. The company's products include wave length division multiplexing (WDM) communication systems, high-speed fibre optic converters, EDFA modules, and all-optical switches. ADVA's products are used in high-speed centralised data storage and disaster recovery.

Aixtron SE

Aixtron SE engineers and manufactures metal organic chemical vapour deposition (MOCVD) equipment for the semiconductor industry. The company's customers use its equipment to produce compound semiconductor layer structures for use in LED, laser, solar cell, transistor, telecommunications and other applications. Aixtron markets its products worldwide.

BB Biotech AG

BB Biotech is an investment company. The company invests in biotech companies that operate in areas that include oncology, cardiovascular diseases, infectious diseases and autoimmune diseases.

Bechtle AG

Bechtle AG retails computer and office supplies. The company markets personal computers, workstations, computer peripherals, mobile devices, computer software, computer networking products, presentation equipment, paper, computer consumables, office furniture, and telecommunications equipment. Bechtle sells its products through its catalogue and internet website.

CANCOM AG

Cancom AG is an integrated information technology provider. The company provides IT products and services. CANCOM's products and services include security, network and system solutions, communication, storage, backup and archive services and IT management.

Carl Zeiss Meditec AG

Carl Zeiss Meditec AG provides complete system solutions in the field of medical technology for ophthalmology. The company's products include screening, diagnostic, and therapeutic systems for the treatment of vision defects, cataracts, glaucoma, and retinal disorders. Carl Zeiss Meditec operates worldwide with subsidiaries in the USA and Japan.

Dialog Semiconductor plc

Dialog Semiconductor plc designs and supplies complex analogue and digital (mixed signal) integrated circuits. The company's products are used to convert analogue speech to digital signals that can be transmitted by a mobile telephone, manage power in a mobile phone, transmit pictures, play MP3 audio files, navigate a mobile telephone's menu, and enable wireless devices to communicate.

Draegerwerk AG & Company KGaA

Draegerwerk AG & Company KGaA manufactures medical, safety, and aerospace equipment. The Company produces ventilators, monitoring equipment, transport incubators, anaesthesia machines, surgical lights, ward equipment, home care equipment, sys-

tems for safe breathing in industry, mining and fire fighting, and airplane crew and passenger oxygen systems.

Drillisch AG

Drillisch AG wholesales mobile telephone user equipment and provides mobile telephone services. The company operates T-Mobile, Vodafone-D2, and E-Plus mobile networks.

Euromicron AG

Euromicron AG is a solution provider for communications, transport, data and security networks. The company's network infrastructures integrate voice, video and data transport wirelessly, via copper cable and by means of fiber-optic technologies.

Evotec AG

Evotec AG offers drug research, development, and manufacturing services. The company offers assay development and screening and compound optimization services to pharmaceutical companies. Evotec also develops drugs on its own for out-licensing.

Freenet AG

Freenet AG provides internet and telecommunications services in Germany. The company offers mobile and fixed line telephone, internet access services, information and news services, its own internet catalogue, DINO-Online, e-mail accounts, e-commerce services and set-up of homepages. Through its subsidiary Mobilcom is also the franchiser of the Mobilcom retail shops.

Jenoptik AG

Jenoptik AG is an optoelectronics group that offers optical systems, lasers and material processing. The company also provides industrial metrology, traffic solutions, and defence & civil systems services.

Kontron AG

Kontron AG develops, produces and markets embedded computer boards. The company provides its products to original equipment manufacturers, systems integrators and other end-users in high-tech industries such as telecommunications, industrial automation, mobile computing and the Internet.

LPKF Laser & Electronics AG

LPKF Laser & Electronics develops systems and process solutions for demanding tasks in printed circuit board technology and microelectronics. The company develops and distributes systems used in electronics production, the automotive industry and in the manufacture of solar cells.

MorphoSys AG

MorphoSys AG is a biotechnology company. The company uses proprietary technology to develop human antibodies tailored to treat specific diseases. MorphoSys is developing medicines to treat cancer and inflammation.

Nordex SE

Nordex SE develops, produces, installs and maintains electricity-generating wind turbines. the company also designs and produces blades and control systems.

Pfeiffer Vacuum Technology AG

Pfeiffer Vacuum Technology AG designs, manufactures and services pumps. The company produces turbo molecular vacuum pumps, rotary vane pumps, root pumps, customized vacuum systems, helium leak detection systems, gas analyzers, and mass spectrometers and markets and services its products in Europe, the United States, and Asia.

PSI AG

PSI AG fuer Produkte und Systeme der Informationstechnologie develops computer software. The company produces software that helps manage large networks used in the electricity, gas, oil, telecommunications, and public transportation industries, production management for the steel, chemicals and automobile industries and mechanical engineering and information management.

QIAGEN N.V.

Qiagen N.V. provides sample and assay technologies. The company's technologies (in the format of consumables and automated solutions) are used to process biological samples and to analyze analytes contained therein, such as DNA and RNA. Qiagen provides these technologies to customers conducting molecular diagnostics, applied testing, pharmaceutical R&D and academic research.

QSC AG

QSC AG offers small and mid-size enterprises a range of information and communication technology (ICT) services from telephony, data transfer, housing and hosting right through to IT outsourcing and IT consulting. The company offers its services on the basis of its own Next Generation Networks (NGN) and operates an open access platform, which unites a range of broadband technologies.

Sartorius AG

Sartorius AG manufactures and markets precision electronic equipment and components. The company produces precision scales for laboratory and industrial uses and electrochemistry. Sartorius manufactures equipment for biomolecular and microbial separations, cell culture, concentration, fermentation and purification.

SMA Solar Technology AG

SMA Solar Technology AG manufactures solar inverters, alternating current converters for solar generated electricity.

Software AG

Software AG provides business infrastructure software solutions. The company's products include solutions for managing data, enabling Service-Oriented Architecture (SOA) and improving business processes.

Solarworld AG

Solarworld AG develops and produces solar technologies. The company produces silicon wafers and manufactures solar cells and complete solar modules and components

used to generate solar energy. Solarworld also recycles silicon and by-products from solar wafer production.

Stratec Biomedical AG

Stratec Biomedical AG develops, manufactures and markets automated equipment and systems for the analysis of chemical and biological compounds. The company's systems are used primarily for the analysis of blood and other fluids and include luminometers, fluorometers and pipette systems. Stratec markets its products worldwide.

Suess MicroTec AG

Suess MicroTec AG manufactures fabrication and inspection equipment for the production of microelectronic components and devices. The company's products include spin coaters, mask and bond aligners, test systems and flip chip bonders. Suess Microtec markets its products to the mobile telecommunications and automobile industries all over the world.

United Internet AG

United Internet AG offers Internet access services. The company serves home users, small offices and home offices and small-to medium-sized companies. United Internet also offers hotline and help desk services to international corporations.

Wirecard AG

Wirecard AG offers Internet payment and processing services. The company provides software and systems for online payment, electronic funds transfer, fraud protection and enterprise solutions. Wirecard also offers call center services.

Xing AG

Xing AG provides an online community for professional networking. The company's website allows business professionals to search for business contacts in multiple languages.

2.2.7 Performance of the Survey

Addressed respondents

Because of the multitude of polled companies, the format of a standardized questionnaire in written form together with the format of a structured telephone inquiry was chosen. Because of the fact that returns of questionnaires are usually very low in industrial inquiries²¹ practical aspects in design and form of the questionnaire were put forward.²² That is why as a media the written questionnaire sent by e-mail was used. As a contact person in the respective company, the head of the Investor Relations or public relations department was identified via the homepage of the various companies. These persons were chosen, as due to their function within the firm they should be informed about most areas of the company and they should also have a higher degree of willingness to respond to incoming queries.

²¹ Cf. Berekoven/Eckert/Ellenrieder (1991), p. 104 deem returns of written inquiries of 15%-40% as normal.

²² Announcement letter, letter and questionnaire can be found in the Appendix.

Form of the questionnaire

As previously mentioned in the objectives of this dissertation, the questionnaire of the empirical study aimed to evaluate if the selected listed companies perceive themselves as a “virtual organisation” and if they themselves show typical aspects (of inter- and intra-organisational nature) of a virtual cooperation form as it is stated in the relevant business theory described before. The detailed structure of the questionnaire can be found in the appendices of this research. The questionnaire is divided into four different sections:

Self-perception as virtual company

The initial question creates interest by mentioning the management “buzzword“ “virtual company” and at the same time also takes on the function as an “icebreaker” question. Therefore the first question detects the subjective evaluation of the interviewee in regard to the classification of its own company as a virtual company.

Apart from this self-assessment question, questions have been divided into the following blocks. The number of the respective question(s) of the questionnaire that the characteristic relates to has been added in parentheses.

Topic Inter-organisational aspects of virtual corporations according to Byrne (1993):

- Closeness of the cooperation (question 2)
- Economic dependence on the cooperation partners (question 3)
- Use of information and communication technology between the cooperation partners (questions 4 and 6)
- Temporary character of the cooperation (question 5)

-
- Recommendation of cooperation partners by third parties (question 7)
 - Orientation on core competences within the cooperation (question 8)
 - Relationship of trust and juridical coverage (questions 9 and 10)
 - Spatial distance to the cooperation partners (question 11)

Topic intra-organisational aspect

Intra-organisational aspects especially concerning the internal importance of information and communication technology:

- The use of information and communication technology in internal communication (question 12)
- Share of telework (question 13)
- Share of revenue realized with e-commerce (question 14)

Further aspects:

- Company success (questions 15 and 16)
- Position of the respondent within the company (question 17)

The measures taken to increase the response rate, like the use of plain e-mail as well as the shortness and the easy comprehension of the questionnaire, had a positive impact on the response rate and in contrast to the low response rates at other research studies,²³ the response rate, surprisingly was on the total 70% (21 out of 30) and therefore can be seen as representative for the population. The often cited reason for a general non-participation in questionnaires and the heavy burden with questionnaires of all kinds,

²³ Cf. Berekoven/Eckert/Ellenrieder (1991), p. 104 deem returns of written inquiries of 15%-40% as normal.

were given as a reason for not responding by the non-participating companies in a short letter of refusal.

3 SURVEY OF LITERATURE

3.1 Emergence of virtual organisation forms

As a consequence of the ongoing globalization, the dynamics of the international markets, the increasing competitive pressure and the emergence of the modern information age, the different national economies and especially the herein based international companies are subject to a permanent and ongoing organisational change process. Also economics and the economic environment in industrial nations have dramatically changed in the last decade. Companies have to adapt and react to a new set of rules in the economy. The subsequent diagram illustrates the reasons for this need of reorientation for international companies:

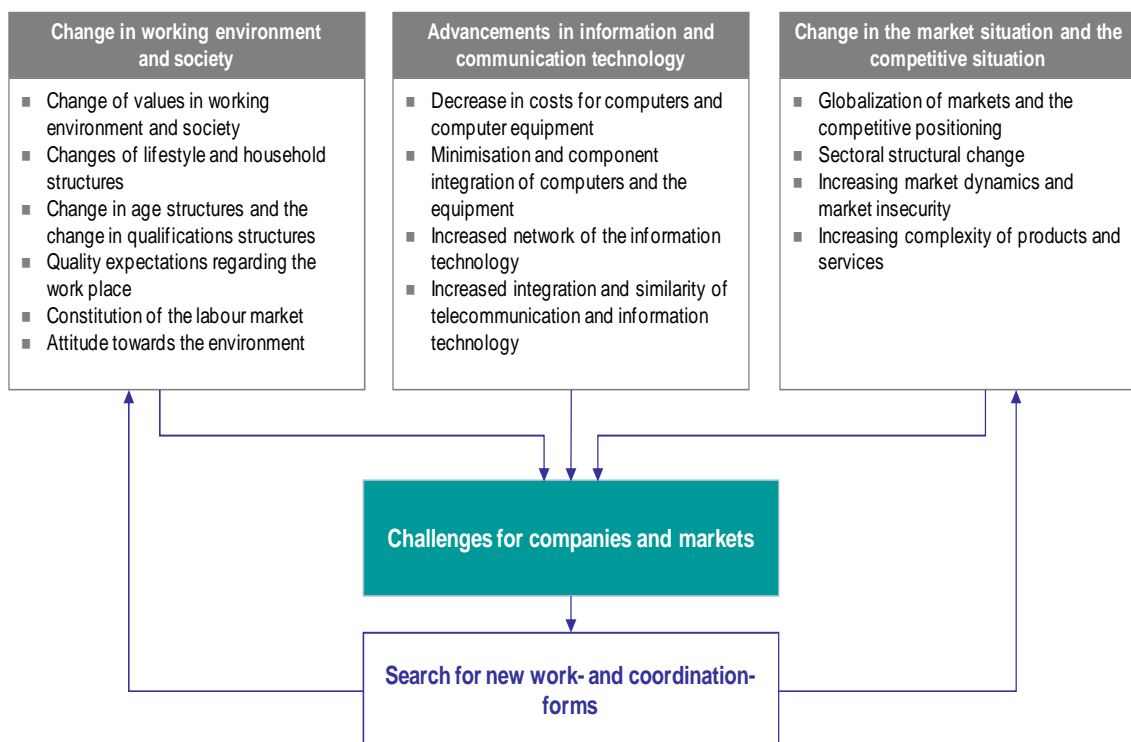


FIGURE 2: NEW CHALLENGES FOR COMPANIES.

Source: According to Reichwald/Möslein (2002), p. 3.

The *left pillar* of the figure shown above summarizes the “Change in working environment and society”.

- The first point which constitutes this change is the change of values in working environment and society, meaning the trend that company employees are more and more focussed on their career and that the working environment has become more and more competitive because of increased competition between employees and higher pressure on the companies itself.
- The second point notifies about the changes of lifestyle and household structures that have taken place in the last years. In Western Europe for example, it used to be normal that in an average family, the husband would go to work, while the wife would have the role of the housewife taking care of the children and the household. In today’s society in Europe many women do not identify themselves anymore with the role of the housewife and are focused on their own career, making the job market more competitive due to increased competition and a rising number of job applicants.
- The third point recognizes the change in age structures within a company and the change in qualification structures. While some time ago it would have been possible to be promoted based on seniority, employees do nowadays face increased competition and have to qualify for upper management positions rather than receiving them due to their time spent at the respective company.

-
- The fourth point includes the quality expectations regarding the work place. While before it was accepted that certain positions within a company could entail a negative effect on health or security of the employees, modern society does not accept such negligence anymore and companies in industrialized countries are forced to comply with international standards that guarantee that all employees are not exposed to such risks anymore.
 - The fifth point represents the constitution of the labour market which is highly linked to the prevalent dominating economic environment a company operates in. The recent economic crisis shows that a bad economic environment can have serious effects on companies in all fields and therefore affect the labour market in an absolute and integral way.
 - The last change factor in this group represents the attitude towards the environment that has changed significantly over the last years. When in former times, people in industrialized countries did not care about climate change or the harm done to the environment, many companies are now forced to comply with increasingly strict rules regarding sustainability and environmental issues. Increasingly so, also customers do care about the production background of products and can punish companies severely with a boycott of their respective products when they feel that a company is doing harm to the environment. This factor also might be one reason for the increase of virtual forms of collaboration by new forms of communication because employees are forced to travel less as it would be necessary within the traditional forms of collaboration.

The *middle pillar* gives an overview of the advancements that have been made in modern information and communication technology encouraging the building of virtual organisations as the implementation of virtual team structures in companies:

- The first factor is about the decrease in costs of computers and computer equipment that make it nowadays possible for many people to take part in the modern information age when some time ago when computers were invented access to a computer was a strong privilege that only a few people had access to.
- The second factor includes minimisation and component integration of computers and the respective equipment. While before computers were so large that they used to fill a whole room, today's computers become smaller and smaller and can be easily transported and accessed nearly everywhere.
- The third factor recognizes the still increasing network of the information technology. Information technology has become so essential that similar only to telephone and electrical energy it is now so important that utility firms have to provide networks of information and communication technology to everyone in industrialized countries.
- The last factor within this pillar represents the increased integration and similarity of telecommunication and information technology, as can be seen in services like Skype, a proprietary voice-over-Internet Protocol (VoIP) service and software application that allow to make calls or video conferences via the Internet making pure telephone services to some extent redundant.

The *third pillar* represents the change in the market situation and the competitive situation.

- The first factor recognizes *globalization* of markets and the competitive positioning. While before national markets used to be more or less local, it is now the case that companies today do not only have to cope with the national competition but also with international competitors from all over the world. Particularly the opening and continuing emergence of China and India as competitors on the global markets and the subsequent competitive pressure from companies especially out of the Asian region, but also from Eastern Europe on the cost side has lead to significantly more competition especially for companies in industrialized regions like Western Europe and the USA.
- The second factor is about the sectorial and structural change that has taken place. This change is illustrated by the fact that in industrialized countries there is a clear movement from pure manufacturing to more sophisticated types of work and services that require a more and more educated workforce, putting again increased pressure on employees.
- The third factor represents the increasing market dynamics and market insecurity. This factors show trough shortening product and innovation cycles that make it more and more difficult for companies to always stay “on top” of recent developments and not to be overtaken by competitors.

-
- The last factor of the third column indicates the increasing complexity of products and services that make more and more sophisticated research and development necessary that can usually only be provided by big and strong players in the respective market, which can afford to sustain such research and development.

Researchers like Jane Klobas and Paul Jackson in their publication “Becoming virtual” explain the change process in a similar way:

“The past two decades have seen a growing diversity of organisational form as organisations use new technologies to reconfigure work, distributing it more than ever across distant locations, different time zones and even diverse organisations. Companies have been able to place their staff with customers. Production and service work can be moved to low cost countries or people’s homes, or subcontracted to more qualified firms or individuals. Teams of empowered and motivated specialists can be drawn from around the world, using information and communications technologies (ICT) to communicate and share knowledge. A shirt can be designed in Italy, made in China and sold in Australia”²⁴.

The abovementioned change processes often lead to organisational change at the companies. Management within the companies frequently decides that they need to change the set-up of the company if they want to stay competitive and often contemplate organisational changes like mergers, acquisitions, divestures, joint-ventures, strategic alliances and other forms of cooperation.

²⁴ Klobas/Jackson (2007), p. 1.

As companies continue to expand globally, also more and more virtual organisational forms as for instance virtual teams utilizing information and communication technology as the most important means of collaboration are established to accomplish company goals. Virtual teams require additional capacities and skills from their members given that virtual teams provide unique characteristics and related management challenges²⁵. Selected literature published since 1996 was examined to produce a reference guide for project managers. Six global virtual collaboration characteristics are identified: geographic dispersal; structural flexibility; technology-based communications; cultural diversity; high task interdependence; and lack of shared work experience. Its responsibilities include creating innovative solutions and coordinating various networks²⁶ and its distinguishing characteristics include the following:

- Geographic dispersion and multinational composition²⁷
- Cross-functional involvement²⁸
- The involvement of several hierarchical levels²⁹
- Full- and part-time membership³⁰
- Parallel existence with other organisational forms³¹
- A boundary-spanning role³²
- Integration in the organisation's structures³³

²⁵ Sadowski-Rasters et al. (2006).

²⁶ Galbraith 2001; Montgomery & Yip, (2000).

²⁷ Harvey et al., (2003).

²⁸ Montgomery & Yip, (2000).

²⁹ Galbraith 2001.

³⁰ Kempeners & van den Hart, (1999).

³¹ Arnold et al., 1(999).

³² Harvey et al., (2003).

³³ Kempeners & van den Hart, (1999).

3.2 Mergers and Acquisitions

3.2.1 The term mergers and acquisitions

The field of Mergers & Acquisitions (abbreviated M&A) claims a substantial part of corporate practice and is one of the most prominent and prestigious fields in corporate finance and investment banking. The ongoing and even accelerating globalization and the continued internationalization of the economies lead to ever greater concentrations of companies at the national and international levels. *Investopedia*, an online dictionary devoted to investing education defines Mergers & Acquisitions as follows:

*“A general term used to refer to the consolidation of companies. A merger is a combination of two companies to form a new company, while an acquisition is the purchase of one company by another in which no new company is formed.”*³⁴

Mergers & Acquisitions continue to be one of the most important techniques for international companies to adapt to the ever faster changing market environment in the global competitive and economic environment. Since it is certain that any company’s competitors use M&A for gaining financial advantages and strategic benefits, it is vital for the majority of large companies to consider M&A on their corporate agenda.³⁵ It can be observed that, over the past decade, M&A generally occurred in waves. Golbe and White in their research paper “Catch a wave: The time series behaviour of mergers” were among the first to empirically observe the cyclical pattern of M&A activity. According to a definition provided by the United Nations the term M & A includes only

³⁴ Investopedia (2013)

³⁵ Cf. Bruner (2004), p. 56.

purchases and sales of assets (acquisitions) and mergers (mergers)³⁶. But apart from this very narrow understanding of the concept, there has been in theory as well as in practice an emergence to widen the term M&A to include also other manifestations. The following graph, that illustrates M&A in the context of an exemplary lifecycle of a company from its foundation until its liquidation, gives an overview of the core activities and further areas of M & A.³⁷

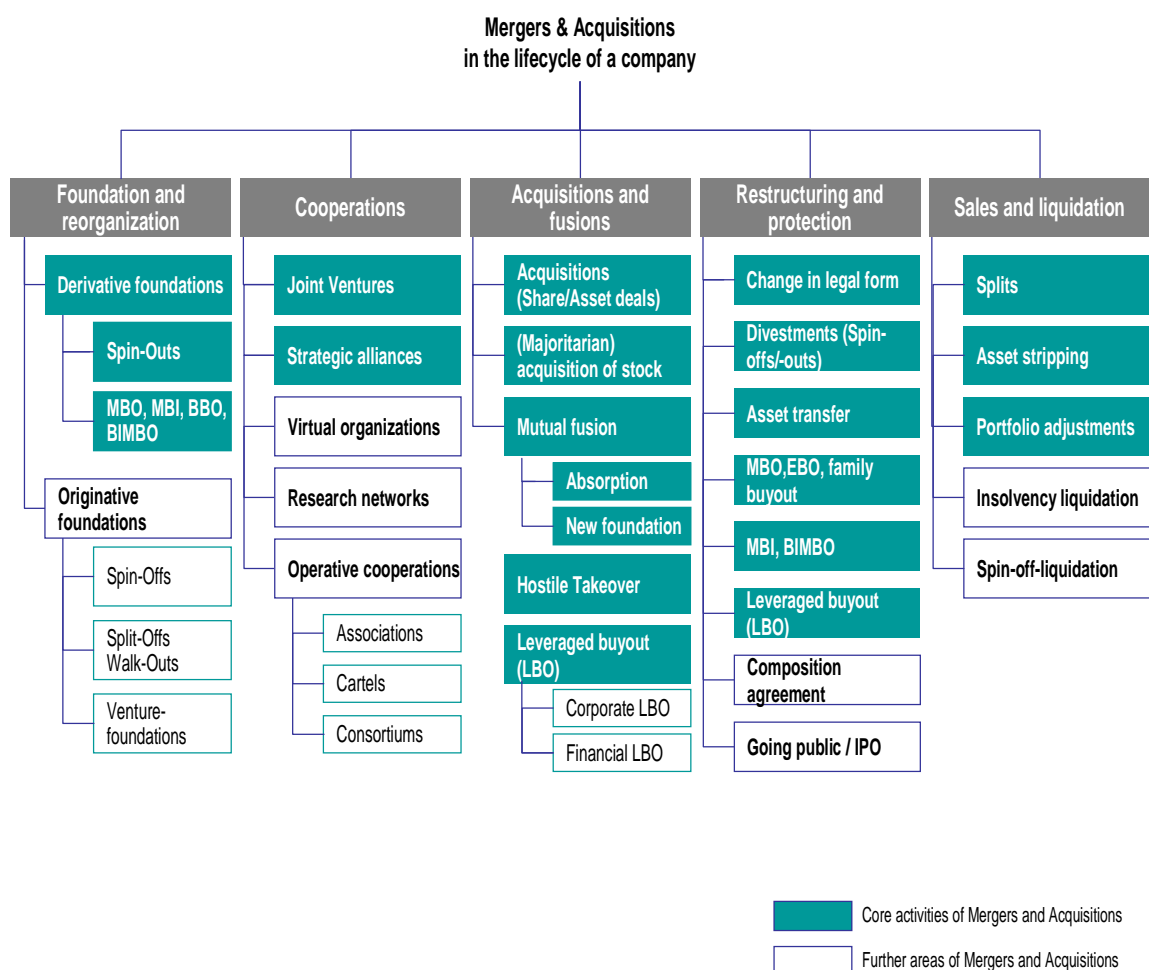


FIGURE 3: OVERVIEW OF CORE ACTIVITIES AND OTHER AREAS OF MERGERS & ACQUISITIONS (M&A)

Source: According to Jansen (2001), p. 46.

³⁶ Cf. United Nations (2000), p. 100.

³⁷ Cf. Jansen (2001), p. 46.

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- The lifecycle of a company starts with the foundation of the company, which can entail other derivative foundations or even a spin-off, meaning the creation of an independent company through the sale or distribution of new shares of an existing business/division from another parent company.
 - The second pillar is about cooperation forms that a company can envisage after its foundation. Jansen (2001) has put the concept of the virtual organisation here next to other more well-known cooperation forms such as joint ventures, strategic alliances and research networks³⁸.
 - The next pillar in a lifecycle of a company then includes acquisitions and fusions that can entail aspects like hostile takeovers or even Leveraged Buy Outs, meaning the acquisition by a financial buyer via a high percentage of leverage.
 - The next pillar represents restructuring and protecting the continued existence of the company. This can entail a change of the legal form of the company or an Initial Public Offering (IPO), which is the initial sale of the shares of the company on the public equity markets.
 - The last pillar of this model finally is the sale or liquidation, which can entail splits, portfolio divestments or asset striping, meaning selling the assets of a business individually.

3.2.2 The risks of mergers

M&A transactions are widely discussed and closely followed in the media and usually considered highly relevant and interesting by the general public. As a consequence these cooperation forms have often been and still are subject to profound research in the field of business and management literature. By far not all M&A transactions are successful and difficulties in the integration processes are often responsible for the economic failure and the non-realization of previously set expectations. Potential causes for failure can lie in financial, fiscal, production-related or in legal topics. But also the "soft" factors in a merger can be of critical importance, as the integration of two companies can only succeed if it is accepted, approved, supported and promoted by the respective employees of the involved companies. According to a recent study by Eversheds, one of the world's largest corporate law firms, many companies undergoing mergers & acquisitions are jeopardising their growth prospects by giving "little or no focus" to the fundamental principles of post-merger life.

Eversheds (2012) report into M&A activity surveys 400 multi-national businesses from 41 countries, which have done at least one cross-border M&A deal worth over \$100m in the past three years. Nearly half (43 %) of surveyed companies blamed the failure to address "post-deal integration" when preparing the deal as the most common reason for deals not successfully achieving their goals. Robin Johnson, M&A partner at Eversheds, said: "*Businesses need to start joining the dots between the different stages of the deal*

³⁸ Jansen (2002).

cycle to move the focus from just simply 'doing the deal' to thinking about life for the business beyond the deal."³⁹

*Mergers fail more often than marriages*⁴⁰ - and if they fail probably mostly for the same reasons. Launched often in order to cope of the risk of increasing cost of raw materials and as reaction of an ongoing demand for higher profitability⁴¹ mergers often are made under a substantial pressure of time and speed to meet some of the mentioned challenges. The *DaimlerChrysler* try is a good example for the truth of these statements and maybe an even better example for the problems of the *clash of cultures*. According to Hofstede *culture* consists of "unwritten rules of the social game. It is the collective programming of the human mind that distinguishes the members of one human group from those of another. Culture in this sense is a system of collectively held values".⁴² In general, culture is seen as a social structure defining communication styles, behavior and decision-making. *Culture* covers the relationship between various dimensions and can be viewed as a shared solution to problems of external adaptation and internal integration.⁴³

Managing solutions regarding problems of cultural adaption after a merger need in general primarily the awareness that there *is* a problem caused by the confrontation of different organisational culture and the awareness of all the elements that have to be taken in account looking for solutions⁴⁴. Managing solutions include assumptions regarding the importance of relationship over task achievement, relationships with superiors and

³⁹ Cf. Eversheds (2012)

⁴⁰ According to various empirical studies, about 50% up to 70% of all mergers fail; see Cameron & Green (2009)

⁴¹ Jackson and Schuler (2001)

⁴² Hofstede et al. (2005).

subordinates, individualism and collectivism (Schneider & Barsoux 2003). So, simply, they have to take into account the *human factor*. In a recent definition *culture* is described as follows:

“Culture consists of patterns, explicit and implicit of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artefacts: the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action; on the other, as conditioning elements of future action”⁴⁵.

Cross cultural mergers developed during the last two decades also due to globalization process and became a frequent strategic option for organisations to enhance products range, accessing new markets and attaining new technologies. Mergers, however, as mentioned above fail more often than marriages often due to insufficient preparation and adaption of the organisations of both companies. Launched often in order to cope the risk of increasing cost and as reaction of an ongoing demand for higher profitability mergers often are made under a substantial pressure of time and speed to meet some of the mentioned challenges and without the necessary preparation and necessary merger management even if it is obvious that in this situation a wide range of problems have to be solved. As a prime example of a merger that failed to realize the wished-for synergies and was all the time it lasted far from producing value to the stakeholders of the compa-

⁴³ Hofstede et al. (2010).

⁴⁴ Janssens (1995)

⁴⁵ Steers, et al. (2010: 21).

nies involved often the DaimlerChrysler case is cited in recent literature.⁴⁶ At the time the deal was negotiated it was unequalled in the global car industry and therefore probably so promising in respect to its potential to made the two companies to the global leader in the business by becoming one company that nobody obviously was considering the extent of the problems linked to the merger. The typical risks of cross-border Mergers, however, lying amongst others in different organisational cultures, languages and leadership styles also at this time were yet well known and subject to research in Europe as well as in the US. Chrysler was said to be one the most efficient producing companies of the market serving perfectly the taste of the American client at this time. According to some analysts the company at the end of last century even was considered the world's most profitable car manufacturer. The idea to combine the strengths of both worlds - Daimler's German perfection and Chrysler's American effectiveness - was necessarily a tempting idea; and the hope to be able to face the coming challenges of the global car market together was it too⁴⁷.

Some years later the difference of cultures, style, management philosophies and not least the different managing behaviour led to the failure of the merger costing large amounts of money to the company. After some more years of bad business for both sides expressed particularly in dramatic losses of the Company's shares Daimler and losses of Chrysler reportedly reaching \$1.5 billion in 2006 and the announcement of plans to fire 13,000 Chrysler employees in February 2007 in August the DaimlerChrysler AG finally sold Chrysler to the Cerberus Group taking over an 80.1 percent share in the new Chrysler Holding LLC. Immediately after this long - expected development, the German Daimler AG reported profits in its fourth-quarter results for 2007. The good results this

⁴⁶ Bouwman (2012).

quarter and particularly the increase of the value of Daimler shares after selling the Chrysler division and cutting jobs at Mercedes-Benz Cars were understood also as proof that investors never accepted the deal.⁴⁸ Chrysler meanwhile is part from another European company, *Fiat*, who different to Daimler never declared the intention to negotiate a "*merger of equals*" but just bought the Chrysler Company in order to integrate the former proud American carmaker in its portfolio.⁴⁹ (Migloire 2009). The real amount of money Daimler lost with its try of a transatlantic merger remains unclear.⁵⁰ But today it is considered to be clear that the Chrysler Company lost almost everything by this merger today being subject to the decisions of *Fiat*, contrary to the Daimler AG probably one of Europe's *weakest* carmakers.

Analysts during the 1998 negotiation period felt that, from a *strategic* point of view, the merger of the Mercedes-Benz AG and The Chrysler Company made good *business sense*; as mentioned above this was, from the economic point of view probably true and subject to investigations of the market by the executives of both companies supposing that maybe Daimler wanted the *takeover* from the very beginning but never wanted to lose a lot of money, share value and reputation. What they did probably not consider to a sufficient scale was that they also had to merge their completely different *organisational cultures* in order to benefit through synergy effects that result from joining their complementary portfolios and strengths. Using for example shared distribution channels, draw on shared technologies and generally taking advantage of the gathered knowledge requires close cooperation of *humans*. For this reason, since years the specific aspects of culture in companies are focused. The importance and influence of corporate culture

⁴⁷ Grube (2006).

⁴⁸ Bouwman (2012).

⁴⁹ Migloire (2009).

was subjects to a huge amount of definitions and concepts⁵¹; and it might be assumed that for virtual forms of collaboration the match of cultures might be even more important because there is no physical contact of the members of the organisation respective the members of virtual teams.

3.3 Globalization as driver of new forms of collaboration

Under the catchword “globalization” it is nowadays understood a phenomenon that results from the possibilities of the digital information and communication technologies.⁵² Thanks to new communication networks today, basically every company is able to enter into markets that in the past were difficult or impossible for the respective company to gain access to.⁵³ Due to the globalization of the world economy that threatens more and more to offset the boundaries of national states, it became possible to facilitate transferring capital flows between countries and continents. The deregulation and liberalisation, that have been obtained via the foundation of the WTO (World Trade Organisation) have lead to the situation, that there is practically no sector or industry that is able to evade from the resulting problems. The WTO itself is an organisation that deals with the global rules of trade between nations and its main function is to ensure that trade flows as smoothly, predictably and freely as possible.⁵⁴ As a consequence nearly all world markets are being contested by global competition. The reason for this is that companies irrespective from their origin have been enabled to construct their production sites all over the world and by doing so, are able to utilize the respective locational advantages

⁵⁰ Bouwman (2012).

⁵¹ Cf. Schein (2003).

⁵² Cf. Mayer/Kram/Patkos (1998), p. 8.

⁵³ Cf. Picot/Reichwald/Wigand (1998), p. 2.

and resources. Doing so, they often use *virtual teams* with members from their own and / or other organisations.

Citing Richard Tilly, emeritus professor of economic and social history at the University of Münster (Westfälische Wilhelms-Universität Münster, WWU) in Germany:

*“Globalization is the increasing international integration of goods-, capital- and labour markets. This is a direct consequence of the growing international mobility of products and production factors, at least indirectly sustained by the technological change and the changes of governmental economic policy”.*⁵⁵

Looking at economic theory, the concept of the virtual organisation is very interesting as similar to a merger, it should help to bring fixed and variable costs down, while in contrast to a traditional merger the participating companies remain legally independent and do only appear as one entity to the outside. In virtual organisations legally independent companies align together for the accomplishment of a special task or a project for a certain period of time in order to fulfil an assignment that they have been given by a client. During the fulfilment of the task, they appear to the client as one company. After the task has been carried out, they dissolve the network again and continue as legally independent companies until another project or task is taken on that requires the cooperation with other companies through a virtual organisation, as it cannot be resolved by one company alone and independently. In 2006, Samuel J. Palmisano, CEO of IBM stated that state borders define less and less the boundaries of corporate thinking of practice.⁵⁶

⁵⁴ Cf. World Trade Organisation (2012)

⁵⁵ Tilly (1999), p. 2.

⁵⁶ Palmisano (2006).

According to Palmisano, the multinational corporation, often seen as an early agent of globalization, is taking on a new form promising for business as well as for society. From a business perspective, this new kind of enterprise is best understood as "global" rather than "multinational".⁵⁷ Multinational acting means, according for instance to Palmisano that multinational companies could no longer "succeed as a collection of country-based business units reporting into a single headquarters" ⁵⁸(Palmisano 2006) but that a global acting company should "fashion its strategy, its management, and its operations in pursuit of a new goal: the integration of production and value delivery worldwide. Capital as well as "the best and brightest managers and technicians" would be more and more found wherever in the world. Also a range of economists believes virtual organisations to be capable of becoming the dominating organisation form of the 21st century.⁵⁹ The reasons for this are diverse. The worldwide economies have been significantly marked by three phenomena of economic development since the turn of the millennium: globalization, dynamization of the markets and the ongoing trend towards outsourcing.

In spite of the fact that, thanks to the elimination of physical and official boundaries in regards to national states for example in Europe, as well as in terms of spatial and temporal matters, the possibilities of the economic actors have been vastly expanded, also the economic spectrum has become much more unclear and less secure. Due to this complex and uncertain interrelationship new ways of thinking and working have emerged; virtual forms of collaboration being one of them. One step further goes the concept of the "global born company". From today's literature point of view "a true

⁵⁷ Palmisano (2006).

⁵⁸ Palmisano (2006).

⁵⁹ Cf. Davidow/Malone (1992), p. 14 ff.

born-global firm is a new venture that acts to satisfy a global niche from day one".⁶⁰ Apart from this understanding, numerous other definitions of born-global firms have been proposed⁶¹. Research on born-global firms aims to clarify how these companies satisfy the needs of customers in a global niche, how they define their market position and their approach to grow in their niche⁶². Companies going global early in their life cycle are also referred to as "global startups"⁶³.

3.4 Information technology as driver of virtualisation

After scientists have initially disputed over the progressive information and communication technology, for years, also in practice this form of company cooperation is establishing itself.⁶⁴ There is no doubt from today's point of view that the increasing dynamic of the markets is also decisively induced by the use of modern information- and communication technology. To support communication, technology such as e-mail is often used to facilitate the building, operation and management of the virtual organisation.⁶⁵ The general standardization of data together with the physical transfer of data and their transmission paths make it possible for all market participants to access at all times information and data of all kinds. Trends and information are being diffused much more rapidly and innovation- and product life cycles are being shortened. In the course of this, time becomes a critical success factor.⁶⁶ Values like development- and delivery time, costs, quality as well as flexibility take on new significance on global markets since they

⁶⁰ Tanev (2012).

⁶¹ Jones et al. (2011).

⁶² Cavusgil and Knight, (2009).

⁶³ Jones (2011).

⁶⁴ Cf. Teubner (2001), p. 550, 551.

⁶⁵ Cf. Adams/Morris/Scotter (1998).

⁶⁶ Cf. Kemmer/Gillessen (2000), p. 8.

are target values.⁶⁷ Since electronic commerce referred to as “e-commerce” entered the market, the demand of clients has become particularly evident. This form of electronic trade forces companies to ensure that they reach high adaptation capacities in regards to changing market situations and furthermore forces them to prove their competencies in the exploitation of new business segments and new communication styles.

New trends of electronic communication even reinforce this development. As mentioned above, managers and employees working in virtual teams and / or organisations necessarily rely on modern techniques as communication tool. The idea of virtual teams, however, is driving in a new direction since some years as far as the physical presence is concerned. While virtual teams used to work usually in offices in different countries and continents new devices effect that managers not are in offices at all. It is not clear, but perhaps also not of importance whether the term "Consumerization of IT" used for this phenomenon is a Buzzword or a new, independent development⁶⁸. What is certain is that there is a rapid shift in the way employees are using their private-owned IT - Devices such as tablets, smartphones or laptops in their workplace. Following a meanwhile uniform understanding, IT - consumerization is the blending of personal and business use of technology devices and applications.⁶⁹ The frontiers of innovation in information technology are shifting away from the corporate space into the consumer space with the wide scale adoption of smart mobile-devices, cloud computing, social media, and technologies rooted in consumer offerings.

⁶⁷ Cf. Picot/Reichwald (1994), p. 547, 549.

⁶⁸ Ahluwalia (2012).

⁶⁹ Blount (2012).

Enterprises are facing rapid transformation in their interaction with customers, partners, suppliers, and, most significantly, in ways employees use technologies to do their job⁷⁰. Apart from corresponding legal questions as the safety of data probably also structures from virtual teams will change given that team members work whenever they want and wherever they want. Literature, until now, mostly is focused on how businesses are impacted. The real new trend is, however, how the people working in these companies are impacted⁷¹ the output of literature regarding the Consumerisation of IT has increasingly risen in the past years⁷². As early as in 2004, however, Moschella et.al described "*the consumerisation of information technology*" as a powerful trend, predicting significant changes in the futures business environments, such as lower costs, improved functionality of the workplace surrounding and as driver for more innovation and creativity on workplaces and transformation of traditional infrastructures⁷³.

3.5 The virtual corporation

As discussed above, the concept of the virtual corporation is used in an extremely complex manner. In the following the most important attempts of definitions for virtual corporations will be presented and explained. As mentioned before, this thesis focuses on a special type of cooperation form, the so called virtual organisation that is often not mentioned in this context and is often not found in the relevant research although it is a highly relevant and interesting subject. The organisation form of the virtual organisation represents an extreme form of dissolution of the often rigid company structures. The

⁷⁰ Del Prete (2012).

⁷¹ Clevengar (2012).

⁷² Vogel et al. (2012).

⁷³ Moschella et al. (2004).

concept of the "virtual company" or the "virtual organisation" has first been mentioned in the Anglo-American literature in 1986 by Mowshowitz⁷⁴ and from 1992 to 2000 the subject has subsequently appeared in more than 1300 articles.⁷⁵ The term virtual corporation, however, became increasingly popular also in the last decade; but academic literature unfortunately did not offer much more help in clarifying what is to be understood by *virtual corporation*. Moreover, this lack of clarity has led to inconsistent findings in studies and research and an inconsistent use of the term that meanwhile is used in various situations for various constellations. Also geographically *dispersed teams* of one company or organisation are called virtual organisations or virtual teams⁷⁶ without also called virtual teams (Wong and Burton 2000), as well as network-based organisations⁷⁷, outsourcing organisations or simply Internet- based businesses⁷⁸. As the following overview shows understandings indeed vary widely as to what *virtual* means in connection with an organisation.

3.5.1 The definition of Mowshowitz

Already in 1986 the term "*virtual corporation*" is mentioned for the first time by Mowshowitz.⁷⁹ In his publication "Social Dimensions of office automation" he draws an analogy between the virtual memory of a computer and the so-called "virtual organisation". The analogy is drawn between the logical and the real requirements or resources. The logical requirement speaking in terms of the computer is the use of the memory and it is without importance whether the hardware-RAM or the virtual memory is accessed

⁷⁴ Cf. Mowshowitz (1986), p.398.

⁷⁵ Cf. Wirtz (2000), p. 99.

⁷⁶ Wong and Burton (2000).

⁷⁷ Snow et al. (1999)

⁷⁸ Werther (1999).

to on the hard disk. Even the precise location on the hard disk is without importance. It is a matter here of the differentiation of the logical location (memory function) and physical location (application of the virtual memory on the hard disk). Mowshowitz, who analyses in the first place the social effects of the automation of the office, draws the conclusion that as a result also in the office workplace, while it is true that all logical requirements of abstracting processes can be planned and controlled, they cannot be produced in total independence of the physical location. According to Mowshowitz, a virtual corporation can be recognized while having strict regard in economical efficiency, purchases its logical requirements from the geographical places with the lowest production costs and therefore has reached the independence on space.

3.5.2 The definition of Davidow and Malone

The concept of the virtual corporation was first made the object of scientific discussions due to publications in management literature. Davidow and Malone have been the pioneers, publishing their book “The Virtual Corporation“. The two authors, in this book, use the term “virtual corporation” not referring to Mowshowitz, but they search explicitly a new definition for the new corporation form that they believe has emerged.⁸⁰ According to Davidow and Malone a company becomes a *virtual company*, if it offers a so-called “virtual product“ on the market. This means a product that, with involvement of the customer, can be produced whenever possible directly for the customer.⁸¹ Further on, they do not give a precise definition and only imply that virtual corporations consist of a

⁷⁹ Cf. Mowshowitz (1986), p. 389.

⁸⁰ Cf. Davidow/Malone (1992), p. 14.

⁸¹ Cf. Davidow/Malone (1992), p. 156.

network of companies: *“To the outside observer, it will appear almost edgeless, with permeable and continuously changing interfaces between company, suppliers and customers.”*⁸²

To sum up, Davidow and Malone create a management concept that they believe to be an appropriate reaction to technical changes and the emergence of new organisational concepts. The authors conceive the “virtual” corporation more as a “virtuous” corporation and draw the picture of a corporation that is “virtual” in the sense of the root of the word, which is “virtuous”. A corporation of this kind has inherent powers and is able to activate them. *Byrne* writes aptly about the two authors: *„Indeed, the pair have so broadened the term ‘virtual’ that it virtually means ‘virtuous’”*.⁸³

3.5.3 The definition of Byrne

In 1993, in an article published in the magazine *Business Week*, John Byrne, an economic journalist, defined the virtual cooperation as follows:

“The virtual corporation is a temporary network of independent companies – suppliers, customers, even erstwhile rivals – linked by information technology to share skills, costs, and access to one another’s markets. It will have neither central office nor organisation chart. It will have no hierarchy and no vertical integration. [It] [...] will be fluid and flexible – a group of collaborators that quickly unite to exploit a specific opportuni-

⁸² Davidow/Malone (1992), p. 5.

⁸³ Byrne (1993), p. 4.

ty. *Once the opportunity is met, the venture will, more often than not, disband.*⁸⁴ In addition Byrne writes:

*“In a Virtual Corporation, companies can share costs, skills and access to global markets, with each partner contributing what it’s best at.”*⁸⁵

Most authors of publications on virtual corporations resort at least partially to this definition as it is probably the most read work on this subject. Byrne bends away the perspective from a rather technical concept like the one in the work of Mowshowitz and describes also management concepts similar to Davidow/Malone do. But unlike them, he sees the virtual corporation rather as a temporary alliance, that acts like a project-related entity.

3.5.4 The definition of Mertens/Griese/Ehrenberg

As has become clear by the above mentioned approaches to a definition, it is hardly possible to draw a unitary definition of a virtual corporation from the diverse approaches to a definition in literature. The definition of *Mertens, Griese und Ehrenberg* (1998) is used in this study as a working definition and by doing so will serve as a fundament for the following effectuation in this thesis. It permits to look at and to study virtual corporations. Furthermore, in this definition, the explicit importance of the information and communication technology is carved out. The authors understand the virtual corporation as a form of a *corporation of companies, institutions and/or individuals that are legally*

⁸⁴ Byrne (1993), p. 37.

⁸⁵ Byrne (1993), p.36.

independent, which supply a performance based on a shared understanding of the business. As long as the collaboration lasts, the cooperating entities concentrate mainly on their own core competences and appear to third parties like an unitary company. Doing so, they do largely without the institutionalization of central management functions for designing, guiding and developing the virtual corporation while the need for coordination and synchronization is covered by an appropriate system of information and communication systems. The virtual corporation is linked to a mission and ends at the point where the mission ends.⁸⁶

3.5.5 The Definition of Morgan

Morgan⁸⁷ understands virtual organisations and virtual teams within his definition of *adhocracies* having in common that both forms usually involve *project teams* coming together to perform a task. The term virtual focuses in this understanding on the form of *collaboration*, not the organisational background. Virtual teams are, in this understanding, organisations with specific tasks, functions and structures that pursue to solve specific problems. The main difference between an adhocracy and a virtual organisation is in this understanding that that virtual organisations are spread geographically, use electronic technology and occasional face-to-face meetings to integrate their activities.

⁸⁶ Cf. Mertens/Griese/Ehrenberg (1998), p. 3.

⁸⁷ Morgan (2006).

3.6 Characteristics of virtual corporations

Along with the change of the economic environment, the advantages that virtual corporations demonstrate are the reason for the emergence of cooperation of this type. Even large corporations dissolve their former structures in order to build up internal networks, which then act as autonomous entities.⁸⁸ As a recent abovementioned example the American company International Business Machines Corporation (IBM) announced that they are planning a radical reform in regards to their employees for the close future. In the contemplated scenario by IBM, small teams of core employees would conduct many other temporary employees.⁸⁹ The situation of IBM will be analysed in more detail in the section “*Case studies and view on aspects of virtual corporations in business praxis.*” The following chapter aims to clarify the particularity of virtual corporations compared to conventionally organized companies. Taking a close look at virtual corporations, several characteristics are independent from specific case and, to a certain extent specific understandings of the term.

3.6.1 Temporary character

Due to the increasing dynamic of the markets, many market opportunities arise on a shorter and shorter basis and the time windows to take advantage of these opportunities become tighter and tighter. Contrary to conventional companies, virtual companies form themselves for a limited period of time and with the purpose of a common objective. The collaboration of virtual corporations is categorically temporary and is based on an

⁸⁸ Cf. Kemmer/Gillessen (1997), p. 23.

anticipatory finiteness.⁹⁰ The collaboration of the cooperation partners normally ends once the concrete project they have worked on is concluded. Therefore virtual corporations are “*corporations for a certain period*“ and equate project orientated entities, which will break up after satisfying the respective customer requirement or after the completion of the assignment. Therewith, virtual corporations go through the regular project phases of initiation, agreement, execution and dissolution.⁹¹ Due to the continuous development, disintegration and reconfiguration into new configurations, the adaptability of virtual corporations is guaranteed.

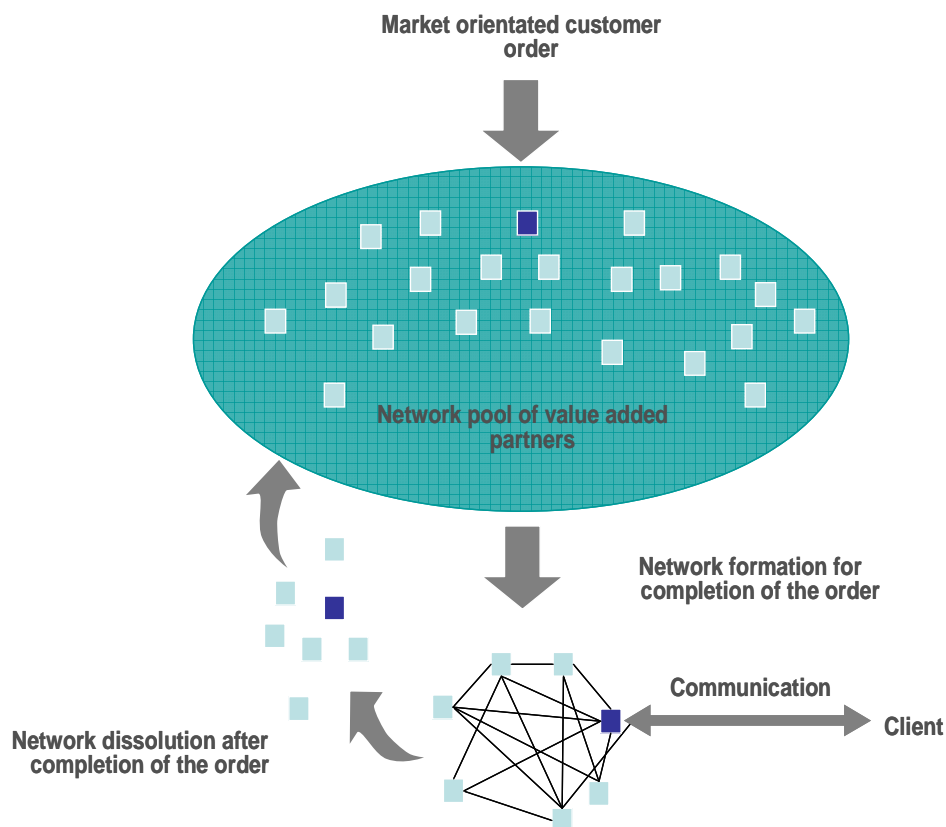


FIGURE 4: DEVELOPMENT AND DISINTEGRATION OF VIRTUAL ORGANISATIONS

Source: According to Damm (2003), p. 68.

⁸⁹ Cf. Der Spiegel (2012), p.62.

⁹⁰ Cf. Aschenbach (2000), p. 17.

⁹¹ Cf. Mertens/Faisst (1995), p. 65 f.

3.6.2 The exploitation of market opportunities

Virtual corporations emerge driven by opportunity, that is to say following an identified customers requirement or a concrete order. In the process, the best suited team forms itself, in order to put into practice an individualized and custom-made problem solution. Thanks to such specific case-by-case configurations of virtual corporations an optimal fit between market requirements and organisational arrangement can be obtained. Market opportunities as well as innovative product ideas, where a exploitation or realization would not have been profitable before can now be developed.

3.6.3 Uniform public appearance

Even though the virtual corporation, dependent from the respective understanding of the term, is according to some definitions discussed above a composition of a multitude of partner companies,⁹² an uniform public appearance⁹³ on the part of the clients is in many cases required. Nowadays, clients increasingly require complete solutions without taking into account which company exactly provides a certain fraction of the overall deal. Thanks to the formation of virtual corporations even single smaller companies, which in reality struggle with limited liquidity, resources and capabilities, are able to change from a pure product seller into a solution provider. In doing so, the network presents itself unified⁹⁴ in public and for reasons of flexibility only a “sharing“ without physical pooling of resources is put into effect. The clients’ advantage in doing so is that he has only one counterparty to deal with.

⁹² Cf. Hofmann (1997), p. 62, 65.

⁹³ Cf. Kemmer/Gillessen (1997), p. 16 f.

⁹⁴ E.g. under a unitary internet (www) address or a unitary corporate identity.

3.6.4 Diffusion of company borders

As a virtual corporation has no property or rights of disposal regulated by contracts as these stay with the participating cooperation partners, it is not possible to draw a clear dividing line between virtual corporations and their respective economic environment. Instead of looking at material factors a demarcation must be made looking at projects or products.⁹⁵ Such vague borders though do not remain stable for a longer period of time, but according to the need to find solutions, clients are integrated in the work-teams and the necessary executives are chosen. As a consequence, virtual corporations represent themselves as entities with permeable and continually changing division lines between enterprise, suppliers and clients. Despite its diffuse nature, a common identity holds the organisation together in the minds of members, customers or other constituents.⁹⁶

3.6.5 Cooperation of multiple companies

In addition to know-how increase and increase in capacity, lower expenses and risk reduction and increase in flexibility, the dominant goal of virtual organisations is the reduction of the “time-to-market”.⁹⁷ On the basis of a collective business model and a potential win-win situation for all participants,⁹⁸ legally independent, economically partly dependent companies unite in a virtual corporation in order to be able to provide required resources and competences jointly in a quick way. Greater switching of tasks, roles or work assignments is also typical in virtual organisations. This allows what Moshowitz calls “combinatorial freedom” or the ability to dynamically allocate work across

⁹⁵ Cf. Linde (1997), p. 20.

⁹⁶ DeSanctis/Monge (1999), p. 1.

⁹⁷ Cf. Scholz (1997), p. 383 f.

people or subgroups depending on workload demands.⁹⁹ Therefore suchlike business associations are ideally suited for instable economical conditions and for dynamic processes of change. Recent research also suggests that an important factor in determining the virtual aspect of an organisation is the devolution of activities to the other organisations and providing services and goods by maintaining cooperation and unity with external organisations.¹⁰⁰

3.6.6 Trust

The low degree of formalisation, which characterizes virtual corporations, serves for maintaining flexibility. An organisation, in order to learn, needs the capabilities that make it able to transfer the knowledge that exists in the organisation and in the environment to the organisation and to make the current and existing knowledge and also the newly created knowledge integrated and then act with this knowledge.¹⁰¹ Instead of explicit rules, juridical instruments such as contracts or specific legal forms, directions and guidance or controls are replaced by trust-based relationships, which function as the major connector between cooperation partners. Because of the fact that a temporal and special limitation of the cooperation with changing partners impedes the emergence of a company-specific culture of trust, it becomes necessary before starting the cooperation, to create trust-building processes in the environment or in the preparation of the virtual collaboration.¹⁰² According to some definitions, the cooperating unities of a virtual

⁹⁸ Cf. Wenitzky/Baumann (1997), p. 7.

⁹⁹ DeSanctis/Monge (1999).

¹⁰⁰ Cf. Tohidi/Jabbari (2011).

¹⁰¹ Cf. Tohidi/Jabbari (2011).

¹⁰² Cf. Reiss (1996b), p. 272, Schuh/Friedli (1999), p. 222.

company generate the required output because of their shared business understanding.¹⁰³ This concept is originally correlated with the conception of the culture of trust in virtual corporations and relates generally to the relationship of trust and contractual control measures among the cooperating units of virtual corporations.¹⁰⁴

The concept of the *shared business model* comprises the product specification (e.g. quality, functionality, form and quantity of products or services), the cooperation specification (e.g. appointments, delivery mechanisms, deployment of personnel and resources, costs, prices and profits) as well as the social behaviour specification (e.g. guarantees of assistance and acceptance, confidentiality towards third parties, punctuality, reliability, interest in the overall result).¹⁰⁵ In this context Scholz (abstractly) speaks of fairness and in doing so means “acting in terms of a partnership.”¹⁰⁶

Should the situation arise that among the cooperation partners or among single cooperating units within a virtual corporation this shared business model emerges or business relations that are based on mutual trust exist, theoretically, business partners can renounce on written and contractual agreements.¹⁰⁷ Therefore, in the event that a virtual corporation largely abstains from contractual arrangements of a set of rules, opportunistic behaviour (that means the pursue of one’s own interest at the cost of third parties) of some market participants has to be approached in a whole new way. Legal security is replaced by the structure of a culture of trust.¹⁰⁸ Already Mertens, Ehrenberg and Griese, following their definition of the virtual organisation quoted above and the therein based

¹⁰³ Cf. Mertens/Griese/Ehrenberg (1998), p. 3.

¹⁰⁴ Cf. Arnold/Faisst/Härtling/Sieber (1995), p.12.

¹⁰⁵ Arnold/Faisst/Härtling/Sieber (1995), p. 12.

¹⁰⁶ Scholz (1997), p. 339.

¹⁰⁷ Cf. Arnold/Faisst/Härtling/Sieber (1995), p. 12.

quality characteristic of “trust“, lay emphasis on the fact that this element of the definition as well as the substitution of contracts with trust is particularly controversial.¹⁰⁹The shift from contractually secured cooperation to a cooperation based on trust between the partners is caused by and partly also justified by the temporary character of virtual corporations.

Prerequisite for the development and the continued existence of a culture of trust, among other things, is however that a breach of trust entails immediate sanctions. Otherwise, trust would be inevitably destroyed.¹¹⁰

3.6.7 Support by IT

The rapid development of information technology makes it generally possible to attain new degrees of freedom when designing business strategies as well as organisation forms¹¹¹; as mentioned above by the ongoing trend of the consumerisation of IT. This freedom reached also the core freedom of employees as to where and when to work and to use the device of their choice. Furthermore, new dimensions of velocity and quality of the exchange of information have been made possible only by the development of the information and communication technology. Such activities, which were considered hardly or only uneconomically synchronisable because of high transportation costs and transportation times, can now be coordinated much more efficiently. Physical distances become less important, as communication with partners that are geographically distant has been simplified via videoconferencing, internet and computer conferencing systems

¹⁰⁸ Cf. Picot/Reichwald/Wigand (2001), p. 410 f.

¹⁰⁹ Cf. Mertens/Griese/Ehrenberg (1998), p. 3.

and the increasing prevalence of the Internet and the World Wide Web is making it possible for geographically dispersed individuals to get engaged in discussions in online and real-time modes globally.¹¹² The result of this development is the generally recognized supporting role that these new technical devices play in virtualizing organisational structures.¹¹³

Klobas and Jackson describe the use of information and communication technology in the following way: “ICT offers distributed organisations the chance to become virtual organisations, organisations that use computer-based networks (in particular the internet) to capitalize on the advantages of actual differences in time zones, locations and contractual relationships between individuals and groups; communications, work processes and organisational culture are as natural in the distributed form as if the organisation were virtually working together in a single location”¹¹⁴.

Mowshowitz, in his paper virtual organisation - toward a theory of societal transformation stimulated by information technology, puts it as follows: “However, the Internet plays a unique role in providing facilities and support for the development of virtual enterprises”. He also mentions that the “realization of virtual organisation in practice is dependent on computer networks, which are made up of computers and information systems linked together by telecommunication facilities” and goes on to say that “such networks provide access to information stored on computers and support the exchange of messages between devices, software, and people”. Furthermore he explains: “With

¹¹⁰ Cf. Schröder (1996), p. 61 ff.

¹¹¹ Cf. Mertens/Faisst (1995), p. 64.

¹¹² Cf. Paul/Samarah/Seetharaman/Mykytyn (2005).

¹¹³ Cf. Sydow (1995), p. 631.

¹¹⁴ Klobas/Jackson (2007), p. 1.

the growth of the Internet, the basic advantages of networking are being extended to everyone. Electronic mail or e-mail and the World Wide Web are almost as familiar as the telephone and the television. Use of the Internet as a venue for commerce is changing the business landscape. Internet-related businesses such as Yahoo and Amazon have experienced explosive growth, and an ever larger segment of the business community subscribes to the belief that the very survival of a company depends on its ability to use the Internet effectively”¹¹⁵.

E-mail is often seen as an appropriate and effective method for communicating within organisations. In virtual organisations, the use of e-mail may be even more widespread because of the geographic dispersion of members.¹¹⁶

3.6.8 Synergetic combination of core competencies

The focusing on core competencies of companies has established itself as a management trend. Any company, however, can only then reach its maximal value creation contribution, when it develops its core competencies and then markets them accordingly. Thanks to a subdivision of the value chain, it is made possible that virtual corporations deliver solely their core competencies in the sense of a “best-of-everything-organisation.”¹¹⁷ In doing so, each company concentrates on those segments of the value chain, which it considers to be its major strength. As an advantage to the client the result is an optimised value chain.

¹¹⁵ Mowshowitz (2002), p.196 ff.

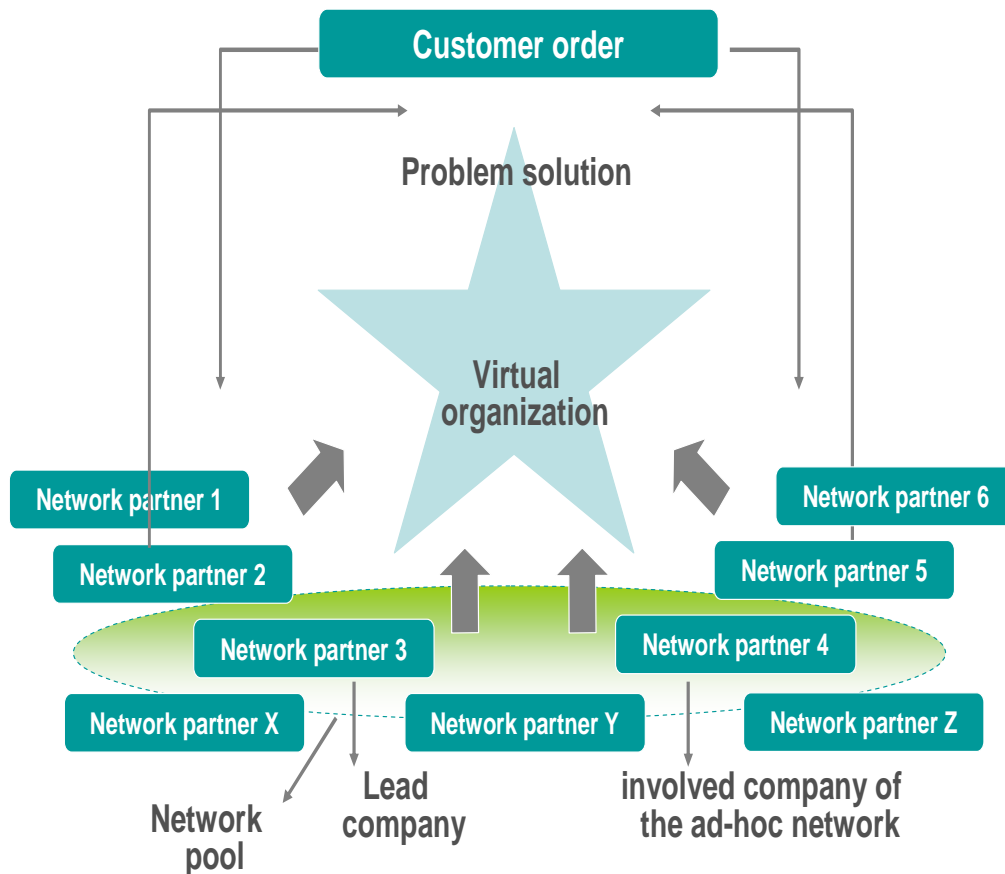


FIGURE 5: PROBLEM SOLUTION IN A VIRTUAL CORPORATION

Source: According to Picot/Reichwald (2001) after Wüthrich/ Philipp/ Frenzt (1997), p. 35.

For the first eight characteristics described in this chapter a general and broad consensus can be found in literature. About the following characteristics of virtual corporations there is not yet a broad consensus among experts.

3.6.9 Renouncement of a central management

By making a complex and cheap transmission of information possible between the various, spatially separated companies thanks to the use of the latest information and com-

¹¹⁶ Cf. Adams/Morris/Scotter (1998).

¹¹⁷ Cf. Byrne (1993), p. 36.

munication technology,¹¹⁸ virtual organisations are able to reduce the significance for central decision making and an expensive administration. By using the respective technique, information can be transmitted decentralized and knowledge distributed also by using peripheral channels can be brought together on a short term basis.¹¹⁹ The information and communication technology is thereby the fabric, which, as a information-technological spine holds together the otherwise autonomous cooperation partners of virtual companies¹²⁰, and is therefore a decisive factor for the success of the corporation.¹²¹

In its ideal-typical form the virtual corporation is a decentralized business association which, thanks to the intensive use of information and communication technology is able to do completely renounce of the institution of physical and juridical entities. A centralization of certain tasks and decisions is however automatically given, when the virtual corporation is being directed by a focal company.

3.6.10 Continuous reconfiguration

The temporary character and the continuous reconfigurations of the constellations are, for a part, the reason for their virtuality. The longer multiple cooperation partners work together in the same constellation, the more real the company appears. Because of this, the question arises whether a distinction is necessary in order to decide whether, next to the opportunistic partnerships, which accomplish temporary tasks, also long term busi-

¹¹⁸ Cf. Hofmann (1996), p. 67.

¹¹⁹ Cf. Mayer/Kram/Patkos (1998), p. 26.

¹²⁰ Cf. Wüthrich/Philipp/Frentz (1997), p. 33.

¹²¹ Cf. Picot/Reichwald (1994), p. 547, 556.

ness associations, whose reconfiguration is tightly connected with the innovation- and product cycle, can also be understood to be virtual corporations.¹²²

3.6.11 Strongly specialized member companies

With the help of a virtual organisation, especially small and medium sized enterprises can act on the market as if they were a large provider, because of the fact that the connection of complementary core skills makes it possible for them to accomplish projects that they could not have realized independently. Especially these small, medium or even one-man businesses can, by doing so, change from being a product seller to being a complete solution provider. But also the large companies benefit from the specialization, the flexibility, the quicker decision making process and the innovation capacity of virtual corporations.¹²³ The following illustration shows in a simplified form a virtual corporation, that consists of four companies with a five-step value chain. The cooperating partners participate here in the value chain, in order to achieve a collective performance, which they could not have been able to achieve if they were on their own. The virtual corporation appears to the client from the outside as a uniform company and appropriate and suitable information- and communication technology help with communication and coordination between the companies and the client.

¹²² Cf. Mertens/Faisst (1995), p. 62.

¹²³ Cf. Scholz (1997), p. 19.

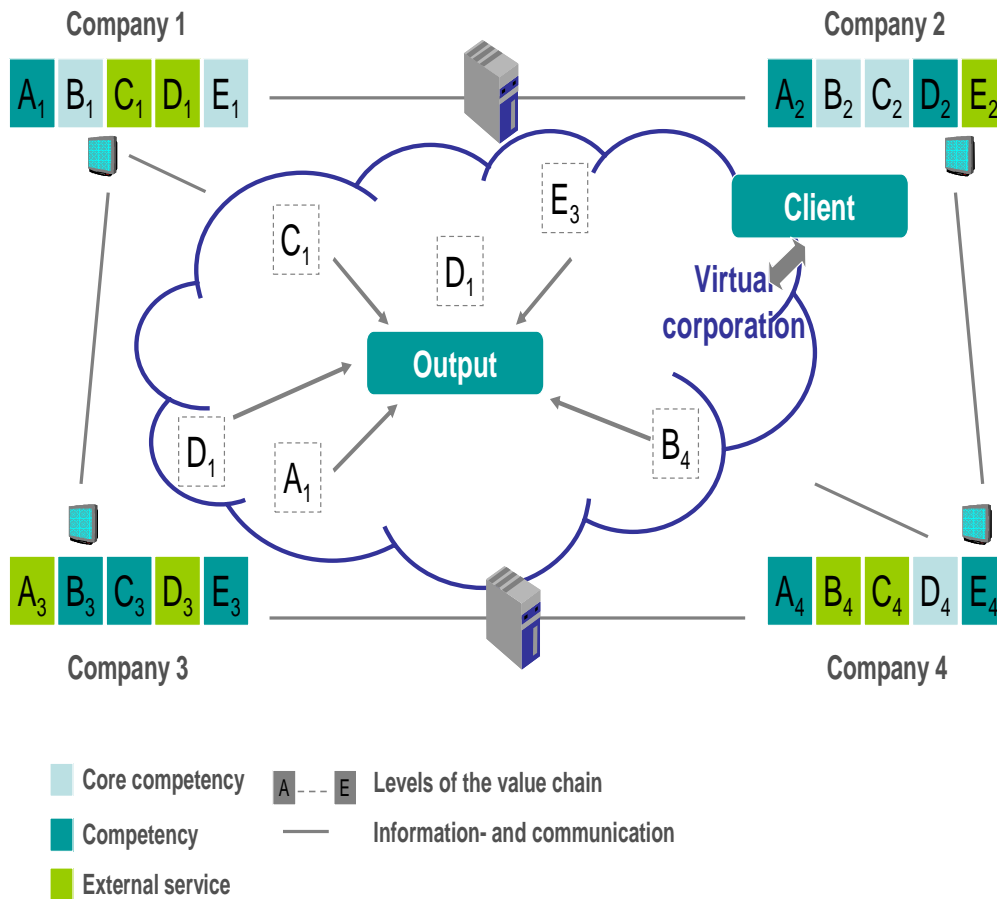


FIGURE 6: SIMPLIFIED PRESENTATION OF A VIRTUAL CORPORATION

Source: According to Arnold/ Faisst/ Härtling/ Sieber (1995), p. 4.

As mentioned above, many virtual corporations often renounce on building up a shared organisation and a common organisation or administration in order to be able to react more quickly to market requirements. But also virtual corporations can often not renounce on coordinating the single tasks of the various participants and stay in contact with the outside world. That is why many virtual corporations often create an appropriate function, which is labelled with different names (e.g. mandate manager).¹²⁴ This position plays a central role, because it represents an inside as well as outside interface of the cooperation. In summary, the typical characteristics of virtual corporations according to the respective definitions are, above all, the massive use of the most modern

information and communication technology, a uniform public appearance towards third parties, the predetermined envisaged only temporary cooperation, the legal independence of the participating companies as well as the existence of certain service profiles.¹²⁵ The distinctive characteristics of the virtual corporation, the independence and the equality for all participants and at the same time the renouncement to a large extent on institutionalization and hierarchy¹²⁶ is connected according to economic scientists to two factors: on the one hand to the renouncement on too explicit contractual agreements and on the other hand to the absence of a proper legal protection.¹²⁷ Codes of conduct that have been contractually agreed upon are not suitable as an instrument of coordination in virtual corporations because of their flexibility reducing effect and because of a missing hierarchic authority in virtual corporations.¹²⁸

The corporations, however, are dependant from the companys forming them. In the most cases, the codes of conducts, CSR policies and other soft law regulations and company policies therefore also apply to the virtual organisation. Companys probably try to avoid reputation losses virtual organisations related to them as they probably might try to avoid them for the "mother companies" themselves.

¹²⁴ Cf. Lange (2001), p. 59 ff.

¹²⁵ Cf. Wüthrich/Philipp/Frentz (1997), p. 94.

¹²⁶ Cf. Davidow/Malone (1992), p. 185 ff.

¹²⁷ Cf. Mayer/Kram/Patkos (1998), p. 24.

¹²⁸ Cf. Wirtz (2000), S. 97, 107 f.

3.7 Advantages of virtual organisations

In the light of the dynamics of global business due to of the globalization of the world economy the usual forms of cooperation, like for instance joint ventures or strategic alliances, reveal one significant disadvantage: When a new near-term market opportunity opens up, these type of cooperation forms often need too much time to get started on the project work and the participating companies are rarely capable of adapting their structure quick and flexible as needed for the market opportunity.¹²⁹ Due to a continuously growing product complexity in combination with an ever-growing market uncertainty, virtual organisation forms gain ever more importance. According to Wüthrich et al (1997):

“If a task is characterized at the same time by a high level of product complexity and by a high level of market uncertainty, the creation of temporary and task oriented cooperation structures become necessary, in which complementary competences complement each other as good as possible.”¹³⁰

Picot et al. (1996) describe this “*advantageousness of alternative organisational strategies*” based on product complexity and market uncertainty (see figure 3). In this graphic, it can be seen that the authors suggest that a hierarchical organisation is the best solution when market uncertainty and product complexity are equally both low and when the organisation is mostly providing mass production and standardised services. Once product complexity increases, with the market uncertainty still remaining low, the modular

¹²⁹ Cf. Wüthrich/Philipp/Frentz (1997), p. 43.

¹³⁰ Picot /Reichwald /Wigand (1996), p. 15.

organisation is seen as the best form. This organisation form is more focused on process orientation and on coordinating tasks. Given a high market uncertainty together with a low product complexity the organisation type of the *networked organisation* appears to be the most suitable to meet the needs of modern economy. This organisation type is typically characterized by Joint ventures with partners, strategic alliances between competitors and in many cases also a market integration between customers and suppliers. The advantages and disadvantages in a simplified form are shown in the following figure:

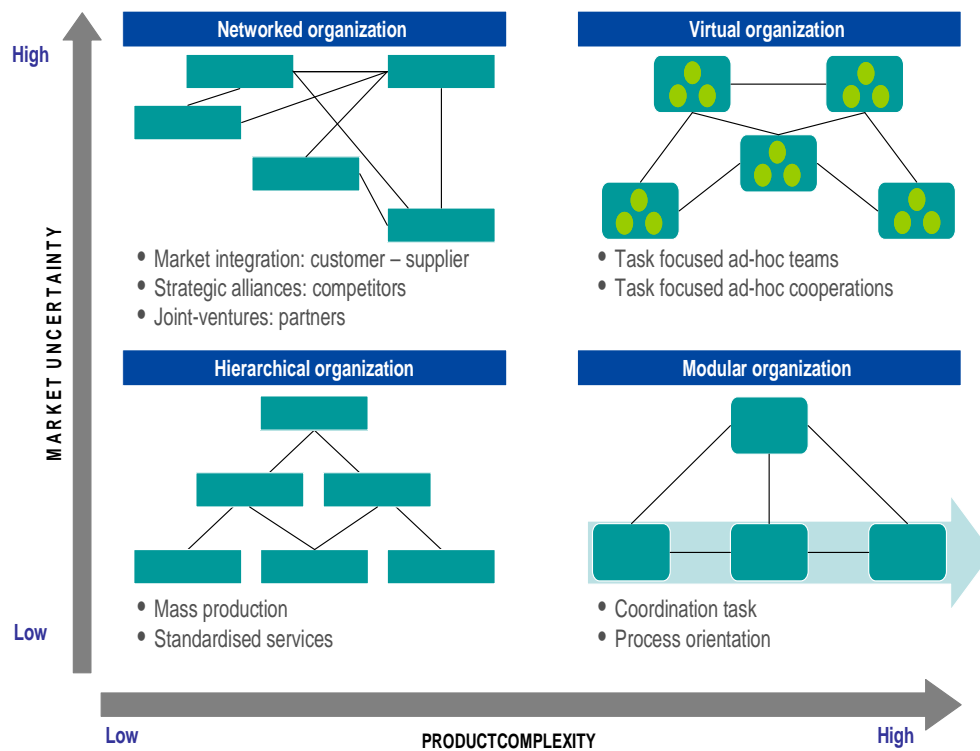


FIGURE 7: ADVANTAGEOUSNESS OF ALTERNATIVE ORGANISATIONAL STRATEGIES.¹³¹

Source: According to Picot et al. (2001), p. 3.

Typical advantages of virtual organisations described in the literature are, depending on the respective understanding of the term, the following issues:

¹³¹ Cf. Picot et al. (2001), p. 3.

-
- ***Saving of time costs.*** Due to the changed demands of the dynamic international world trade, businesses have become aware of another constraint: minimizing costs, together with a continuous increase of quality standards and flexibility is only possible, if the business focus is kept on the own core competences and if all other products, services and competences that are necessary for provision of the requested service or product are outsourced to external providers.¹³² Because of the ongoing shortening of innovation cycles and product lifecycles many companies are no longer in the position to make available the know-how that is essential for penetrating the market on their own.¹³³ As a result, companies are increasingly externalizing and decentralizing their tasks.¹³⁴ The responsibility of the planning and controlling of the production of goods and services remains usually under the outsourcing company, which intends by doing so to optimize its own economic performance in order to avoid the situation that because of a too strong economic performance, management capacities, know-how and capital are tied up.¹³⁵
 - ***Saving of time.*** The time factor, according to research by Stalk and Hout,¹³⁶ today significantly influences the effectiveness of productivity, quality, innovation and capital. As a consequence, if the factor time is not taken into consideration, competitive advantages are lost. The so-called time-competitors, companies equipped with an effective time management intend to “offer their clients a

¹³² Cf. Griesse (1991), p. 10, 11.

¹³³ Cf. Ott (1996), p. 14, 15.

¹³⁴ Cf. Bergmann (1996), p. 278.

¹³⁵ Cf. Picot/Reichwald/Wigand (2001), p. 291.

¹³⁶ Cf. Stalk/Hout (1992).

large range of choice at reasonable prices without a long delivery time.”¹³⁷

Thereby especially clients, which are willing to pay a higher price for speed and range of choice are targeted.

- ***Reduced order processing expenses.*** Also the economical advantages of a quick fulfilment of the customer-specific requests are gaining increasingly importance in respect to the advantages of standard products. In consequence clients who one sided prioritize only costs are becoming a shrinking or even declining market segment, which leads to the fact that companies which only focus on costs will have difficulties to cope with the competition in the future.¹³⁸ The company organisation should therefore be focused on flexible methods of manufacturing, on a high readiness for delivery and diversity to supply multi-faceted offers and innovation strength, in order to ensure its competitive advantage.
- ***Rapid response to the technical progress.*** The internet and the information and communication technology have developed over the past years in a way that had not previously been thought possible. The processing speed of computer processors and of storage capacity have doubled since the beginning of the 1990s on average every six months while prices remained stable.¹³⁹ Also the common standards regarding data storage and data transfer (HTML and XML) as well as the standard communication protocols (TCP/IP) were decisive for these changes in the economy. Due to the ongoing “electronic revolution”¹⁴⁰ previously recognised methods of production are being re-evaluated and our society changes

¹³⁷ Cf. Stalk/Hout (1992), p. 129.

¹³⁸ Cf. Stalk/Hout (1992), p. 130.

¹³⁹ Cf. Moravec, (2004), p. 53.

further from an industrial society into a knowledge-based and information society.¹⁴¹ Through this progress the first wave of e-commerce was triggered, first in the United States of America (USA) and then in Europe. With m-commerce, the next wave of electronic commerce is already on the horizon. Full m-commerce or mobile commerce will make it possible to do any type of business anytime on any place in the world with the help of the latest network technology (Long Term Evolution, referred to as LTE) together with the respective equipment. Also this technology is only a step to even faster communication between the most remote spots of the world making the *world smaller* and the business opportunities greater for companies from literally every part of the world. Virtual Organisations therefore also could accelerate the development of underdeveloped regions. On the other hand, developed countries determine which regions of the world they develop by providing costly new technologies.

- ***Increased market transparency.*** The new electronic media assist consumers to access information in general and especially about suppliers easier and therefore allow the comparison of different suppliers at marginal costs and on a current basis. This in turn leads to an increased market transparency. This transformation changes the market from a seller's market, which represents a market characterized by a shortage of goods available for sale, to a buyer's market, where supply exceeds demand, giving purchasers an advantage over sellers in price negotiations. This conversion has as a consequence that companies find it increasingly difficult to sell on a global scale standardised and unaltered products. More and more customers ask for tailor-made products and solutions,

¹⁴⁰ Spinner (1998), p. 315.

which account for their respective individual preferences. This by nature results in a smaller amount of produced lot and therefore reduced margins due to lower fixed cost digression, as the fixed costs distribute themselves on less products. Most companies realise that in the current economic environment their strategy has to be adjusted in a way so that they can provide a high level of specialisation together with flexibility and a simultaneous avoidance of fixed costs. Virtual companies represent, depending on the aims and approaches of the organisation, a possibility to reach this aim.

- ***Virtual Organisation as drivers of innovation.*** Peter Zoche from the renowned Fraunhofer Institute for Systems and Innovation Research (ISI) in Karlsruhe, Germany analyzes the origins and impacts of innovations. For him virtual corporations seem to represent in an ideal way the corporation type of a dynamic and globalized world. He aims less on the actual or factual characteristics of this organisation form and more on the formal characteristics of virtual corporations to adapt in a flexible way to the requirements of the current economic action in regards to personal, regional and timing parameters. The given structural openness comes in conjunction with specific challenges. The decoupling of the classic framework requirements and the cumbersome structural constraints have to be compensated in return via functional equivalents with partly complementary characteristics. This has led to a focus on the so-called soft factors, such as communication, trust, commitment and social competence, which although they

¹⁴¹ Cf. Spinner (1998), p. 313.

seem sometimes difficult or hardly quantifiable, have nevertheless a known influence on the success of projects and corporations.¹⁴²

3.8 Typology of virtual corporations

Conditional upon the short time, which remains for the configuration of virtual companies, the factor confidence has a high meaning. To already get indicative references regarding the method of operation of their future business partners, the individual companies form up to a network pool of legal independent companies (business network) to a virtual company (Type A). This form resembles the model of the Japanese Keiretsu. In case that one for the virtual organisation urgently needed core competence is not sufficiently represented or cannot be found within the pool at all, an external company will be added (Type B). If the external company establishes itself during the cooperation, a permanent acceptance to the pool becomes possible.

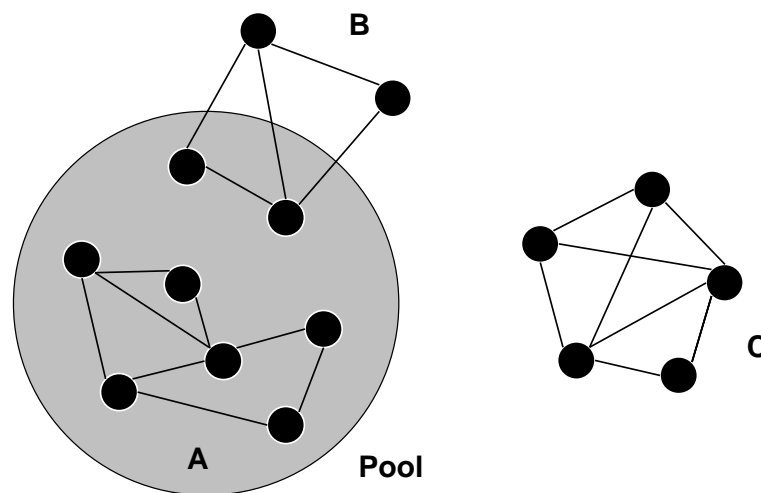


FIGURE 8: TYPES OF VIRTUAL COMPANIES
Source: Adapted from Faisst/Birg (1997), p. 10.

The most extreme Type C, which constitutes itself solely from spontaneously integrating companies, which did not have any prior relationship and which dissolve their relation-

¹⁴² Cf. Zoche (2007), p.1.

ship directly after the fulfilment of the assignment, is the rarest and is seldom seen in praxis.¹⁴³

¹⁴³ Faisst/Birg (1997), p. 10.

3.9 Differentiation from other forms of cooperation

Cooperations between companies can turn become difficult in one or the other form of corporation; as well as cooperation in virtual teams; for instance such teams with members from different companies aiming not only at the success of the team but also at the success of the company they belong to. Hamel/Prahalad phrase this phenomenon applying to all kind of associations where the interests of different other organisation have to be considered accordingly in the following sentence:

„The challenge is to share enough skills to create advantage vis-à-vis companies outside the alliance while preventing a wholesale transfer of core skills to the partner”¹⁴⁴

If one considers the virtual corporation as a concept of collaboration of various independent companies, it makes sense to delimitate this form of cooperation to other forms of cooperation between various organisations. In the following the research will try to answer this question by means of comparison to forms of cooperation, which resemble the virtual corporation in structure as well as in function.¹⁴⁵ The autonomy and the newness of the concept of the virtual corporation is hereby not a result of the single components, but to a greater degree a result of the combination of elements already known with regard to other forms of collaboration.¹⁴⁶ It is important to remember, however, that there is no unique understanding of the term virtual organisation at all. Differences between virtual organisations and other types of collaboration therefore depend on the respective understanding of the term. For the purposes of this section, virtual organisa-

¹⁴⁴ Hamel/Prahalad (1989), p. 135.

¹⁴⁵ Cf. Wüthrich, H./Philipp, A./Frentz, M. (1997), p. 97-101.

tions are understood according the definition of Mertens/Griese/Ehrenberg as described above in section 3.5.4. *as a form of a corporation of companies, institutions and/or individuals that are legally independent, which supply a performance based on a shared understanding of the business.* This understanding, however, represents only one of a large number of definitions but enables the differentiation from other usual forms of collaboration.

3.9.1 Corporate networks

A *corporate network* comprises several independent companies linked in a network, that are legally independent and in the ideal case are also acting independently on the markets. Sydow defines the term as follows:

*"A corporate network represents a form of organisation of economic activities that aims at the realisation of competitive advantages. It distinguishes itself by a complex, reciprocal, rather cooperative than competitive and relatively stable relation between enterprises. A network of this type, that either acts in one or in several inter-linked sectors, is the result of a differentiation that trespasses the boundaries of companies as well as the integration of economic activities."*¹⁴⁷

Due to the fact that corporate networks can emerge in diverse forms in regards to their duration, their objective and the internal competition in the network, this concept is rather to be seen as a embracing superordinate concept for the following concepts.

¹⁴⁶ Cf. Mertens/ Faisst (1995), p. 64, Arnold/ Faisst/ Härtling/ Sieber (1995), p. 12.

¹⁴⁷ Cf. Sydow (1992), p. 79.

3.9.2 Strategic alliances

As the concept of the strategic network seems very similar to the concept of the virtual corporation¹⁴⁸, it seems especially important to elaborate the differences here. Jarillo defines the concept as follows: “long-term purposeful arrangements among distinct but related for-profit organisations that allow those firms in them to gain or sustain competitive advantage vis-à-vis their competitors outside the network”.¹⁴⁹ The distinctive feature of strategic networks, in comparison to other forms of cooperation lies in the fact, that within them one or more companies take over the strategic lead¹⁵⁰ and that their members, despite of the close cooperation remain independent from a legal as well as an economic point of view. In contrast to the strategic alliance, a virtual corporation is not lead necessarily by one or more companies. The fact, however, that a virtual organisation could be led by one company illustrates how difficult in some cases the differentiation between several forms of collaboration might be.

3.9.3 Joint Ventures

As an extreme form of a strategic alliance in a joint venture (a cooperative venture) a new organisational unit is created by the foundation or acquisition of a combined company.¹⁵¹ The strategic foundation of a company, the common ownership of pooled re-

¹⁴⁸ Cf. Scholz (1997), p. 341.

¹⁴⁹ Jarillo (1988), p. 32.

¹⁵⁰ Cf. Sydow (1992), p. 81.

¹⁵¹ Cf. Staudt (1995), p. 720.

sources and the significantly higher level of integration are the essential distinctions that differentiate a joint venture from a virtual corporation.

3.9.4 Japanese Keiretsu

The term Keiretsu denominates network like linkages of industry, politics and major banking houses in Japan. This kind of cooperation, however, is obviously closely linked to the specific characteristics of the Japanese society and therefore difficult to transfer to other business environments. Steinbrenner¹⁵² understands a Keiretsu as a combined venture, which by coordinating the accomplishment of the collective tasks of several, previously independent enterprises (single units) now represents a new enterprise (the whole). The precursor of the Keiretsu are the so-called Zaibatsus, which were, before the second world war, the tightly organized strictly hierarchical Japanese family holdings.¹⁵³ After their victory in the second world war, the USA tried to break down these hierarchical networks by means of anti-trust legislation. In spite of the fact that they succeeded in cutting the juridical links between the networks, the personal linkages between the Japanese families continued to further exist.¹⁵⁴ The various Keiretsus all feature important common features.

All Keiretsus have in common that they transfer technological and personnel capacities, that they schedule important investments together and that they have a central trading house that they share.¹⁵⁵ In addition to the relatively narrow circle of the directly involved enterprises, there are a large number of enterprises that act as sub-contractors. It

¹⁵² Cf. Steinbrenner (1997), p. 15.

¹⁵³ Cf. Sydow (1992), p. 38.

is their role to assume work-intensive functions with relatively lower wage levels. Even though these companies do not directly involve in the Keiretsu, they are strongly dependent on this strategic network.¹⁵⁶ In addition to these supply relationships; there exist personnel interrelations between the Keiretsus and their respective sub-contracting enterprises. These relations make it possible to specialised workers belonging to the Keiretsu to be sent out to these enterprises or allow early pensioners of the Keiretsu to be retained in these enterprises. This flow of personnel helps the Keiretsu to control and mitigate fluctuations in the number of employees caused by the prevailing economic situation.¹⁵⁷ An easy transfer of the concept of the Keiretsu to other countries appears rather difficult as the historical developments of Japan as well as the cultural and social-economic conditions are essential preconditions for the establishment of a network of this kind. The main difference between the virtual corporation and the Keiretsu is that the Keiretsu cooperation partners work together on a long term basis and that in most cases one enterprise within the network is on top of the hierarchy and captures a predominant position.

3.9.5 Cartels

A cartel is a horizontal linkage of legally independent companies that emerges either from a resolution or from a contract and whose objective is to restrict competition.¹⁵⁸ In accordance with the reference object of the cartel's arrangements a distinction is made between conditional cartels, price cartels, productional cartels and marketing cartels.

¹⁵⁴ Cf. Sydow (1991), p. 242.

¹⁵⁵ Cf. Sydow (1991), p. 40.

¹⁵⁶ Cf. Sydow (1991), p. 244.

¹⁵⁷ Cf. Sydow (1992), p. 44.

¹⁵⁸ Cf. Wöhe (2002), p. 337.

Cartels, unlike virtual corporations, try to achieve a dominant market position and therefore pursue long term strategies. That is the reason why they need a relatively long preparation time.

3.9.6 Consortiums

Consortiums are opportunistic corporations which, on the basis of a consortium agreement, are formed by more than one juridical independent companies in order to execute a specific business together in a short period of time.¹⁵⁹ Consortiums are usually formed by banks and in plant construction scenarios in order to reduce and split the risk of large scale projects. The essential difference between consortiums and virtual corporations is the agreement that is agreed between the parties. Consortiums, other than virtual corporations are concluded on basis of a very extensive, often very formal contract (company agreement) that contains many details. This is, on the contrary deliberately avoided by virtual corporations, in order to not put at risk their flexibility. In addition, there often exist fixed organisational and behavioural patterns for consortiums.

3.9.7 Working groups

In literature, often the working group is presented as the “twin” of the virtual corporation¹⁶⁰ and the term is used for denominating a corporation network for example in the construction industry, in which various partners collaborate for a invitation to tender. Other than in virtual corporations, the various partners do represent a clearly defined legal form.¹⁶¹ Furthermore the reconfiguration process is less dynamic, as the choice of

¹⁵⁹ Cf. Wöhe (2002), p. 335, Schröder (1996), p. 39 f.

¹⁶⁰ Cf. Weber/Walsh (1994), p. 26.

¹⁶¹ Cf. Wöhe (2002), p. 332 f.

business partners is not made on a basis of excellence but rather on a basis of old and grown acquaintances and relationships. After the presentation of the above concepts the following management concepts concern inter-organisational cooperation, in which the idea of networking is not primarily the focal point.

3.9.8 Franchising

Franchising is a growth strategy. It is a method to distribute products or to expand in the service sector.¹⁶² The official definition of the Franchising Association basically is that franchising is a vertical cooperatively organised sales system of juridical independent entrepreneurs on the basis of a contractually regulated continuing obligation agreement.¹⁶³ In the Oxford Dictionary of English it is defined as “an authorization granted by a government or company to an individual or group enabling them to carry out specified commercial activities, for example acting as an agent for a company’s products”.¹⁶⁴ The franchising system can also be designated as a special form of the granting of a licence. It includes the permission for the licensee to make commercial use of the industrial property rights (i.e. branded goods, recipes , company signs, etc.) and help in marketing the products of the licensor. The licensee must thereby at the same time adhere to statutory provisions given by the licensor.

3.9.9 Outsourcing

Outsourcing basically means that operations that formerly were done by a company itself, are now allocated to external companies or are divested in a juridical sense. This is

¹⁶² Cf. Büchner, H./Kästner, G. (1995), p. 11.

¹⁶³ Büchner, H./Kästner, G. (1995), p. 14.

done either to profit from the designated specialisation of other companies or to augment the market proximity. Outsourcing does not necessarily mean that companies are discharged of the strategic planning but the boundaries between the partners remain clear.¹⁶⁵

¹⁶⁴ Oxford Dictionary of English (2012).

¹⁶⁵ Cf. Campell. A. (1998), p. 88.

3.10 Virtual teams

Work teams have a long tradition in the US first described in the 1960s. By the 1990s, more and more companies began exporting the team concept to their foreign affiliates in Asia, Europe and Latin America in order to integrate global human resource practices also with the intention to facilitate the work abroad for their expats.¹⁶⁶ For project-oriented research and development organizations or enterprises, human resource management is strategically crucial because the core of project management has shifted to the issue of human resource management from technical concerns.¹⁶⁷ The nature of the project may differ from project to project depending on its subject, but the success of a project is the common goal for any organisation that performs the project.¹⁶⁸ In the last two decades due to emerging communication technology improvements and due to the globalization challenges teams turned out not to be necessarily on the same physical place but working together from wherever by using modern communication technology.¹⁶⁹ The Internet and internet-related technological advancements facilitate the global management and flow of information and also change the structures of workplaces and the way of workplace collaborations as well as mechanisms by which organisations are executing their tasks. The increasing prevalence of the internet and the world wide web is making it possible for geographically dispersed individuals to get engaged in discussions in online and real-time modes.¹⁷⁰ Early & Gibson described yet in 2002 multinational work teams as a new perspective for doing global business. The definition of vir-

¹⁶⁶ Kirkman et al. (2001).

¹⁶⁷ Huemann/Kegan/Turner (2007).

¹⁶⁸ Wi/Jung, (2010).

¹⁶⁹ Walvoord et al. (2008).

¹⁷⁰ Paul/Samarah/Seetharaman/Mykytyn (2005).

tual teams, however, remains unclear as well as the research on virtual teams is still in its nascent stages¹⁷¹.

Virtual teams, however, might be set up of members of different organisation so that the boundaries to virtual organisations might be difficult to define and they are cut across national, organisational and functional boundaries often resulting in diversity of team composition.¹⁷² With regard to the *collaboration* of people in virtual structures, however, there are no substantial differences. Virtual teams in this connection might be understood as *basic units* of virtual organisations.

Although virtual teamwork is a current topic in the literature on global organisations, it has been problematic to define what ‘virtual’ means across multiple institutional contexts.¹⁷³ The concept of a “team” is in this context described as a small number of people with complementary skills who are equally committed to a common purposes, goals, and working approach for which they hold themselves mutually accountable. If they are working on a certain project or on a permanent basis does not affect the fact that they are understood as team.¹⁷⁴ Project performance is significantly affected by the collaboration of project team members and by the levels of their knowledge.¹⁷⁵

It is worth mentioning that virtual teams are often formed to overcome geographical or temporal separations¹⁷⁶. Virtual teams work across boundaries of time and space by utilizing modern computer - driven technologies¹⁷⁷The term “virtual team” is used to cover a wide range of activities and forms of technology-supported working (Anderson et al.,

¹⁷¹ Badrinarayanan and Arnett, (2008).

¹⁷² Paul/Samarah/Seetharaman/Mykytyn (2005).

¹⁷³ Chudoba et al., (2005).

¹⁷⁴ Zenun et al., (2007).

¹⁷⁵ Wi/Jung, (2010).

2007). This team trait has fostered extensive use of a variety of forms of technology-mediated communication that enables geographically dispersed members to coordinate their individual efforts and inputs. A very simple definition of virtual teams describes them as a *group of individuals that are working interdependently together in different physical locations being reliant upon technology to support communication* (Webster and Staples 2006). This definition, however, just describes the virtual character of the collaboration and does not affect the way different organisations might be linked to the teams. From the *collaboration point of view* virtual teams have been found to be advantageous for many firms because they reduce the costs and time associated with employee travel. Given that for instance leading retail firms conduct up to 70% of their sales abroad¹⁷⁸ the dimension of reduction of time and costs is obvious. Virtual teams also permit organisations to offer attractive workplaces attracting and retaining the best managers because workplace flexibility is increasingly seen as a crucial aspect of job selection and job satisfaction.¹⁷⁹ *Technology* enables virtual teams to operate and *forces* them at the same time to use communication tools to their work as well to develop group processes. Therefore there is a necessity for communication in virtual teams with the consequence that they become more relationship-based.¹⁸⁰ According to Anderson et al. (2007) this relationship-based structure is necessary particularly in the early stages of the team's collaboration playing an important role in gaining and maintaining *trust*. Members of virtual teams often have to perform instantly because they could be contacted at any time and any place. Virtual team may allow people to collaborate over every distance without too much privacy. Working in international and particularly

¹⁷⁶ Cascio and Shurygailo, (2003).

¹⁷⁷ Cummings & Kiesler, (2005).

¹⁷⁸ Swoboda et al. (2009).

¹⁷⁹ Bergiel, Bergiel & Balsmeier, 2008).

¹⁸⁰ DeSanctis and Monge (1999).

global virtual teams, however, inevitably brings about interactions and relationships among people who are culturally different.¹⁸¹ These interactions and relationships are not confined to expatriates working abroad but include communication through international phone calls, e-mail and other interaction with team members and customers respective suppliers. Despite the increased ease of communication, cultural differences are present and challenge these methods of communication. While other aspects of the global environment are observable, *culture* is largely invisible and often overlooked as an success factor of virtual collaboration over cultural boundaries. Therefore, it is imperative for managers to have specific skills to be successful in global teams that usually are transcultural teams¹⁸² as well as in transcultural virtual organisations.

3.11 Opportunities and risks of virtual corporations

3.11.1 Opportunities

Thanks to virtual corporations, the inherent strengths of smaller companies as for instance typically lesser fixed costs, higher flexibility and shorter decision-making channels appear combinable with the usual advantages of major enterprises like for instance typically greater presence / higher profile, sufficient resources of professional staff and techniques and higher capacities. This advantages might be combined without having to face the respective disadvantages.¹⁸³ Because of the fact that virtual corporations usually substitute investments in plant and equipment by integrating external key competences

¹⁸¹ (Thomas & Inkson, 2009)

¹⁸² Thomas & Inkson (2009).

¹⁸³ Cf. Hofmann (1996), p. 62, 64.

from other parties, the allocation of overhead costs for the fabricated products can usually be kept at a very low level.¹⁸⁴

Today's economic environment and the investment community at the stock exchanges around the world require the companies to concentrate, specialise and to focus on their respective *core competences* and many major companies implement these guidelines. In the concept of the cooperation form of the virtual corporation, companies have the chance to access the "resource pool" of the partners, as required. This enables the companies to lower uncommitted resources that exist beyond their core competences and as a result this directly leads to a better cost structure.¹⁸⁵ The utilisation of proprietary strategic advantages combined with the entrepreneurial strengths of the cooperation partners means that resources can be cut down and as a result due to the synergy effect increased performance becomes possible, which leads to a benefit for all parties.¹⁸⁶ Furthermore, as a result of the cooperation in virtual corporations, additional customer orders outside of the core business activities can be acquired and consequently existing capacities can be released.¹⁸⁷ Thanks to an increased product volume all the involved participants have in addition the possibility to access better prices and conditions when sourcing goods and services. On the other hand, virtual collaboration might also be a necessity in order to react to clients needs. From a supplier's point of view, for instance, multinational companies have always been highly profitable but also very demanding customers often choosing suppliers that understand their specific needs and offer solutions on a global basis. The consolidation pressure in many industries has created a situation in which fewer, larger and more complex customers demand special value-adding activities like

¹⁸⁴ Cf. Ackermann (1998), p. 40.

¹⁸⁵ Cf. Engelen/Homann/Neumann (199), p. 109, 111.

¹⁸⁶ Cf. Picot/Reichwald (1994), p. 547, 549.

joint product development from their key suppliers worldwide forcing them possibly also in virtual collaboration due to the fact that both companies are located in different countries or even continents. During the last years suppliers were subject to a fast growing performance expectation of their major customers.¹⁸⁸

A company, categorically, will only limit its portfolio to a few core competences and will become dependent in an economic sense relying on other economic subjects, if the aspired advantages of such a measure are certain and guaranteed. The recourse options of the remaining participants must therefore always be ensured. A breakdown of the cooperation would normally worsen the economic situation of the concerned enterprises, as large orders are regularly assigned to full-range and service providers rather than to niche providers.

3.11.2 Risks of virtual corporations

Despite all the euphoria about virtual corporations, one should not neglect the aspects that make the engagement in such a type of collaboration appear critical and the above mentioned chances of virtual corporations have to be confronted with the negative aspects inherent in this cooperation form.

The success of a virtual corporation critically depends on the fact that almost all of the often sensitive information flow takes place over the medias like internet, e-mail and telephone, so that all of the involved companies are practically forced to communicate

¹⁸⁷ Cf. Dubacher (2000), p. 84.

¹⁸⁸ Hollensen/Wulff (2011).

and diffuse sensible and confidential information only via these channels. Such a massive use of information and communication technologies represents a problem that should not be underrated, given the fact that there are still significant security flaws, for example in e-mail communication as well as in telecommunication. This represents a problem that can make the collaboration within a virtual company difficult. There exists for example the danger of the spy out of confidential data and the loss of important know-how as well as of proprietary company secrets.¹⁸⁹

As the various participating companies are bringing in their different key and core competences, there is a need for coordination and planning efforts, which often makes it more difficult to lead a virtual corporation than it would be the case in a traditional hierarchical company.¹⁹⁰ Furthermore, specialization will always be accompanied by dependence¹⁹¹ and after a certain individual company specialization, a participating company might no longer be able to side step into other business and product areas without difficulties. Therefore the company concerned will become at the same time vulnerable to fluctuations in demand on the market that it serves and simultaneously is no longer able to switch to other possibilities for compensation within their own product and business range.

Due to this development, it can happen that the concerned companies are forced into permanent corporations, which is not always being desired by every company. Another risk of virtual corporations that should not be underestimated is the prevalent question

¹⁸⁹ Cf. Weibler/Deeg (1998), p. 107, 115, Szyperski/Klein (1993), p. 187, 201.

¹⁹⁰ Cf. Corsten/Reiss (1995), p. 159, 167, Wirtz (2000), p. 97, 104.

¹⁹¹ Cf. Corsten/Reiss (1995), p. 159, 167.

of liability that often remains unclear.¹⁹² If the collaboration is only based on trust and if the companies start immediately with the project work, many questions arise, as the willingness of companies to engage themselves in virtual corporations is strongly determined by potential inherent liability risks and the general calculability of this risk that goes along with the corporation form. The single company, normally is not interested in guaranteeing for the entire product, but rather only for its part of the production or the service.

This question is also of crucial importance for the acceptance of the model of virtual corporations by both clients and suppliers, as these interest groups are only interested in business relations with virtual corporations, if the question of who guarantees and stands up for the resulting claims is properly settled and clarified. In regards to this point results a possible direct risk for the market success of short-lived virtual corporations.

¹⁹² Cf. Aschenbach (2000), p. 159.

4 RESULTS

4.1 Case studies: Virtual cooperation in business praxis

The results chapter starts with the following section aiming to illustrate existing examples of virtual corporations and relevant aspects of virtual corporations in business praxis as well as well as deliberations and business plans for further development of virtual organisations.

4.1.1 IBM (technology and consulting)

According to recent news, the American software company International Business Machines Corporation (IBM) announced that they are planning a radical reform in regards to their employees. In the contemplated scenario by IBM, small teams of core employees would conduct many other temporary employees¹⁹³. IBM apparently wants to eliminate a big part of its jobs in Europe and especially Germany with a programme called “Liquid” which aims to give the company a more flexible form and shape and seems like a revolution in the working environment. In this “*working model of the future*” a group of core employees will be responsible for the maintenance of the relationships with the customer and a small number of employees will be in charge of directing and managing the company. As discussed in section 3.3., in 2006 the CEO of the organisation stated that the multinational corporation, often seen as an early agent of globalization, is taking on a new form promising for business as well as for society.

¹⁹³ Cf. Der Spiegel (2012), p.62.

The majority of employees will not be based anymore in the various headquarters and subsidiaries of the information technology specialist, but will be sourced from places distributed all over the world in a “*global talent cloud*”, from where they will be hired from. They will be working in interaction with the other regular employees in always changing combinations on projects for days, weeks or months to service the needs of the clients of IBM. The team members of the global talent cloud will advertise their manpower and labour on an internet platform modelled after the example of eBay, an online auction and shopping website in which people and businesses buy and sell a broad variety of goods and services worldwide. In order for the choice of labour being successful in the projects, IBM wants to implement a certification model, which will label the people advertising their manpower on the internet platform according to the degree of their qualification in the colours blue, silver and gold. The gold qualification represents the highest standard in this evaluation system.

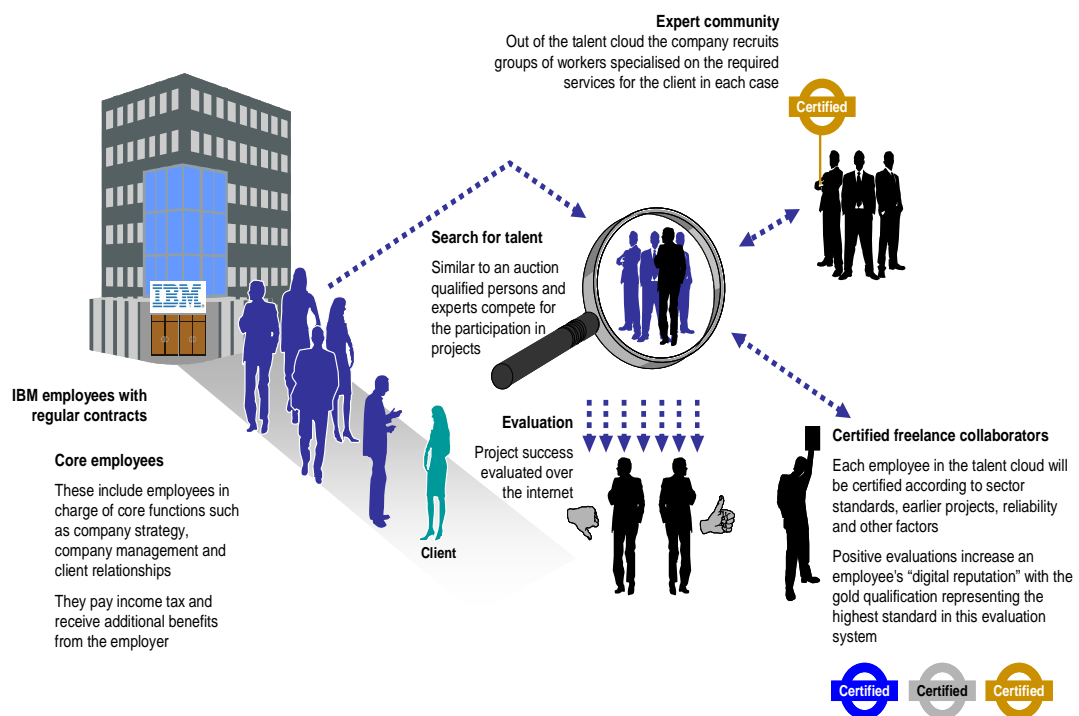


FIGURE 9: THE VIRTUAL WORKING ENVIRONMENT

Source: Adapted from Der Spiegel (2012), p. 63.

Another aspect of this “*working model of the future*” is that IBM plans to have its contracts of employment to be based on global standards rather than on regional standards. With such global employment standards, national legislations, national salary regulations and prevailing labour agreements could be circumvented. The workers from the talent cloud will be compensated for the projects they participated in either according to the results that they achieved or according to the time they invested for the respective project. Furthermore, the certified freelance collaborators are invited to participate in trainings organised by IBM at their own cost in order to increase their chances vis-à-vis the competition in regards to the defined work units.

Advantages for companies like IBM are apparent as in comparison to current personnel costs, the personnel costs in a virtual working environment are significantly lower for the company. In addition the company would gain worldwide access to a talent pool of experts and qualified workers, that can be hired and dismissed according to fluctuations in customer demand. This model, however, is at a closer look in fact a workforce and cost-related model not creating virtual organisations but virtual teams composed of employees who have to apply for a position in these teams at IBM. Therefore, there is no second company building creating a virtual organisation together with IBM but - more or less - independent people trying to sell their working power to the company. As flexibility from an employees point of view usually means *uncertainty* this kind of working teams only obviously generates advantages for IBM; the cost for a certain work performance is probably considerably reduced. With regard to the form of collaboration, however, the company plans to install *virtual teams* under their authority and not *virtual organisations*.

4.1.2 PUMA (fashion)

PUMA SE, together with its subsidiaries, engages in the development and sale of sports and sports lifestyle products such as footwear, apparel, and accessories and collections in various categories for athletes, including team sports, running, training and fitness, golf, sailing, and motor sports. The company offers its products primarily under the PUMA brand but as well under the Cobra Golf, and Tretorn brand names¹⁹⁴. It also issues licenses authorizing independent partners to design, develop, and sell watches, fragrances, and eyewear.

Puma as a company is a very successful example of an organisation that comes from its structure close to the cooperation type of the virtual corporation. While the complete production and almost all of the logistics are taken over by network partners in over 20 countries worldwide, the firm itself is concentrating on its core competences: development, design and marketing.¹⁹⁵

The respective subsidiary companies are therefore only responsible for the distribution. In the course of this Puma collaborates with shoe manufacturers in Asia and a British logistics company. Puma coordinates this partnership as a leader and directs the complete flow of materials. Puma's production partners are supported with market intelligence and market projections. In the case of unusual miscalculations in regards to the quantity of sales, a certain financial compensation is granted for the development efforts. Also the PUMA case shows therefore a "virtual organisation" as described by scholars but a modern, technology-based collaboration under the authority of PUMA.

¹⁹⁴ Bloomberg Business Week (2013).

Due to the use of the most modern information and communication technology, clients, producers, distribution partners and licensees are being interlinked and in some areas Puma already communicates exclusively online with its cooperation partners. A similar structure of such a temporary network of units interlinked with each other while presenting themselves as an unity under an own brand to the outside world also feature Adidas and Benetton.¹⁹⁶ A small corporate head office in the small town of Herzogenaurach in Germany is therefore able to direct the complete business chain on a worldwide scale.

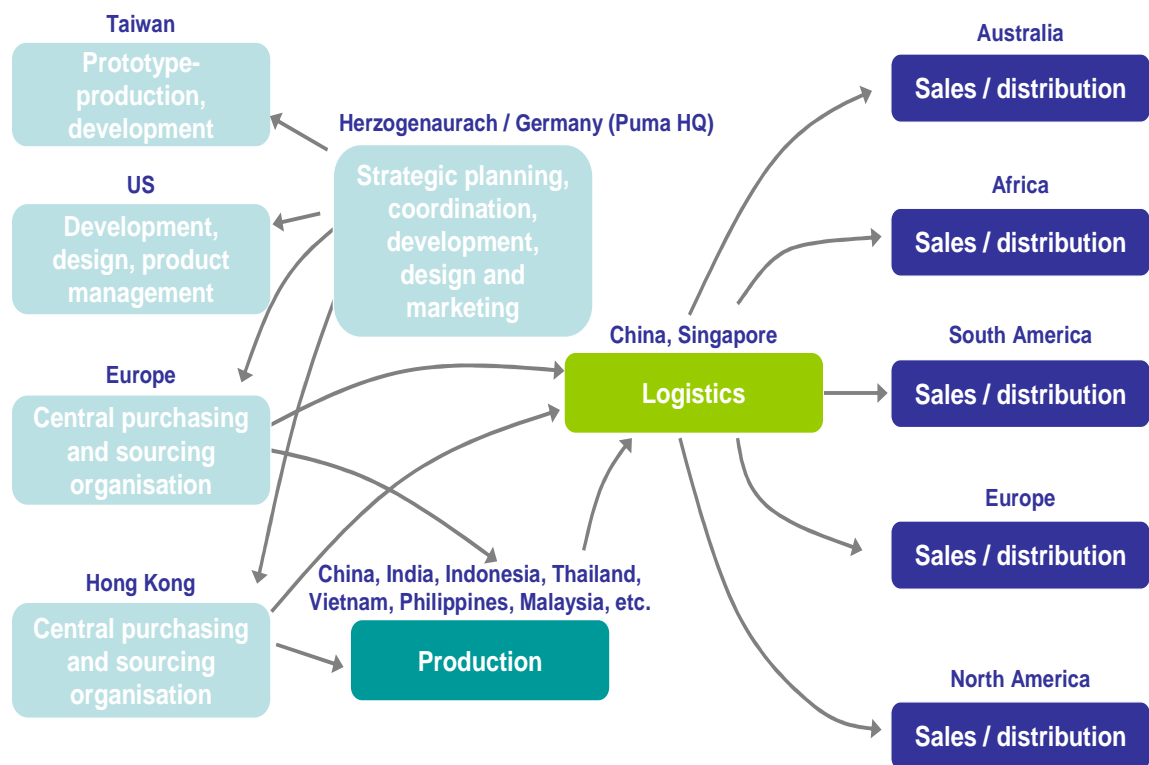


FIGURE 10: PROCESS CHAIN OF THE PUMA AG

Source: According to Mertens/Faisst (1997), p. 105

¹⁹⁵ Cf. Wüthrich/ Philipp/ Frentz (1997), p. 32, 144 ff.

¹⁹⁶ Cf. Faisst /Mertens (1997), p. 105 f.

4.1.3 DIESEL (design company)

Diesel is an Italian design company and is best known for luxury and prêt-a-porter clothing aimed at the young adult market and especially very successful in producing jeans- and designer clothes. The company counts among the most successful Italian companies of the last few years and is still owned by its founder and current President Renzo Rosso. The company employs around 220 employees, out of which 120 are employed in logistics and 60 persons are working in research & development (R&D). Diesel's main markets in terms of sales are in addition to Europe the USA and the Middle East. Diesel's rapid expansion over the last decade together with its ever growing market share are a proof for the success of Diesel in regards to virtual corporation structures.¹⁹⁷

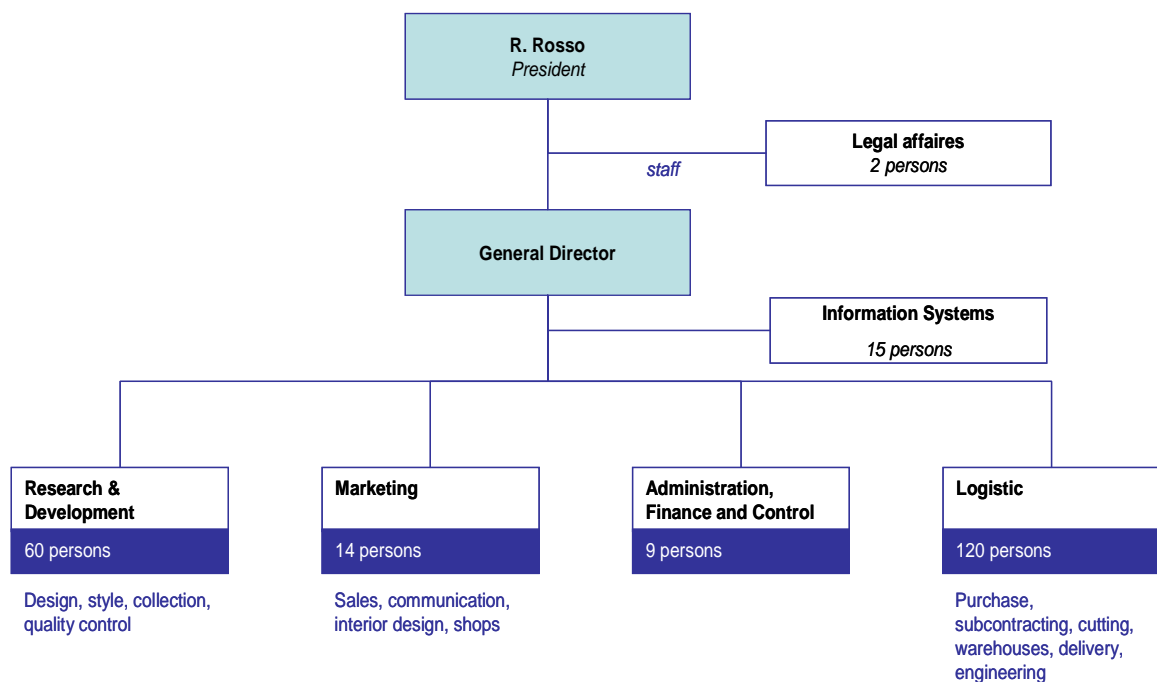


FIGURE 11: DIESEL ORGANISATIONAL CHART

Source: According to Bielle (1999), p. 4

In order to increase flexibility, the complete production has been *outsourced* to sub-contractors from the region. Each of these sub-contractors is specialized on one or two production steps or on specific textile types. Diesel itself therefore does not produce. Due to the fact that the contracts with the respective sub-contractors are on a non exclusive basis, these suppliers can possibly be replaced at any time.; probably the contractors cannot that easy replace Diesel as a client. The advantages for a company like Diesel with this model are consequently flexibility, time saving and reduced investments. On the other hand the need for coordination increases significantly while quality control becomes highly important. This analysis is also reflected in the functional division of staff and in Diesel's process flow highlighted in the following graphic.

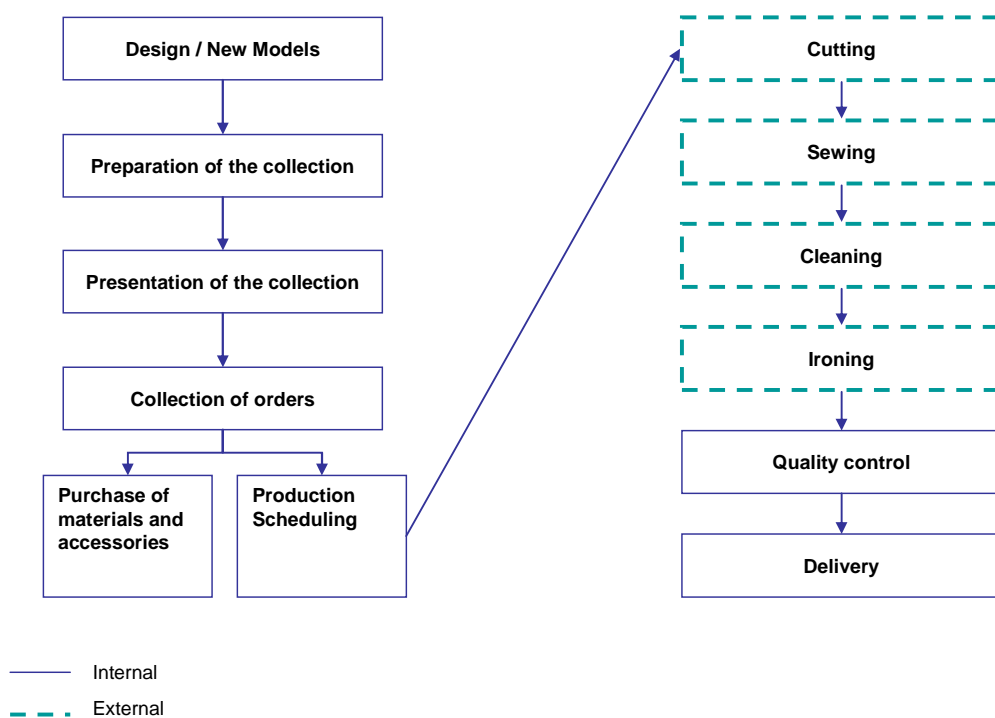


FIGURE 12: DIESEL PROCESS FLOW

Source: According to Bielle (1999), p. 7

¹⁹⁷ Bielle (1999), p. 1.

With the implementation of this special company structure, Diesel has taken into account the fact that especially in the trendy and fast-moving fashion sector aimed at the young adult market, it can be much more vital to be flexible rather than to own proper production facilities.¹⁹⁸ The business model, however, is not about virtual organisations as described by scholars but about an outsourcing of the production. This strategy is not new at all.. Paradigmatic for this development is for instance *Red Bull* creating for instance spectacular sports events in non-traditional sports as Kite Surfing, Downhill Mountain Bike or Base Jumping closely linked to the brand, but no lemonade, energy drink or other physical product at all. The company just buys the products from an leading Austrian soft drink and juice company and sells a *feeling* or a *lifestyle* to its customers.¹⁹⁹ .

4.1.4 NINTENDO (consumer electronics)

Nintendo is a Japanese multinational consumer electronics company. The company is one of the most influential video game companies in the industry and was once Japan's third most valuable listed company with a market value of over US\$85 billion. The company's name stands all over the world as a synonym for the fun of playing video games. Nintendo has sold over 565 million hardware units and 3.4 billion software units as of October 2010. It is, however, not a virtual company in the sense of the collaboration with under *independent companys*.

Similar to the fashion industry, it is essential to be able to react quickly to changing market demands in an industry, which is as fast moving as the video game industry.²⁰⁰

¹⁹⁸ Bielle (1999), p. 2, 3.

¹⁹⁹ Cirillo 2009.

²⁰⁰ Cf. in the following Wüthrich/Philipp/Frentz (1997), p. 134 f.

Velocity to react is therefore a decisive competitive advantage vis-à-vis Nintendo's competitors. For Nintendo being faster directly means additional market potentials and margin advantages as well as the realization of an image bonus. Due to a world wide *sourcing-network* and a focused minimal value creation, new games can meanwhile be developed in less than a week. This minor effort of development is not at the expense of success, as multiple games were sold in million editions and some even surpassed the limit of 15 million copies. Thanks to a virtualisation of its value creation, Nintendo managed this unbelievable success. As a result, right in the middle of the Asian crisis, Nintendo was for four years in a row Japan's most profitable listed company achieving a profit margin even higher than 18%.

Even more impressive than these rates of return is the way in which Nintendo's products are realized: Own proper production plants represent only about 9% of the company's assets on the balance, and the production costs amount to only 6% of the volume of sales. Products are mostly based on existing technologies and are brought to the market via the "Trial & Error-method". Nintendo concentrates solely on the generation of ideas for games, the commercialisation of these and the direction of the distribution. This goes as far as that the whole hardware production, the graphic design as well as the system development and the software programming and even the distribution are in the hands of others sub-contracting partners. Also this kind of collaboration is, however, in the terms of the definitions quoted above no *virtual corporation* but a real company contracting with other companies working for Nintendo.

4.1.5 SEITZ (software)

The Seitz-group sees itself as an IT-service specialist for the manufacturing and the trade of soft- and hardware up to complete outsourcing solutions.²⁰¹ The company, that also combines its own products with standard solutions from SAP for example has about 260 employees throughout the German-speaking region. Seitz basically has as an one-line organisation with associated functional segmentation in production, accounting, marketing, distribution and other participations. As the work in almost all areas is very case specific, it is exclusively conducted via projects. The project teams are created by a mix of employees, which are part of the same organisational units, as well as of employees of partners, clients and suppliers. This structure meets the definition of virtual teams rather than of virtual organisations given that the team members are working in different countries and organisational structures. The already established organisational structure at Seitz is continually maintained and is only changed on a short term basis for the entry into new markets or the development and introduction of new products. For the introduction of internet services for example, a task-force was build, which solely dedicates itself exclusively to this task. After conclusion of the task, the task-force was reintegrated into the old and established structure. In the process, sometimes new employees are engaged and new departments are being created, which then are completely maintained.²⁰² Executives, which have directed such a task-force over a certain period of time are then reintegrated into the organisation and sometimes problems can arise, as they do not longer dispose of the same level of independence and are no longer equipped with the same competences as when they were leading the task force. On the

²⁰¹ Cf. In the following Sieber (1996), p.2 f.

²⁰² Cf. Mertens/Griese/Ehrenberg (1998), p.36.

other hand, the employees also get the chance to continually acquire new knowledge and skills. This problems are typical for formation and dissolution of teams.

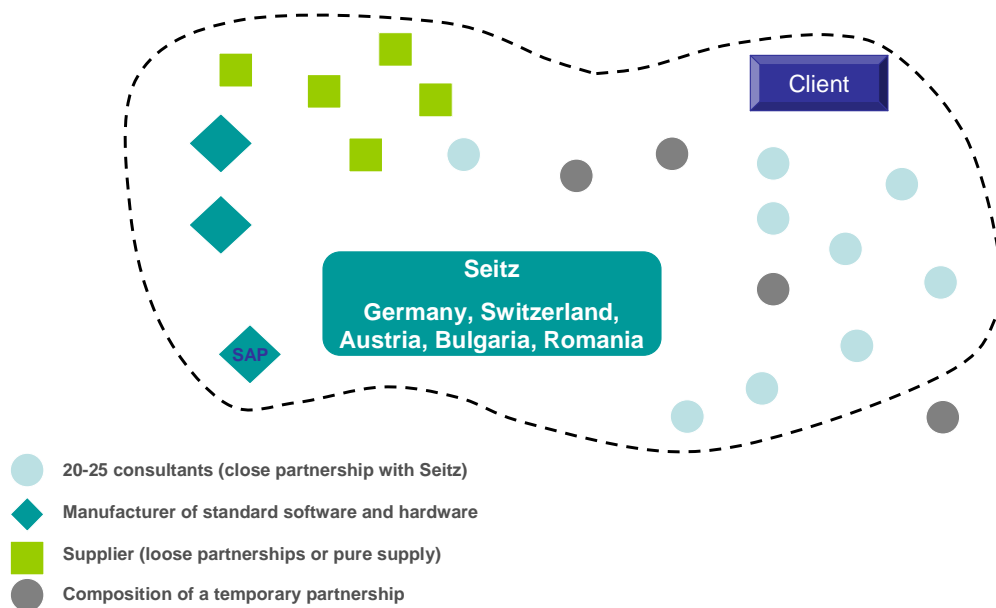


FIGURE 13: COMPANY NETWORK OF SEITZ GROUP

Source: According to Sieber (1996), p.3.

An advantage of this construction is the risk reduction in the pioneering phase of market life cycles. Since a large part of the organisational and operational structures are formalized, the informal organisation functions very well. Seitz’s partnership network is constructed for the long term and generally open. Since every project leader also takes care of his own proper personal network, the formation of project teams is often made easier. These networks are often overlapping each other and are being held together without contracts. Legal cover is only provided for individual projects. The company is generating 20% of its sales via its partners and is planning to double this number in the medium term. In the area of SAP realisation the “temporary outsourcing“ concerns an average of 40% of the tasks are already being assigned to third parties.²⁰³

²⁰³ Cf. Sieber (1996), p. 3.

4.1.6 WAL-MART (retail industry)

Wal-Mart is an American multinational retailer corporation that operates chains of large discount department and warehouse stores. According to the Fortune Global 500 list in 2012, Wal-Mart is the world's third largest public corporation. One of the reasons for Wal-Mart's ascension to one of the world's largest retailers and for a certain period of time, also the largest corporate group in the world in terms of sales, is certainly also to be found in the structure of its ultra-modern information network.²⁰⁴ This ultra-modern information network serves the suppliers and sub-contractors directly with client data from Wal-Mart stores all over the world. The use of this highly modern technology helps to economize both time and costs and to shape more efficiently the operational sequences.

The core part of this central registration is Wal-Mart's personal economic data system SMART²⁰⁵, in which all the data and information flows come together. As retailers generally are very dependent on their suppliers, Wal-Mart has used this mutual dependence in order to create a virtual corporation, that appears as a single unity. Furthermore, Wal-Mart has initiated the so-called RetailLinkProgram, starting from a traditional supply chain.

This program, which is based on EDI (Electronic Data Interchange)-networks and an extranet with the suppliers, makes it possible to interchange client data with the various Wal-Mart stores in real-time. As a consequence, Wal-Mart can directly adapt and react to customer needs

²⁰⁴ Cf. In the following Hutley/Heimgartner/Mobley (2003), p. 24 f.

and demands and the warehousing and storage costs can be reduced while the sales increase. In addition to the RetailLinkProgram, the company operates several proper online marketplaces which are directly linked to the Retail-Link-Program. Wal-Mart is also planning a so-called scan-based trading system, which would allow it to make it possible to reduce storage costs to almost zero by leaving the goods as long in the property of the suppliers, until the goods are paid at the cash desk by the client.²⁰⁶ The following figure illustrates the collaboration of retailer and supplier in general terms showing the different stages of collaboration and virtualisation. Only the fourth stage shows characteristics of an virtual organisation.

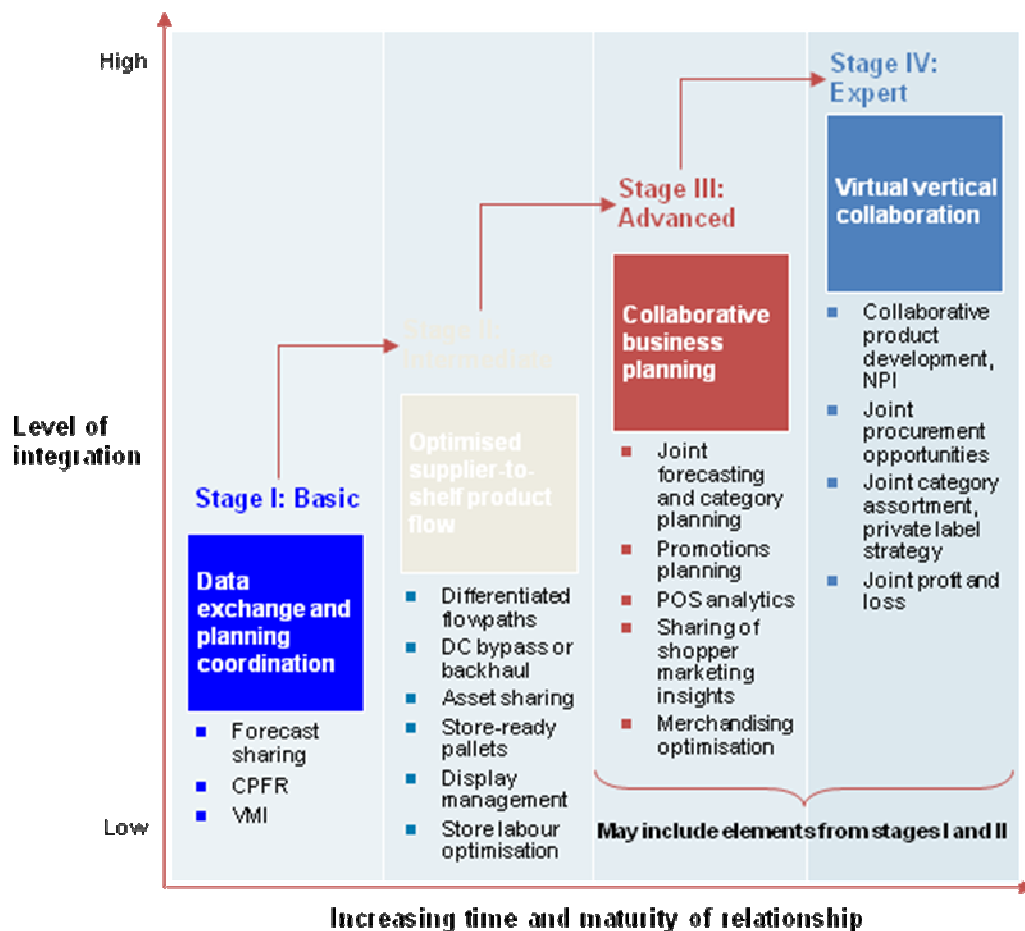


FIGURE 14: LEVELS AT WHICH RETAILER AND SUPPLIER COLLABORATE

Source: According to A.T. Kearney analysis (2012).

²⁰⁵ SMART: STORE MERCHANDISING Through APPLIED RETAIL TECHNOLOGY.

²⁰⁶ Cf. Hutley/Heimgartner/Mobley (2003), p. 25.

4.2 Empirical study: Corporate finance professionals

In an empirical field study via structured interviews that have been conducted for this research, 30 corporate finance and investment banking professionals working within and close to the specialist division of Mergers and Acquisitions within corporate finance have been asked to answer to several questions regarding virtual organisations. Although a sample size of 30 professionals does not seem a particularly high number when compared to other surveys and a question of relevance remains, these group of professionals are best suited to answer these interview questions as the work on corporate finance matters for different companies and across various sectors on a daily basis. It is noteworthy that it is normally very difficult to get answers from this specialised focus group as they generally tend to be seclusive regarding their activity as their work is often confidential client work and they are often not willing to participate in general surveys due to a very busy work schedules and time constraints. It is therefore difficult to assess who would be a relevant person to answers the questions. The interview questions presented to the respondents were:

- I am familiar with the term "virtual company/ corporation" or "virtual organisation".
- I associate the term "virtual organisation" with the area of Corporate Finance and / or Investment Banking.
- I associate the term "virtual organisation" with the area of Mergers and Acquisitions.
- I associate the term "virtual organisation" with the area of cooperation forms.

-
- I have encountered the term “virtual organisation” already on a professional basis

This research was conducted under the guarantee to not disclose individual answers and present the summarised results only on an anonymous and aggregated basis. The companies that these professionals work for include some of the most renowned institutions in corporate finance and in merger & acquisitions, namely Bank of America Merrill Lynch, Crédit Agricole, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, HSBC, Jefferies & Co, Morgan Stanley and UBS. The results of the research produced on an aggregate basis over the responses from the 30 corporate finance and banking professionals are explained below.

a) Familiarity with the Term "Virtual Organisation"

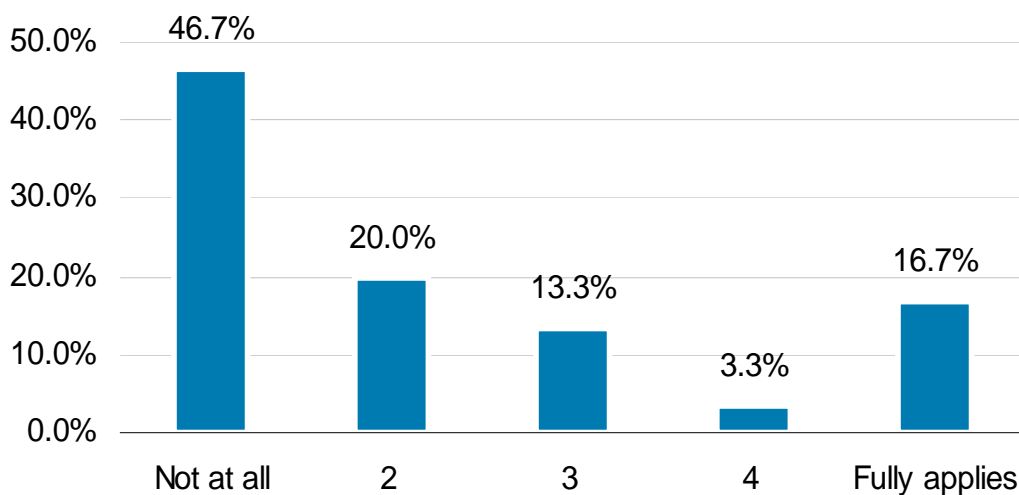


FIGURE 15: FAMILIARITY WITH THE TERM "VIRTUAL COMPANY/ CORPORATION" OR "VIRTUAL ORGANISATION".

Source: Empirical survey

This first question was posed to enquire about the familiarity of the corporate finance professionals with the term "virtual company/ corporation" or "virtual organisation". Nearly half of the surveyed people claim to be *not familiar at all* with the term and only 16.7% indicated that they would be fully aware of it with one person indicating that it would know about it. This response is on one hand rather surprising when looking at the relative popularity of virtual organisations in modern business *theory*. On the other hand it underlines empirically the fact that virtual corporations and organisations are not much known in the real praxis of the business world and especially within corporate finance. Insofar they confirm the observation from the case study that real virtual organisations in the scholar's sense of the term could not be identified amongst the companies selected for the case studies.

b) Association of Virtual Organisations with the Finance Sector

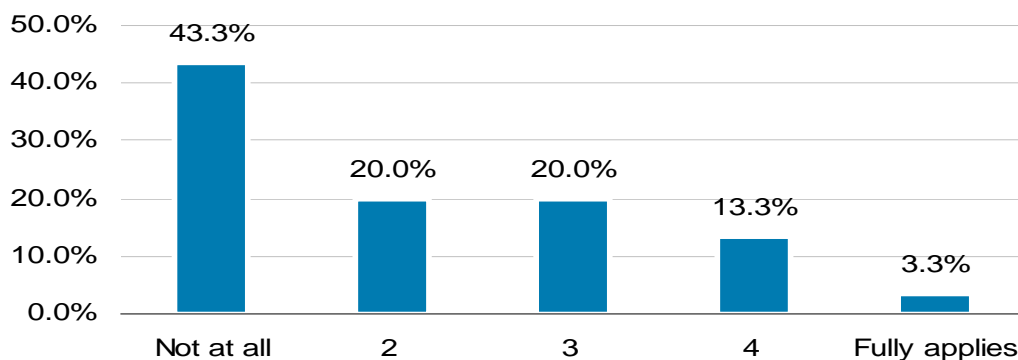


FIGURE 16: I ASSOCIATE THE TERM “VIRTUAL ORGANISATION” WITH THE AREA OF CORPORATE FINANCE AND / OR INVESTMENT BANKING.

Source: Empirical survey

The second question asked the target group of corporate finance professionals if they would associate the term “virtual organisation” with the area of corporate finance and / or investment banking. Given the results from the first question with many professionals being oblivious about virtual organisations and indicating that they would not be familiar with the term, the results to this question seem rather logical. The majority of surveyed professional are not associating the term “virtual organisation” with the area of Corporate Finance or Investment Banking in general. This further underlines from an empirical perspective the difference in popularity of virtual organisations in real life praxis vis-à-vis the business theory. It is surprising that although some professionals indicated in the first question that they would be fully familiar with the term, only one indicated that it would fully apply to corporate finance and / or investment banking and four indicated that they would see it in close proximity to this field.

c) Association of Virtual Organisations and Cooperation Forms

The third question of the survey intends to further narrow down the understanding of the finance professionals in regards to virtual organisations and if in their view they associate the term with the discipline of Mergers & Acquisitions, i.e. if they perceive it as an aspect of corporate strategy, corporate finance and management. The responses in this case were again surprising if one would look at the question in an isolated manner, but in line with the answers to the previous questions posed to the professionals as only one professional answered that he would fully associate the term of the virtual organisation with Mergers & Acquisitions and four professionals opted for choice number 4, meaning that they see the term in close proximity to the are of Mergers & Acquisitions. Most of the responding finance professionals and in total 63% of the surveyed group, did not

see a connection between the two terms and consequently answered by rather choosing options 1 (not at all) and 2. Six professionals or 20% of the surveyed sample opted for the middle neutral choice number 3 indicating that they would not incline placing the term virtual organisation near to M&A or very far from it. Given the results of the first two questions, rather this percentage might be considered as surprising than the first two ones.

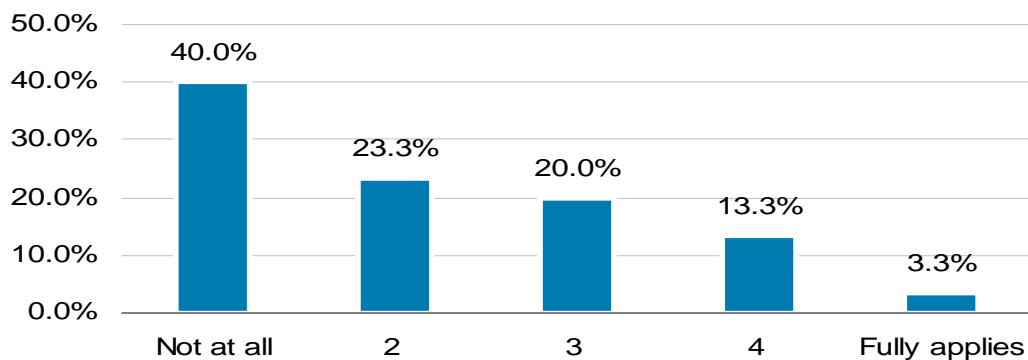


FIGURE 17: I ASSOCIATE THE TERM “VIRTUAL ORGANISATION” WITH THE AREA OF MERGERS AND ACQUISITIONS.

Source: Empirical survey

d) Association of Virtual Organisations and Cooperation Forms

The fourth question of the survey intended to find out if the finance professionals associate the term virtual organisation with the area of cooperation forms. The clear majority of surveyed professionals answered that they would clearly see virtual organisations as a cooperation form. Another seven professionals or 23% saw it in close proximity to cooperation forms. Only four professionals or 13% did not see virtual organisations as a cooperation form and three people were undecided in either direction. This answer clearly shows that the finance professionals, with the majority having an education in

business or economics, have already heard of the cooperation form of the virtual organisation. As can be seen from the respective answers to the previous questions however, , the professionals are not fully familiar with the term and the meaning that it has in the business literature.

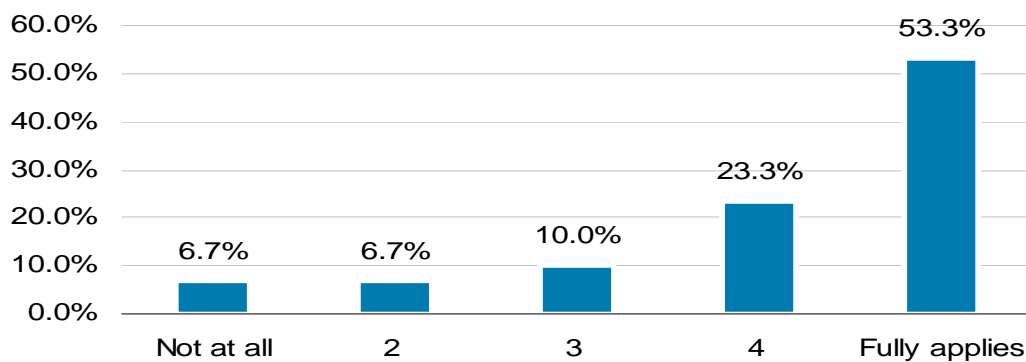


FIGURE 18: I ASSOCIATE THE TERM “VIRTUAL ORGANISATION” WITH THE AREA OF COOPERATION FORMS.

Source: Empirical survey

e) Having encountered the term “Virtual Organisation” on a professional basis.

The fifth and last question for the corporate finance professionals was structured with the aim to find out if the surveyed target group of individuals has ever encountered the term “virtual organisation” on a professional basis. From the answers given to this question it can be inferred that 20% seem to have encountered the term on a professional basis with the majority of responses being that they have not encountered the term on a professional basis. This further highlights the assumption that virtual organisations as described by scholars are not fully known in modern business practice. Looking back to question 1 shows that exactly the percentage of respondents stressing that they had encountered the term Virtual Organisation also stressed being familiar with the expression.

In other terms this means that professionals without professional involvement do not know the term at all.

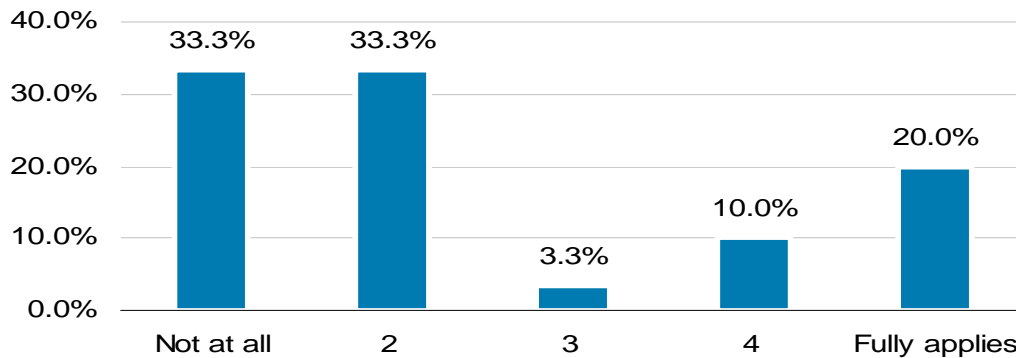


FIGURE 19: I HAVE ENCOUNTERED THE TERM “VIRTUAL ORGANISATION” ALREADY ON A PROFESSIONAL BASIS.

Source: Empirical survey

As a summary of findings it can be inferred from the responses to the five questions, that corporate finance business professionals across Europe, despite the popularity of the subject in modern business literature and business theory, are not very familiar and often not knowledgeable about the cooperation form of the virtual organisation. It can also be stated that they in majority do not associate the term with their field of work, the area of corporate finance and banking, or the more specialised area within this field, mergers and acquisitions. On another note, professionals familiar with virtual organisations have come across the term on a professional basis. The majority of respondents clearly associate the term at least with the area of cooperation forms shown basically understanding for its meaning. This does not change the fact, however, that virtual organisation have

not yet reached the business reality at least of the European finance industry as far as the answers of the 30 respondents of the presented research is taken into account.

4.3 Empirical study: Technology companies

4.3.1 Chapter Overview

This chapter explains the empirical study that has been made in this dissertation based on a selected number of listed companies of the German stock market and in especially the TecDAX index. Due to a large number publications in management literature about the revolutionary advantages that virtual corporations seem to have according to the researchers , some of these aspects should to be found and reflected in modern business praxis by now.²⁰⁷ Due to the fact that contrary to conventional companies, according to theory virtual companies form themselves for a limited period of time in order to pursue a common objective, the collaboration of virtual corporations is categorically temporary.²⁰⁸ It is therefore to some extent difficult to observe them in real life business praxis and to measure them empirically. Since there exist up to now only very few empirical studies apart from single case studies about virtual corporations²⁰⁹ and as the topic is not clearly defined in the economical discussion, a study providing evidence regarding the diffusion of virtual corporations in business praxis obviously makes sense.

This empirical study attempts to examine the business praxis to see how “*virtual*” companies in the German benchmark index TecDAX act in economic reality in comparison to the academic theory. Furthermore this empirical study will test whether these surveyed companies do have the typical characteristics of virtual organisations as outlined in this thesis previously.

²⁰⁷ Cf. Davidow/Malone (1992), Byrne (1993), Wüthrich,/Phillip/Frentz (1997).

²⁰⁸ Cf. Aschenbach (2000), p. 17.

4.3.2 Results of the survey

The results of the research among the listed technology companies in Germany are presented descriptively in the following and are comprised in the respective groupings.

a) Statement regarding the self-perception as a virtual company

The question of the self-image as a virtual corporation brought the result that most of the questioned companies do not consider themselves as a virtual company. The very open formulated question and the answer proposition with the possibility to choose medium values made it possible for the respondents to not decide on a certain statement. Due to the various existent definitions of a virtual company and also due to the diverse use of the term in the press and in management literature, respondents probably had different opinions about what is to be understood as a virtual company. Therefore it was to be expected that some of the interviewees would choose a medium value as their answer.

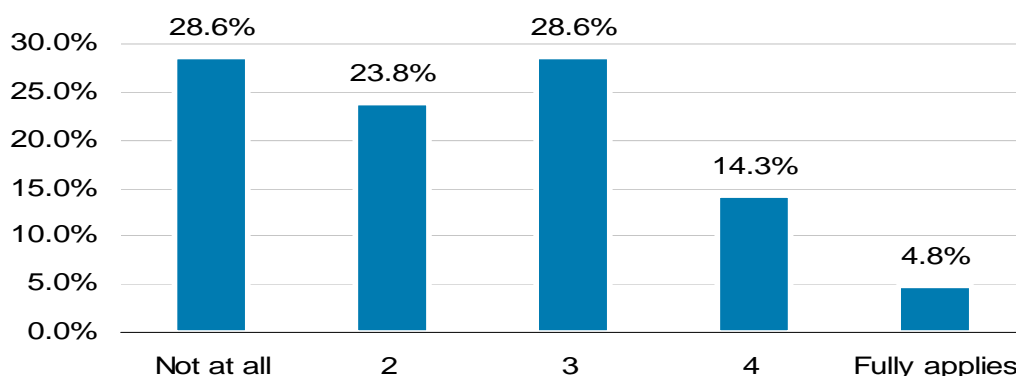


FIGURE 20: SELF-PERCEPTION AS A VIRTUAL COMPANY.

Source: Empirical survey

²⁰⁹ Cf. Büschken (1999), p. 786.

The distribution of answers clearly shows that among the participants of the empirical study there is the tendency not to see themselves as a virtual company or virtual organisation. Moreover there exists a clear tendency of companies with a high share of e-commerce to perceive themselves rather as a virtual company than other companies with a lower share. The companies that see themselves rather near a virtual company all have a high or medium quota of e-commerce. Following this logic, also the company that considers itself as virtual company is Software AG, a provider of business infrastructure software solutions.

b) Statements regarding inter-organisational aspects

The survey shows that the aspects that characterise a virtual corporation are by all means common in modern business praxis. They seem to be independent from one another as the average of the statements to the respective questions are rather different.

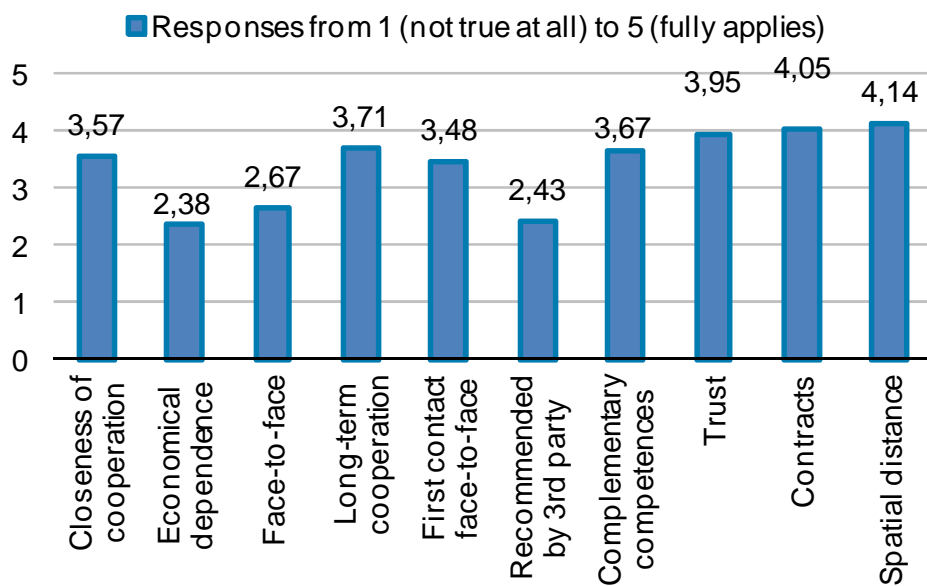


FIGURE 21: AVERAGES OF INTER-ORGANISATIONAL ASPECTS.

Source: Empirical survey

The frequency distribution regarding the question about the intensity of the cooperation relations is not surprising and a tendency towards interdependent company structures can be found in almost every company.

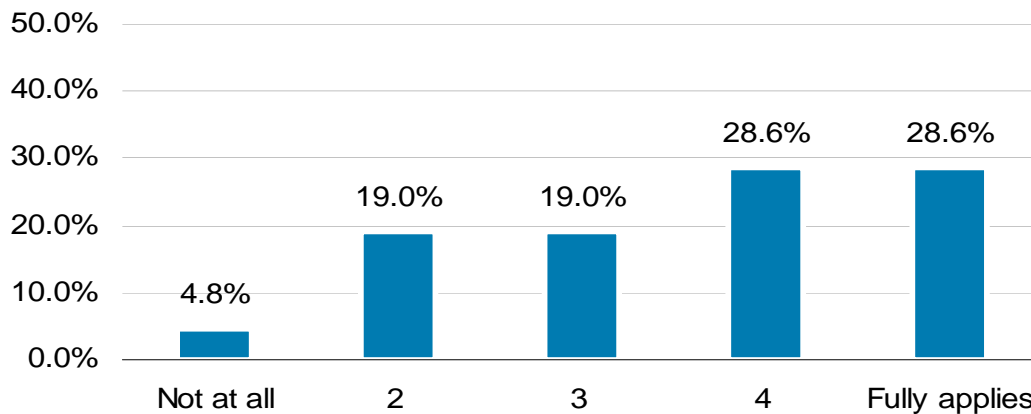


FIGURE 22: WORKING CLOSELY TOGETHER WITH (COOPERATION) PARTNERS.

Source: Empirical survey

This is particularly the case for companies of minor dimensions, as they are being principally found in the main unit of the survey. Lacking competences are being compensated by cooperation. This view is also confirmed by the distribution of the answers in regard to question 8.

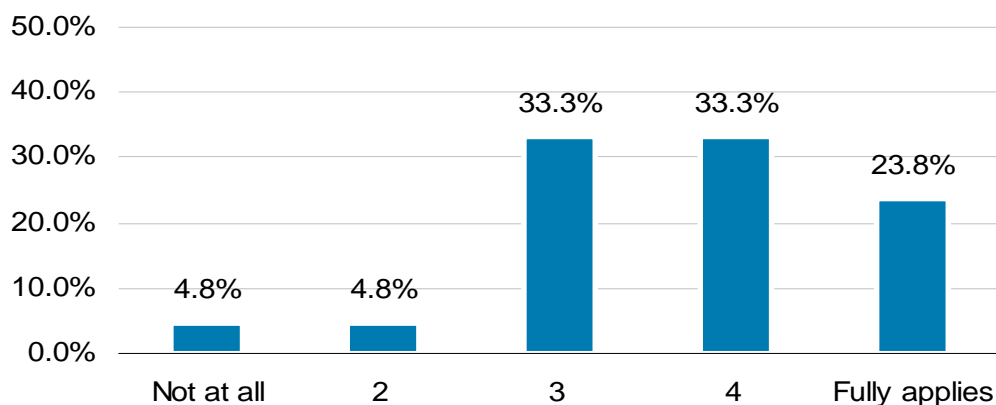


FIGURE 23: COMPLEMENTARY COMPETENCES.

Source: Empirical survey

Despite the fact that also *horizontal cooperation* do not seem to be uncommon, nearly two thirds of the surveyed companies rather tend towards cooperation, in which missing competences are being brought into the cooperation. At the same time, there is some basis for the perception that cooperation often take place between equal partners.

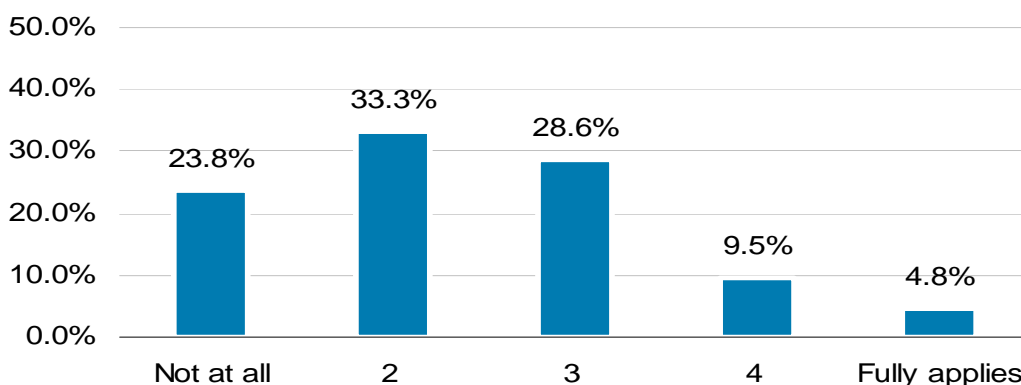


FIGURE 24: DEPENDENCE ON COOPERATION PARTNERS.

Source: Empirical survey

The frequency distribution of question number 3 on the economic independence of the cooperation partners shows in particular that they are not or only slightly dependent on each other in most cases. When looking at the statements on *spatial distance*, it becomes

evident that the traditional cooperation networks with regional or local partners clearly are not dominant within the surveyed companies. Most companies stated that they are rather involved with European and Global partners rather than national partners. The fact that none of the companies does mainly cooperate with other companies on a local or regional level indicates that on the contrary to technological areas in the USA, such as Silicon Valley, those areas do not seem to be existent to the same extent in Germany and that is why the companies tend to ally with supra-regional and namely national, European and global partners.

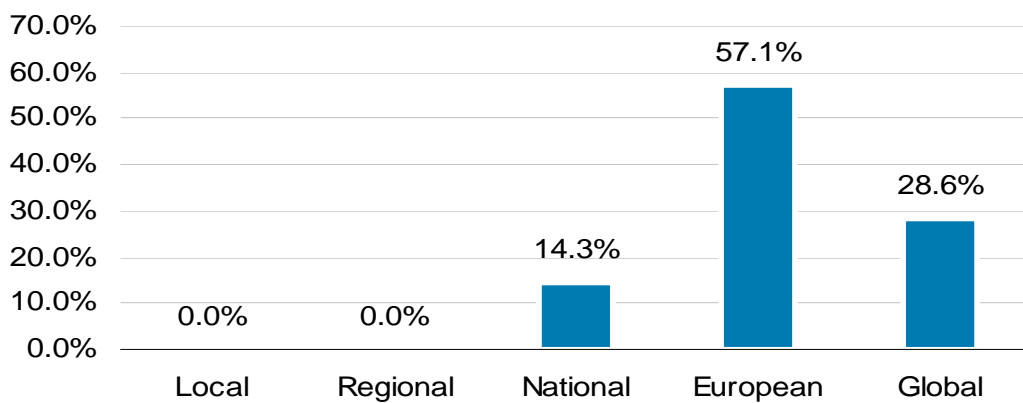


FIGURE 25: SPATIAL DISTANCE TO COOPERATION PARTNERS.

Source: Empirical survey

Also the abovementioned trend towards globalization seems to be reflected in the results of the survey. Almost two thirds of the surveyed companies declared that they cooperate mainly on a European or global level. Even if it might seem up-to-date for the companies to cooperate on a global or European level and therefore a answer tendency towards these choices seems likely, such cooperation are indeed represented strongly. Global cooperation, as they can be found in the ideal type of the virtual corporation according to business theory, are therefore often found. The question on the duration of the coop-

eration indicates that the respondents are clearly outlined for the long-term and that no companies undertake predominantly short-term partnerships and cooperation.

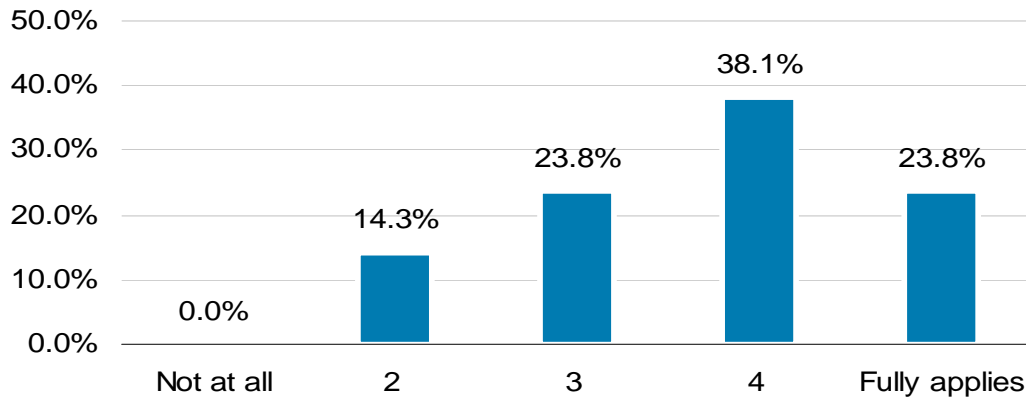


FIGURE 26: LONG-TERM COOPERATIONS.

Source: Empirical survey

The general approval of long term cooperation is not a surprise, as trust and long-term collaboration are decisive factors for a cooperation. It would however be wrong to exclude short term cooperation on the basis of this result of the survey completely. If at virtual companies there can be a *network pool* presumed in which there are stable long-term relationships between the single network pool members, which only become active as and when required by a company, it still represents a form of long-term cooperation at the end.

The result of the responses in regards to the *use of information and communication technology* between the cooperation partners does not seem very useful. As expected, a tendency towards the use of information and communication technology instead of personal meetings in the daily business life is notable. Looking again at the results of the question on spatial distance of the cooperation partners then it appears only logical that for preferably national, European and global partners personal meetings are rather sel-

dom, as they would naturally require a considerable effort of both time and money.

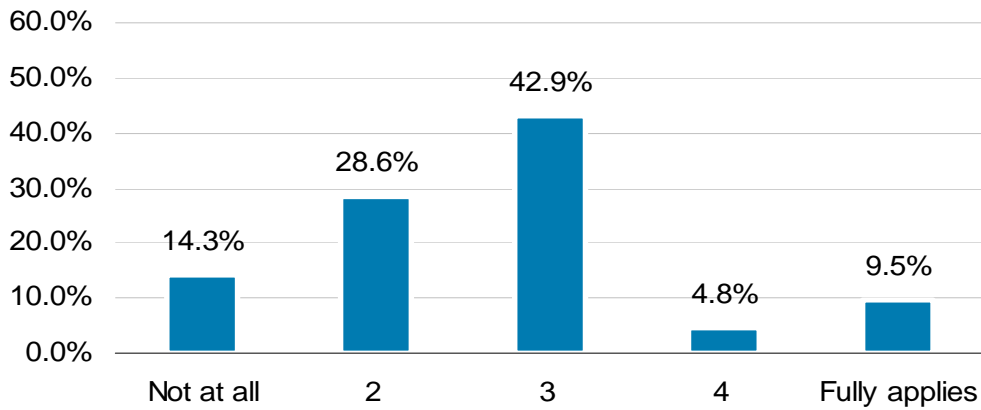


FIGURE 27: FACE-TO-FACE VS. COMMUNICATION TECHNOLOGY.

Source: Empirical survey

While the previous question concerned first and foremost the *daily business contact* with the cooperation partners, the question regarding the first contact with the cooperation partners deals with the for the creation of trust very important first meeting between the future cooperation partners.

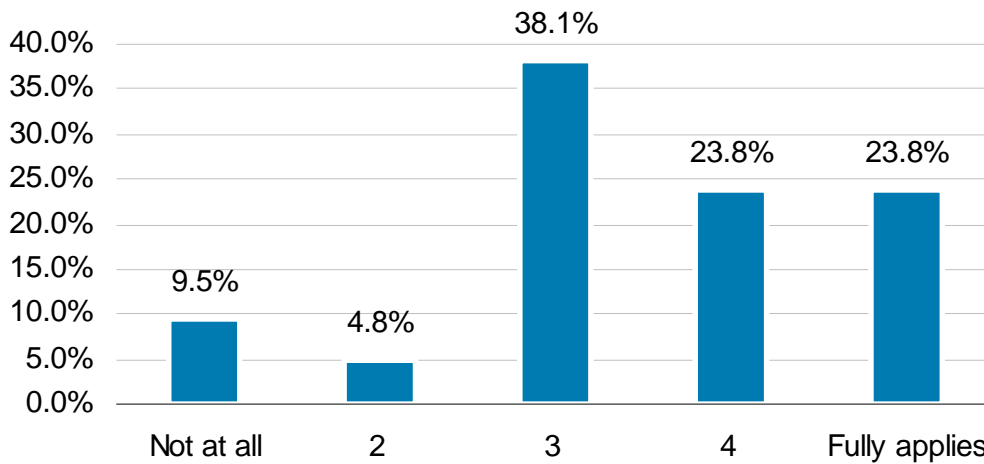


FIGURE 28: FIRST CONTACT PERSONALLY OR VIA COMMUNICATION TECHNOLOGY.

Source: Empirical survey

Here it becomes evident that in terms of *first meetings* face-to-face contacts widely prevail. This confirms the view that for the first confidence-building meeting the initial face-to-face contact is still of major importance. At the same time, the responses infer that nearly 10% of the respondents renounce on face-to-face contact at the initial encounter. The fact that cooperation partners are directly recommended by other partners is not reflected in the results.

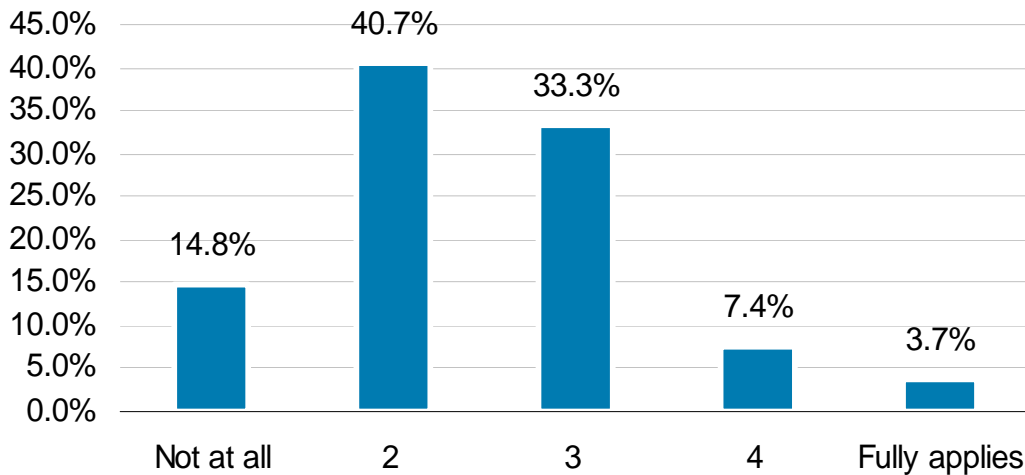


FIGURE 29: COOPERATION PARTNERS RECOMMENDED BY 3RD PARTIES.

Source: Empirical survey

For the most part, it seems as if the cooperation partners find each other by chance, without the involvement of third parties in the process. That is why it can be assumed that a contact to third parties, which have the required experience with cooperation partners, does often not exist.

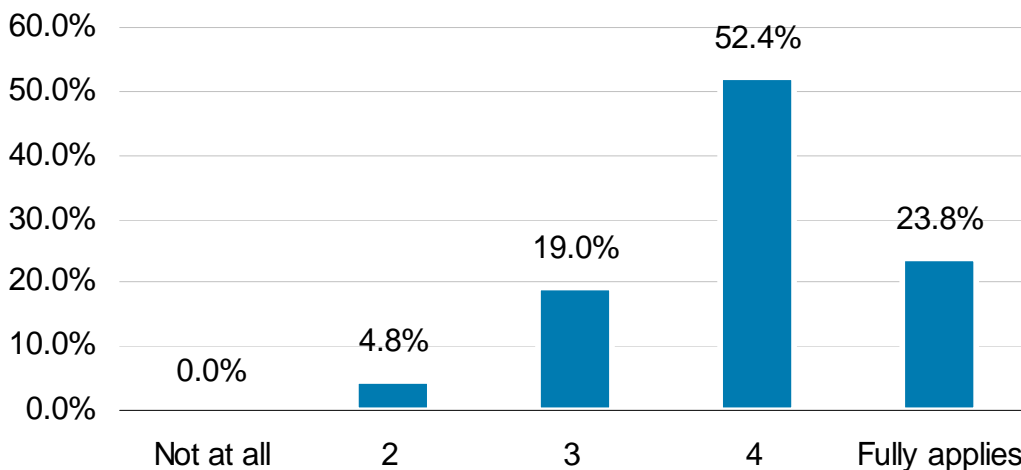


FIGURE 30: RELATIONSHIP OF TRUST WITH PARTNERS IS STRONG.

Source: Empirical survey

The results of the survey basically confirm that *trust* plays an important role within any cooperation. Over three quarters of the respondents declared that they cooperate trustful-

ly with their partners. It can therefore definitely be constituted that trust is identified as an important variable for relationships of cooperation in modern business praxis. Any other result, however, would appear quite surprising because there are obviously no good reasons to work together with individuals or companies in another than a trustful atmosphere.

It might be surprising, however, that there is obviously no direct relationship between the characteristic of the relationship of trust and the formulation of contracts. A formulation substituted by trust rather than contracts is often named as a central advantage of virtual corporations as it naturally lowers the transaction costs. This does not seem to be the case at all in business reality.

The responses to this questions seem to be a *cultural problem*. A formulation of contracts leads in some culture areas, including Europe, to an increase of trust. An intercultural empirical research on trust and the formulation of contracts between US-American business people and Japanese business people, showed significant differences.²¹⁰ Americans, according to the research see in contrast to the Japanese a stronger basis of trusts when seeing formulated contracts than when seeing loosely formulated contracts. Japanese assess the basis of trust similarly, independent of the exactness of the formulations. Having said that, they assess the chances for success for cooperation with formulated contracts as lesser. For Japanese managers for instance, rather the personal relationship plays the trust building role.²¹¹

²¹⁰ Cf. Neubauer (1999), p. 108.

²¹¹ Cf. Sydow (1991), p. 242.

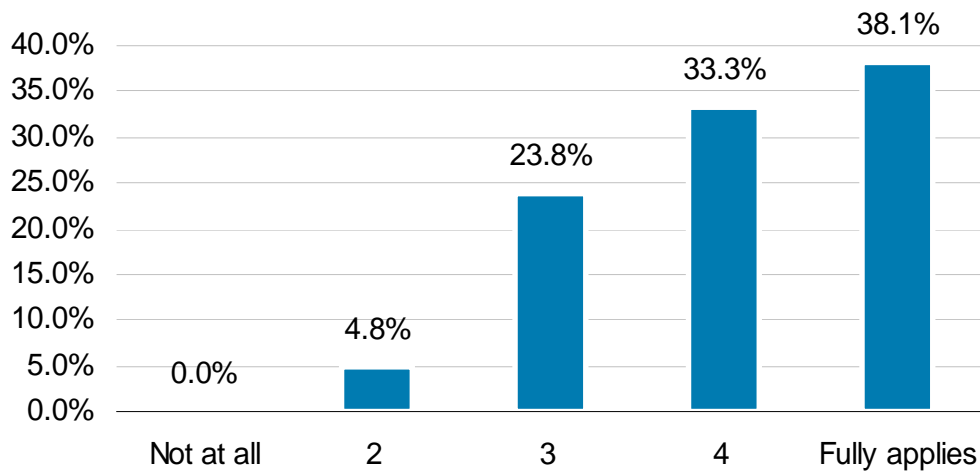


FIGURE 31: CONTRACTS VS. TRUST.

Source: Empirical survey

The survey therefore clearly shows that on the one hand formulated contracts rather lead to trust, but that on the other hand the important advantage of virtual corporations often mentioned in literature, at least in the survey group, does not play a major role in business praxis.

c) Statements regarding intra-organisational aspects

In this empirical research also distinctive characteristics that virtual corporations allegedly have according to literature are investigated. Part of these characteristics are *intra-organisational angles* in regards to the internal use of information and communication technology as well as the quota of telework. In addition to that, aspects regarding e-commerce were questioned as well. The frequency distribution for the internal use of information and communication technology (average value 3.43 shows that for the internal communication, information and communication technology is used slightly more

often than for communication between the cooperation partners. In this regard the average value was 3.33.²¹²

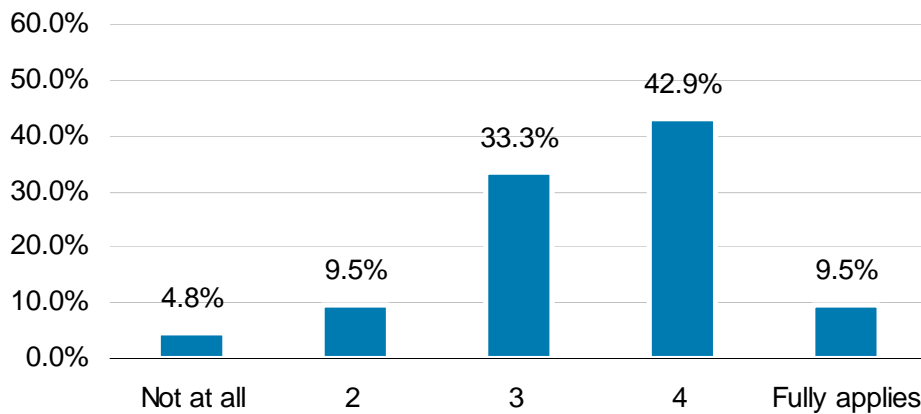


FIGURE 32: INFORMATION AND COMMUNICATION TECHNOLOGY FOR INTERNAL COMMUNICATION.

Source: Empirical survey

This result might insofar appear somewhat surprising, as the spatial closeness internally is higher than to the respective cooperation partners, which are normally not to be found regionally. This result is also in line with the research of Picot and Reichwald, which identified the use of information and communication technology not as a substitute for business travelling.²¹³

The frequency distribution in regards to the response to the use of telework shows a result that could have been expected as obviously rather telework open-minded companies have been questioned. This orientation was at least to be expected due to the fact that

²¹² The average of the respective answer is 2,67 in an inverse meaning. The value five denominates face-to-face-contact only. The average has been equally rescaled.

²¹³ Picot/Reichwald/Wigand (2001), p. 98f.

companies listed on the Tec-DAX usually are involved in technology-oriented businesses.

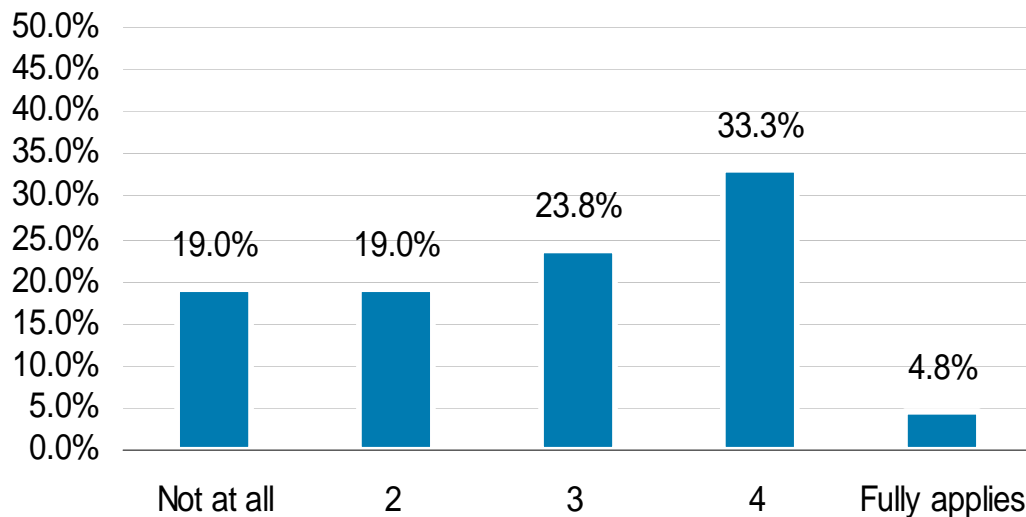


FIGURE 33: POPULARITY OF TELEWORK.

Source: Empirical survey

However the popularity of telework seems rather low in relation to its potential as only around 37% of the TecDAX listed companies report a higher occurrence of telework with in their companies while in nearly half of the surveyed companies a low occurrence can be seen.

One reason for this finding might be, however, that telework is yet to *old-fashioned* for employees of technology companies. Given for instance that the trend of *consumerization of IT* as it has been described above has become quite common particularly in technology companies and particularly under younger employees they are probably not willing to use any telework devices at home instead of using their own devices like iPads and similar instruments to work wherever and whenever they want to work also outside of the company or the home office.

d) Cross-question analysis using chi square test

For the cross-question analysis a chi square test was used to test the two following hypotheses:

Hypothesis 3:

The cooperation of the company and its partners is closer if the time scope of cooperation is longer

The result of the third hypothesis and the first hypothesis of the chi square test is 0.94, meaning that companies working closely together with their cooperation partners is dependent on companies' cooperation being established rather on a long-term than on a short-term basis is **true**. This also seems rationale from a business perspective as close cooperation normally develop over time. The compared answers can be further illustrated in the following histogram. The x axis shows the respective companies that gave their answer to this request, while the y axis shows the values that they have given from 1 (not true at all) to 5 (fully applies) to both parameters "closeness of cooperation" and "long-term cooperation".

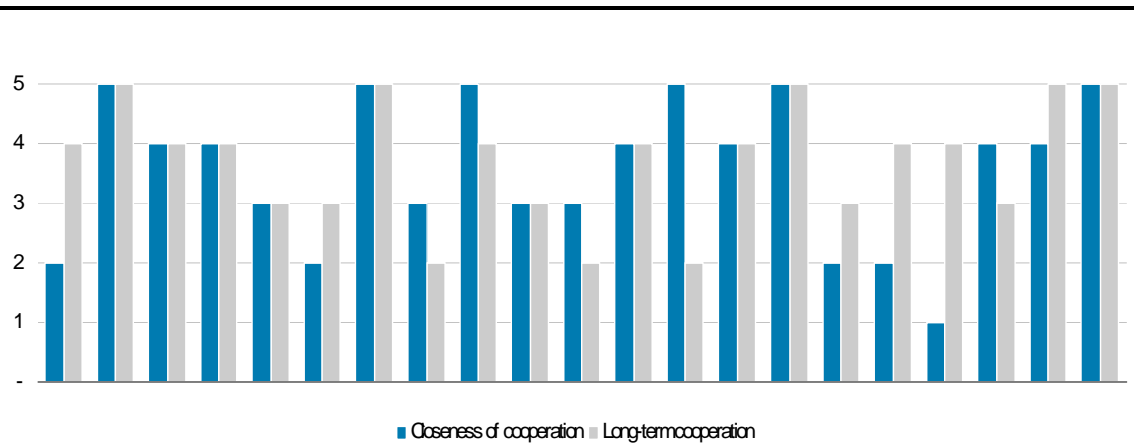


FIGURE 34: CROSS-QUESTION ANALYSIS: CLOSENESS OF COOPERATION VS. LONG-TERM RATHER THAN SHORT-TERM BASIS

Source: Empirical survey

Hypothesis 4:

The existence of formal legally reviewed agreements is higher in comparison to informal, verbal agreements is dependent on the geographic and territorial distance of the partners.

The test of the fourth hypothesis and the second hypothesis of the of the chi square test (hypothesis 4) is that agreements with the companies' cooperation partners are done in legally reviewed and detailed contracts rather than in informal, verbal agreements is connected to territorial distance of their partners is also true as a strong dependence is expressed by the 1.00 result of the chi square calculation. This is also not surprising as all the surveyed companies of the TecDAX Index are listed on the highest standard on the stock exchange and as a consequence have to adhere to strict corporate governance rules and strict internal controls and audits when working together with their often globally distributed cooperation partners. This can be graphically illustrated in the following histogram. The x axis shows the respective companies that gave their answer to this

request, while the y axis shows the values that they have given from 1 (not true at all) to 5 (fully applies) to both parameters “contracts” and “spatial distance”.

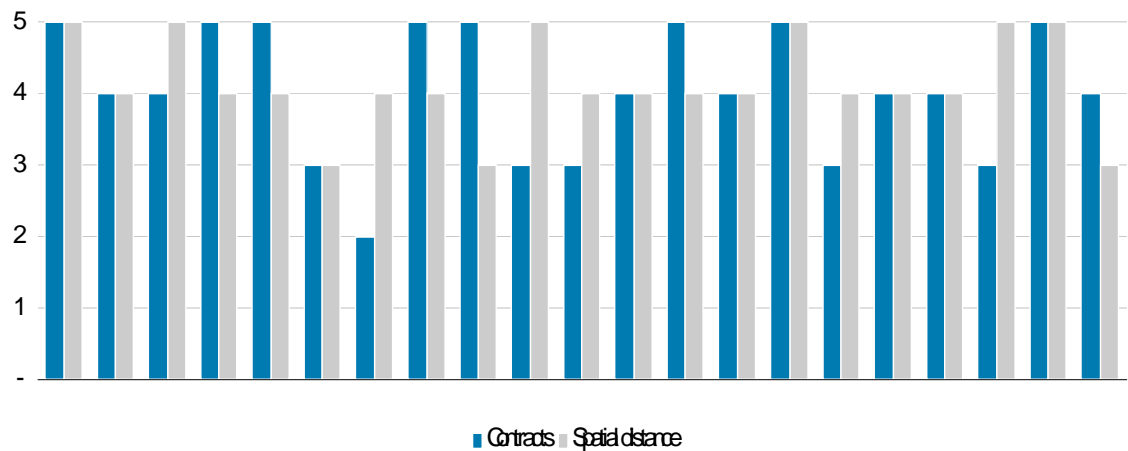


FIGURE 35: CONTRACTS VS. SPATIAL DISTANCE
 Source: Empirical survey

e) Other results of the survey

As illustrated above, the main unit of the survey, the TecDAX Index includes in the introductory part to the survey the 30 biggest technology companies of the Prime Standard (highest listing standard on the stock exchange in Germany). As the stock exchange performed rather positive over the last year, most companies stated that they have achieved their business objectives for the last year. However it has to be noted that the subjective impression of the individual company development has been given here and that the respective business success is also dependent on various other factors, which have no reference to virtual companies.

As the overall business success is relatively difficult to measure, the subjectively felt success according to the self evaluation of the achievement of the business objectives is measured here. The result show that about the half of the companies were fully satisfied

with their success supporting the presumption that a similar number of companies also are convinced doing business in the right way to achieve the respective aims also in the future.

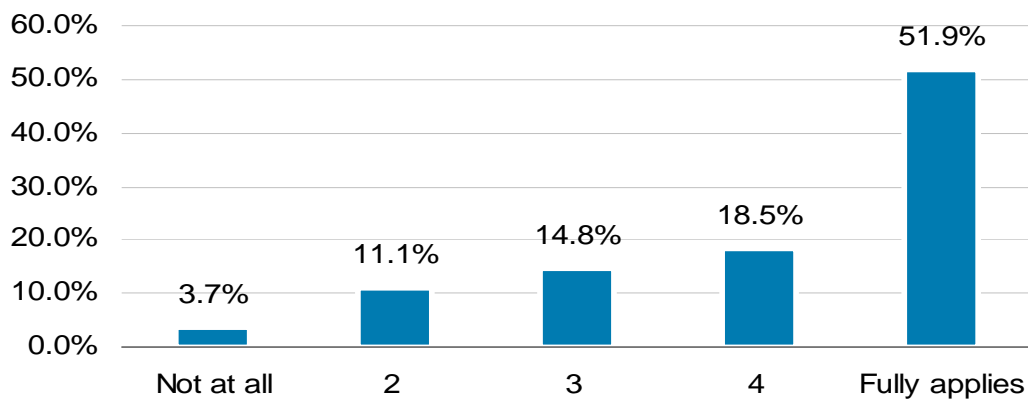


FIGURE 36: BUSINESS OBJECTIVES WERE MET?

Source: Empirical survey

4.3.3 Conclusion of the results of the survey

Hypothesis 1:

There exists a positive correlation between the self-evaluation as a virtual company and distinctive characteristics of a virtual company (e.g. temporary character of the cooperation, economic dependence on the cooperation partners, use of information and communication technology, orientation on core competences, trust etc.).

The first hypothesis aimed at determining if the surveyed companies (and therefore their employees answering the questions) would perceive themselves as virtual companies and would at the same time show distinctive characteristics of a virtual company according to theory. The first hypothesis is **rejected** as most companies do not perceive them-

selves as being *virtual* although they clearly show certain distinctive characteristics of a virtual company.

It is noteworthy that the revenue share which is achieved with e-commerce and the self-perception as a virtual company are connected. It can therefore be concluded that the self-perception of a virtual company is influenced by the consequent use of information and communication technology.

At the same time it can be established that companies which perceive themselves close to being virtual, do also have a business model which is closely aligned to the internet or where the internet plays an important role for the company's business and its employees.

The fact that most companies respective their employees to not perceive the company to be virtual contradicts numerous definitions in business literature, which emphasize the inter-organisational aspects of virtual companies. Apparently there is an alternative understanding in the business praxis in regards to virtual companies. Companies are perceived to be *virtual* if there is a consequent use of the possibilities of the information and communication technology in these companies. This can be seen from outside in the observation of telework and a high share of e-commerce at these companies. In real life business praxis there is apparently another image of virtual companies prevailing than in the numerous scientific publications. The way business is virtual until now is about virtual teams and the use of modern technologies of communication. Companies, however, seem not to find compelling reasons to form inter-organisational structures which force them to share control about their business activities with other corporations. Trust obviously finds it limits when it comes to sharing control.



Hypothesis 2:

Particular distinctive characteristics that are theoretically attributed to virtual corporations can be also be found in real life business praxis.

The second hypothesis aimed at determining if the single characteristics which are attributed to virtual companies can be observed in the business praxis. It is principally the case that these characteristics are often found in business praxis. Some controversial points in literature as for example the necessity to create trust only via face-to-face contacts are reflected in the survey. The second hypothesis is consequentially **not rejected**.

As another result of the survey it can be confirmed that also in terms of an increasing spatial distance to the cooperation partners the use of information and communication technology does not substitute the need of travelling in order to achieve real face-to-face meetings. This is in line with results from other research²¹⁴ and allows the conclusion that the majority of the surveyed companies does not want to abstain from personal face-to-face meetings despite the often significant spatial distance.

Furthermore, it can be noted that most of the respondents stated to do business with companies from Europe or other continents rather than with local or national companies. Therefore it might be assumed that the management of cultural differences becomes more and more important in the future. As shown by citing the DaimlerChrysler case cultural incompatibilities are serious threats to the proper functioning of mergers, but also for all other forms of trans-cultural collaboration and under this aspect serious threats for the success of companies; they influence the performance of companies far

²¹⁴ Picot/Reichwald/Wigand (2001), p. 98f.

beyond the merger process²¹⁵. Virtual collaboration in any form needs – as shown in this thesis – *trust*; but it also needs a broad understanding for cultural diversity being a *pre-requisite* of trust.

²¹⁵ Genk et al. (2003).

5 DISCUSSION

While the changes of the competitive environment mentioned at the beginning of this thesis have influenced especially the recent years, there are different models for further discussion in sciences as to how the different economies will develop in the future. The assumptions based on the various scenarios foster the speculation that virtual organisations will have a meaningful future.

5.1 Dissolution of traditional company borders

By taking a look at the media and business news in particular, one can easily see that many corporations continue to try to secure their future competitiveness via the more traditional mergers and acquisitions.

As enterprises have been as before traditionally defined by the determination of their borders, i.e. right of property, right of disposal, standardized management or business segments, their identity will change significantly in the future, as these borders are losing more and more of their importance.²¹⁶

In new virtual organisational structures products, services or projects, which will not be limited to single companies, will have the identity forming functions as with the inclusion of third parties for the accomplishment of specific services, which are legally and economically independent, the previously existing borders will be softened. The preservation of independence will not be possible anymore as a quasi-integration will take place.²¹⁷

²¹⁶ Cf. Hofmann (1996), p. 62, 66.

²¹⁷ Cf. Picot/Reichwald (1994), p. 547, 560.

In the future, companies will increasingly involve external parties in original tasks, which will lead to an increasing blurring and contourlessness of traditional borders drawn to the market and to the dissolution of the traditional company structure.²¹⁸ Higher levels of virtualness will typically require communication across organisations and the creation of borderless networks of individuals.²¹⁹

As within the framework of the collaboration all parties have to reveal some internal matters in order to carry the end product to a success and as the logical interconnection without clear strategy to separate the participants develops, it will be unclear where the respective corporate entity ends.²²⁰ The previously existing corporate hierarchies will be replaced or indirectly guided by peripheral, modular formations, which will be characterized by autonomy and cooperation.²²¹ The more the borders of corporates will dissolve, the more the significance of traditional leadership, which is characterized by order and control, will decrease.²²²

5.2 Disintegration

While in the US for example, 30 years ago every fifth jobholder was employed by one of the five biggest corporations, this number came down significantly to now approximately 10%.²²³ There can be a clear tendency observed that big and large corporations are increasingly dissolving or segmenting while on the other side autonomic corporate entities are joining forces in cooperation.²²⁴ This disintegration is often executed so that

²¹⁸ Cf. Picot/Reichwald/Wigand (2001), p. 289 f.

²¹⁹ Cf. Adams/Morris/Scotter (1998).

²²⁰ Cf. Davidow/Malone (1992), p. 159 ff.

²²¹ Cf. Bullinger/Brettreich-Teichmann/Fröschle (1995), p. 18, 21 f.

²²² Cf. Malone/Laubacher (1999), p. 28, 30.

²²³ Cf. Malone/Laubacher (1999), p. 28, 30.

²²⁴ Cf. Bullinger/Brettreich-Teichmann/Fröschle (1995), p. 18, 22.

the respective companies can focus on certain special tasks and functions. If all the companies would follow all tasks and functions simultaneously, this would normally lead to conflicts of objectives, which would weigh negatively on the results of the business.²²⁵

These in this way assembled virtual companies will be partly volatile organisations, which will dissolve themselves after the completion of the respective task in many cases. They will then represent the counter pole to today's common company forms, which are clearly defined from a right of property and a contractual law perspective, whose location can be absolutely certain determined and which feature a durable allocation of resources and a regulated process structure.²²⁶

5.3 Managing cultural differences

Cultural differences create confusion, resistance and negative emotional responses hindering the humans working in a company to perform as they could under their own cultural circumstances²²⁷. So the management of cultural differences calls for an increasing attention of companies. More and more companies not only in the US realize the significance of managing cultural differences as prerequisite for success and management assumes the central responsibility for this process. From a company's point of view culturally diverse management teams becomes the normal way to organize the work. Therefore, it might be essential to ensure that the screening process for managers as well as for employees working on a cultural diverse workplace includes an assessment of

²²⁵ Cf. Hagel/Singer (1999), p. 133, 134 ff.

²²⁶ Cf. Picot/Reichwald/Wigand (2001), p. 392.

their capability to cope with the challenges of global teams or cultural diverse workplaces in general. Companies traditionally relied on technical skills and maybe basic knowledge of the language of the target country; for a global company this will not be enough. According to some authors, companies using tools to identify the best candidates for global positions will be most successful in an increasingly open workplace.²²⁸ From this point of view, identifying people with a *global mindset* turns out to be a competition advantage. Errors that occur during the recruitment process, however, usually turn out to be very expensive for companies and also dangerous for their reputation²²⁹. Companies, however, not only need to focus whom to choose for a certain function in the organisation but also where these people will work. Companies therefore must foster environments that value cultural differences. Cultural diversity and cultural diversity management is probably essential for managers and employees working abroad; as well as for people working in *multicultural teams*. If companies fail to do so cultural differences of whichever nature may cause the feeling of isolation experienced by people on their workplace. Characteristics such as different modes of communication, lack of assertiveness, difficulty with language, and prevailing customs may serve as contributors to this sense of isolation. People suffering on their workplace for whatever reason, however, never will reach their potential expected by the company when hiring them²³⁰. With regard to the best possible performance being a crucial competition factor companies therefore not only have to pay attention to the best possible recruiting but also to the best possible workplace conditions by creating an global workplace environment. Seen in this way, the issue virtual organisation is far more than just about the way com-

²²⁷ Richard et al. (2003).

²²⁸ Javidan (2008).

²²⁹ Javidan (2008).

²³⁰ Earley, Ang, & Tan (2006).

panies work together in one form or another. It is about the future of the working place as well about the future of business organisation in more and more global economies.

6 CONCLUSION

6.1 Conclusion of the thesis

The explanation of the emergence and the theoretical foundation of the virtual organisation were mentioned in this dissertation. After that, typical characteristics and chances and risks of the organisation form followed. The empirical study then proved that the concept of the virtual organisation is not so widely known in the public and in the business praxis as other, rather known, cooperation forms such as joint ventures and strategic alliances.

Few pure virtual forms exist today.²³¹ On the other hand, many characteristics and aspects of the virtual organisation, as they are described in the relevant business and management theory, can surprisingly also be found in business praxis and in real life companies. This discrepancy of a lack of public conscious awareness on the one hand and representation of relevant characteristics of virtual companies on the other hand is made clear for the first time in research.

The comparison with other forms of cooperation shows that virtual corporations can be clearly distinguished from other forms of cooperation, despite the fact that significant similarities and common grounds can be partially observed. The relevance and the potential the cooperation type of the virtual organisation can have in the present and in the future was also discussed. Especially consortiums and working groups are closely related to virtual corporations and it has to be recognised that virtual corporations are not a new company form in every aspect, but that they are rather a special type of a coopera-

tion because of their by their fluid and temporary character.²³² Furthermore, the history over the last years shows that the cooperation type of the virtual organisation is clearly on the rise. Whether under the name virtual corporation under other denominations, this development will not be detained anymore.

There is no doubt that new developments in organisational structure, practices, and communication technology can promote the construction of new organisation designs.²³³

In business reality, however, obviously company use virtual structures to facilitate global business and also global cooperation without giving up the control over the decision processes. Therefore *virtual teams* exist and will become more and more important as the plans of IBM show. Virtual organisations, however, as described in the literature actually don't need the business' needs from today's point of view.

In a fast changing environment, which is primarily characterized by the globalization and dynamisation of markets, companies have to develop new strategies to keep up with the competition also in the future. In addition to other methods as for example the entrepreneurial solo attempt and mergers and acquisitions, virtual company forms offer in this context manifold opportunities.

The trend away from the production of standardised mass products to diversified offers geared to customer requirements will quicken the emergence of new virtual companies as well.²³⁴ More than ever virtual forms of collaboration are in the position to form timely limited cooperation and alliances, which allow opportunistic, advantageous and strategic action in the competitive environment without the need for previous long-term

²³¹ DeSanctis/Monge (1999), p. 2..

²³² Cf. Bullinger/Brettreich-Teichmann/Fröschle (1995), p. 18 f.

²³³ Cf. DeSanctis/Monge (1999).

investments.²³⁵ Although the economic framework has significantly changed over the last years, there are always new opportunities for companies opening up: “*Change is the law of life and those who look only to the past or present are certain to miss the future*” (John F. Kennedy).

6.2 Contributions to theory development

In classic organisation theory information and communication technology is seen as an instrument to optimise companies and organisations. From this perspective, the modern technology depends on the given organisational structure. Sydow and others argue that new possibilities of organisations will be created by new developments in information and communication technology. There is a great lack in the theoretical foundation of the theory on these new organisation forms, the virtual companies and virtual organisations.²³⁶ According to Singh/Sharma/Kaur virtual organisations are beginning to emerge and develop as the market conditions are right, the requested technology is now available and the drive to to it is clearly there.²³⁷ There is no doubt that new developments in organisational structure, practices and communication technology can promote the construction of new organisational designs.²³⁸

The purpose of this research is to contribute to theory regarding the drivers of change towards the virtual organisations, the changes occurring in organisation structures and especially on the economic and technological influences that lead to the emergence of these new organisational forms. It also aims to define the virtual organisation and highlights the primary elements and characteristics that enable an effective virtual environ-

²³⁴ Cf. Mayer/Kram/Patkos (1998), p. 11.

²³⁵ Cf. Bullinger/Warnecke (1996), p. 52 f., Scharfenberg (1998), p. 29, 31.

²³⁶ DeSanctis/Monge (1999), p. 1.

²³⁷ Singh/Sharma/Kaur (2011), p. 1.

ment. While research studies have previously been published regarding virtual organisations in general, studies analysing the actual knowledge about the subject and its applicability in business praxis are very limited. Especially lacking are studies regarding business professionals and stock exchange listed companies in Europe. This research aims to contribute to theory as to how and to what extent the cooperation form of the virtual organisation is represented in actual modern business reality. In other words, this research aims to fill the gap in the existing literature with regard to virtual organisations characteristics and their effects on economic reality in the real business life. Its main objective is to contribute by identifying the key determinants of virtual organisations and to compare scholar's theory and businesses' reality. It aims to answer a general question - what determines virtual organisations in the real business world.

6.3 Contributions to practice

According to Albert Einstein “reality is merely an illusion, albeit a very persistent one.” This could be translated in the organisational theory meaning that only the output and the outcome for the client should be the relevant factors in assessing an optimal organisational structure for a company. Because purely virtual firms are still rare, the processes for developing virtual organisations and the eventual impacts of virtuality are still unknown.²³⁹

With this in mind, this research aims to contribute to the insight that virtual organisation forms could prove to be a viable alternative to classic and traditional cooperation forms such as mergers, acquisitions, strategic alliances, joint ventures and others in business practice. Although the above mentioned traditional cooperation forms are widely known and often discussed in the relevant press of economic and business papers and maga-

²³⁸ DeSanctis/Monge (1999), p. 7.

²³⁹ DeSanctis/Monge (1999), p. 2.

zines, the same is not true for the cooperation form of the virtual organisation. Empirical research via structured interviews of 30 experienced professionals in the field of corporate finance was used to collect the data from which it could be shown that this particular organisational form is not widely known in the relevant group of professionals in general and that it is not associated with the relevant field of corporate finance.

Contrary to popular research that stipulates that the working of virtual organisations is quite different from traditional organisations²⁴⁰, a second structured interview survey among the 30 largest listed technology companies in Germany revealed for the first time that many characteristics of the virtual organisation as they are mentioned in theory can already be found in modern business practice among listed companies. It is shown that the tendency for virtual organisational structures increases if companies work together for a longer time and when they are closer in terms of distance to each other.

This research therefore aims to contribute to practice to the insight that virtual organisation forms are a realistic possible cooperation form that could be a viable alternative to classic and traditional cooperation forms. It also aims to demonstrate that virtual organisations are a necessary part of the organisational structure and that they can offer great opportunities to create ever more capable teams across an endlessly scattered global world.

This insight is especially viable for companies that work closely together and that are incorporated in short distance to each other. The need to understand the critical characteristics of effective virtual organisational structures and how to avoid the potential negative aspects of these as covered in the thesis becomes therefore increasingly important to company leaders in business practice. The research will be useful to companies and organisations that embark on the implementation of a virtual organisation.

²⁴⁰ Singh/Sharma/Kaur (2011).

6.4 Contributions to pedagogy

The research contributes to pedagogy insofar as a blend of theoretical concepts together with the more recent method of case studies and structured interviews from current business praxis are used in highlighting the organisation form of the virtual cooperation. This mix brings actual relevance and clear relation vis-à-vis the current business praxis to often abstract theories. This constitutes an environment where the theory can be directly compared with real life business examples and experiences from professionals in their organisations and work environments. This structure engages more directly with the abstract subject of virtual organisations and helps to further explain and highlight relevant aspects of the theory within the business praxis in the process. This pedagogical shift helps to conceptualize in terms of a move from a theory orientation to a practical orientation.

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8 APPENDICES

8.1 Announcement letter – survey among the technology companies (German)

Sehr geehrte(r) Frau/Herr [...],

für meine Doktorarbeit analysiere ich die Verbreitung des Konzepts des sogenannten „Virtuellen Unternehmens“ in der Praxis. Hierzu werden alle im TecDax Index gelisteten Unternehmen mittels eines kurzen E-Mail-Fragebogens (5-10 Minuten Bearbeitungszeit) untersucht, der in den nächsten Tagen an die entsprechenden Unternehmen versendet wird.

Es würde mir eine große Freude bereiten, wenn Sie sich an der Befragung beteiligen könnten, damit der wissenschaftliche Wert und die Repräsentativität der Untersuchung gewährleistet sind. Auf Wunsch und als Dank für Ihr Entgegenkommen, werde ich Ihnen die Ergebnisse der Untersuchung gerne mitteilen.

Die Anonymität der Befragung ist natürlich gewährleistet und es werden in keinsten Weise sensitive Daten abgefragt.

Bereits vorab vielen Dank für ihre Unterstützung!

Nicholas Hanser

Doktorand

Für Rückfragen stehe ich Ihnen gerne unter

nicholas.hanser@gmail.com oder telefonisch unter +447826205583 zur Verfügung.

8.2 Letter – survey among the largest technology companies (German)

Sehr geehrte(r) Frau/Herr [...],

wie vor einigen Tagen angekündigt, erhalten Sie nun den Fragebogen zu meinem Forschungsprojekt „Virtuelle Unternehmen“. Der Fragebogen befindet sich innerhalb dieser Mail.

Für meine Doktorarbeit analysiere ich die Verbreitung des Konzepts des sogenannten „Virtuellen Unternehmens“ in der Praxis. Hierzu werden alle im TecDax Index gelisteten Unternehmen mittels eines kurzen E-Mail-Fragebogens (5-10 Minuten Bearbeitungszeit) untersucht.

Es würde mir eine große Freude bereiten, wenn Sie sich an der Befragung beteiligen könnten, damit der wissenschaftliche Wert und die Repräsentativität der Untersuchung gewährleistet sind.

Um Ihnen das Antworten so leicht und einfach wie möglich zu machen, habe ich mich für eine Befragung per E-mail entschieden. Der Fragebogen ist bewußt optisch schlicht gehalten und damit einfach zu bearbeiten. Bitte tippen Sie Ihre Beurteilungen unterhalb der Aussagen ein. Danach können Sie die Mail einfach absenden.

Die Beurteilung zu den einzelnen Aussagen sind in der Regel durch eine Skala von „1“ bis „5“ gekennzeichnet. Die Zwischenwerte 2,3, oder 4 sollten Sie dabei nach ihrer subjektiven Beurteilung benutzen.

Die gewonnenen Daten werden natürlich anonymisiert und lediglich in aggregierter Form in meiner Auswertung verwendet, so dass keinerlei Rückschlüsse auf Ihr Unternehmen gezogen werden können. Die mir gesendeten Mails werden nach Beendigung der Befragung gelöscht.

Vielen Dank für Ihre Unterstützung!

Nicholas Hanser

Doktorand

Für Rückfragen stehe ich Ihnen gerne unter

nicholas.hanser@gmail.com oder telefonisch unter +447826205583 zur Verfügung.

8.3 Questionnaire

1. In business theory and also in practice, there are different views on what is actually meant by a virtual organisation. Without having heard of the subject or the term, how would you rate from your personal perspective the statement that your company is a "virtual company"?

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

2. Your company is working closely together with (cooperation) partners.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

If your company does not work together with (cooperation) partners, please go directly to question 12.

3. Your company and its partners are heavily dependent on each other from an economical perspective (e.g. your company is the sole contracting entity or contractor of a cooperation partner).

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

4. Your company communicates with its partners much more often in person "face-to-face" than via communication technologies (telephone / email / video conferencing, etc.)

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

5. The cooperations of your company are established rather on a long-term than on a short term basis.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

6. The first contact with your partners was almost always personal "face-to-face" and was not established via communication technologies.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

7. Subsequent partners were recommended to your company always first from a third party.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

8. The partners usually bring more complementary competences rather than bringing supplementary competences to the cooperation.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

9. The relationship of trust with your partners is very strong.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

10. Agreements with the company's cooperation partners are based on legally reviewed and detailed contracts rather than on informal, verbal agreements.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

11. What is the territorial distance to your partners? Antwort:

1 (Predominately local partners)

2 (Predominately regional partners)

3 (Predominately national partners)

4 (Predominately European partners)

5 (Predominately global partners)

12. Within your company, communication technologies (e.g. telephone, fax, e-mail) are used almost exclusively for internal communications.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

13. Within your company, many employees do telework.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

14. How big is the approximate revenue share, which is achieved in your company via e-commerce (electronic commerce)?

Please insert number of approximate estimate of total revenue:

15. How will the revenue of your company develop from the last to this financial year?

Please insert number of approximate estimate of development of total revenue:

16. Your company's business objectives (profit, growth, etc.) were (fully) met for the last year.

Response: 1 (not true at all), 2, 3, 4, 5 (fully applies)

17. Who, within your company, filled out the questionnaire?

1=Management

2= Employee with management functions

3=Investor Relations

4=Others