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NOT A PERBETUUM MOBILE

- LEADERSHIP LOGIC AND SUPPORT SYSTEMS OF EXPERTISE IN GLOBAL VIRTUAL ORGANIZATIONS

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During the past decade traditional hierarchical organizations have been replaced by more permeable, flexible and even born-global virtual organizations. Virtual working arrangements increase flexibility, customer responsiveness and intelligence, productivity, collaboration possibilities, and lowers bureaucracy and costs. It also responds to the needs of the turbulent, uncertain and complex business environment. Often it seems as if virtual organizations should be under constant transformation without hierarchical decelerating organizational structures. However, it has been recognized that also virtual organizations require specific type of organization form and leadership logic to be able to function. They need to find the right degree of centralization and for that carefully choose the right organizational design.

One form of virtual organizations is knowledge intensive virtual consultancy companies, which sell the expertise of their employees. In this study the focus is on more recent virtual consultancy company types that utilize the idea of ‘expertise-on-demand’, which means that customers approach these virtual consultancy companies with a problem, which will then be solved by a group of professionals invited especially to find solutions for the particular case. From the experts’ point of view offering solutions does not necessarily mean received compensation if the solution is not leading to a business transaction which is why this business model is often called ‘pay-for-performance’. For that reason this study focuses on finding out the balance between flexibility versus structure in virtual setting among knowledge workers. In other words how to manage ‘without managing’ a company ‘without walls’ in order to ensure innovative, efficient and productive knowledge flow that should at the same time inspire the experts to contribute and tempt customers to obtain the service?

Based on the identified research gap the main research question is: how to commit and increase the activity level of global virtual experts in a loosely coupled work relationship? This research question is answered with the help of the following sub questions: what kind of organizational support systems benefit virtual knowledge work and what kind of leadership logic benefits virtual knowledge work?

The research is a case-study driven however applicable to any field of virtual knowledge work. The aim of the study is to increase the level of understanding and describe the phenomenon of virtual knowledge intensive organizing in the present day business world from expert point of view. The study will be carried out by following qualitative research practices and narrative methodology. Through narrative research one is able to gain access to deeper organizational realities strongly linked to their narrators’ experiences. The empirical data was collected from three experts working in the field of virtual knowledge work.

Based on the main findings of the study a virtual knowledge intensive organization needs both certain
type of leadership logic and organizational support systems to be able to commit and increase the level of activity of its experts. In relations to both leadership logics and organizational support systems, experts need specific talent management practices to be implemented as well. Leadership logics beneficial for virtual knowledge-intensive companies in pay-for-performance setting underline the attitude of breaking away from traditional leadership and management logics by approaching it both holistically from network perspective and from the point of view of complexity management. Leadership in virtual setting should focus on relational processes such as trust and coherence formation and in creating shared vision, motivation and goals. The organizational support systems benefitting virtual knowledge work are functional processes (skill management and task design), communicational processes (dialog, norms of communication) and specific structural factors (technology support systems and confidentiality, performance monitoring and reward systems). There is a clear need for a facilitator, who functions as a catalyst both in activating the task procedures at hand as well as monitoring the communicational processes and norms of communication. The talent management of experts is based on implemented knowledge management practices and persuasive user design methods.

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1 INTRODUCTION

Traditional image of a company is rather hierarchical in which everyone has a clearly defined position and job description. The employees work physically in a certain place according to a certain schedule and are paid regularly. The structure of the company is rather stiff and the response to dynamic changes in the business environment is slow. Internationalization processes of this type of companies happen often in certain sequential steps. However, during the past decade other options for establishing more permeable, flexible and born-global organization have appeared. One is global virtual organizations.

A global virtual organization is an enterprise that functions mainly on-line. Its’ members can be located in any part of the world. Virtual organizations are boundary less and flexible firms in which there is a great switch of tasks, roles, and work assignments dependent on workload demands of each specific company. The components of a virtual company are individual workers, teams, departments, and units or firms which are geographically distributed, functionally and often culturally diverse, electronically linked and connected via lateral (vs. hierarchical) relationships. (De Sanctis & Monge 1999.)

The amount of virtual organizations has increased greatly in the past decades. The increasing labor mobility and thriving venture capital markets, which have created new firms, have influenced the growth positively (Marjanowic, Fry & Chataway 2012). No wonder, as virtual working arrangements increase flexibility, customer responsiveness and intelligence, productivity, collaboration possibilities and pool of talent, and lowers bureaucracy and costs (Jackson, Gharavi, & Klobas 2006).

The business environment today is being recognized for accelerating change, increasing uncertainty and growing complexity, which at the business level is caused by unpredictable changes in the society, business environment and market needs. For this reason traditional static organization models are being replaced with more flexible virtual organizations. Due to the dynamism of a network of partners the complexity increases on an organizational level as well. So, what kind of business models enable to deal with growing complexity still resembling a certain business
idea? What kind of organizational model could be derived from that? (Jermol, Lavrac & Urbancic 2003).

As a concept, new types of organizational forms, like virtual company structures, have been recognized during the past 20 years (Palmer, Benveniste & Dunford 2007). One form of fairly recent virtual organizations is virtual b-to-b consultancy companies, which represent the increasing global virtual service industry. Different types of virtual consultancy services from various fields are being offered to other businesses, industries and municipalities. An add to the field of virtual knowledge intensive organizations are different types of ‘communities of practice’ and open innovation approaches in which the aim is to utilize the knowledge capital of a larger virtual community and by that being able to end up with greater innovations and customer solutions. Also crowdsourcing companies, which employ people to carry out virtually certain tasks against payment, derive from similar philosophy; utilizing the talent of virtually selected crowd. More recent virtual company types are virtual consultancy companies that utilize the idea of ‘expertise-on-demand’, which means that customers approach these virtual consultancy companies with a problem, which will then be solved by a group of professionals invited especially to find solutions for this particular case. From the experts’ point of view offering solutions does not necessarily mean received compensation if the solution is not leading to a business transaction which is why this business model is often called ‘pay-for-performance’.

Although virtual organizations are reality and suit the idea of a fast paced and reachable society surrounding us, studies about functional, competitive and compelling virtual organizational forms are rare. It is not simple to find solutions to what kind of organizational structures and operation principles support functions of a company ‘without walls’ (a concept from Galsbraith 1995 in De Sanctis & Monge 1999). As, interestingly enough, virtual organizations are said to benefit from emergent forms of organizations for example through continuous improvement philosophies (Suomi & Pekkola 1999; Mc Loughlin & Jackson 1999).

Additionally, virtual organizations should be cooperative (vs. competitive) in nature and require continuous challenging of boundaries between organization and its environment including customers, supplier and collaborators. These types of
organizations benefit also from implementing a culture of change and risk-taking at the operative level (Suomi & Pekkola 1999; Mc Loughlin & Jackson 1999.) It is being recognized that virtual companies selling their knowledge capital need to utilize technological innovations while at the same time they need to develop the core competencies of the organization and enhance organizational knowledge sharing and learning processes (Marjanowic, Fry & Chataway 2012). Furthermore, according to Cunha (2002) managing knowledge workers as such requires minimal leadership, minimal structure and a high profile organizational culture. Minimal leadership is best described as ‘being there without being there’ or as covert leadership that follows the idea of remote control (Minzberg 1998). Minimal structure for that matter refers to freedom employees possess in knowledge-intensive work relationship. High profile organization culture in turn should emphasize minimal familiarity emphasizing informality and diversity. (Cunha 2002.)

Although virtual organizations are more flexible compared to traditional hierarchical organization, according to Chesbrough and Teece (1996) sustainable competitiveness of a virtual organization is all about finding the right degree of centralization. They state that although the advantage of a virtual organization is in incentives and responsiveness, the company should nurture and guard its capabilities, otherwise they might risk their own future by being exposed to external strategic hazards. For that reason, also virtual organizations should carefully choose right organizational design.

In other words, it seems as if virtual knowledge intensive organizations should be under constant transformation without hierarchical decelerating organizational structures. Cunha (2002) approaches the dilemma by stating that when it comes to knowledge intensive work there should be a sense of utilitarian compliance, meaning balance between innovation and efficiency in order to exploit exploration. This fairly paradoxical set up requires further clarifications in the context of this study. How to manage ‘without managing’ a company ‘without walls’ in order to ensure innovative, efficient and productive knowledge flow that should at the same time inspire the professionals to contribute and tempt customers to obtain the service?
1.1 Objective and research questions of the study

Due to the fact that virtual organizing requires a specific organizational approach far away from traditional hierarchical structures the research should focus on revealing these defining factors. Furthermore, a virtual pay-for-performance work relationship which is based on flexibility and insecurity, in its paradoxical set, requires additional consideration from the point of view of the experts and how to commit them to these new types of work relationships such as virtually loosely coupled work relationship. The aim of this study is to examine virtual organization at three intertwining levels: from leadership, organizational and expert point of views. The idea is to understand the leadership logic and philosophy and organizational support systems that benefit global virtual knowledge work.

The framework for the theoretical setting is virtual knowledge intensive organizations and the idea is to problematize those organizational structures and processes, which can be related to encouraging professionals to contribute and increase their level of activity and commitment. The empirical setting for the study is a knowledge intensive virtual organization in cleantech industry, which utilizes some features of crowdsourcing and open innovation practices and represents a virtual consultancy service implementing a pay-for-performance practices among its experts.

Figure 1. The research phenomenon.
multidisciplinary experts. Area of interest lies especially in understanding the global virtual organizational structures and operation principles, which support the orchestration of this type of expert network. Particularly, as similar systematic pay-for-performance expert network types of business models can be expected to emerge furthermore. The study should throw light on the matter of the paradox of virtual organizational form: minimal leadership and structure vs. efficient and productive flow of knowledge capital.

Based on the identified research gap the main research question is as follows:

RQ: How to commit and increase the activity level of global virtual experts in a loosely coupled work relationship?

The main question will be answered with the help of the following sub questions.

SQ 1: What kind of organizational support systems benefit virtual knowledge work?

SQ 2: What kind of leadership logic benefits virtual knowledge work?

According to Goodwin (1995) strategic service vision can be divided into two main focus areas: externally and internally-oriented visions. Externally-oriented strategic service vision focuses on positioning the company to the target market, in which case the competitive advantage will be created through value creation to the customers. Internally-oriented strategic service vision for that matter focuses on positioning the company in such way that it will meet employee needs. Aim is in creating value for employees, through which commitment, effectiveness and productivity increases. In this study the focus is on internally-oriented service vision in an international virtual organization.

It is assumed that systemic efforts to join self-organized units into a synergetic business system and ways to build a thriving infrastructure are needed in order to be able to create innovation processes and organizations (Chesbrough 2003; Jermol et al. 2003; Wenger & Snyder 2000). For that reason one should approach the question of how to commit and increase the activity level of global virtual expert network
from structural and leadership perspective. If one is able to create a functioning and compelling global virtual expert network, the organizational form and leadership logics must be apt to that dynamic and complex setting.

1.2 Key concepts

The conceptual framework of the study is multifaceted and follows the structure of the research phenomenon. The interest is in supportive systems of non-traditional organizational forms and leadership logic, and in how one is able to create functioning and innovative premises for experts working in these settings. In this chapter the concepts closely related to the research topic will be opened up and the various virtual organization designs are represented. This helps one to locate virtual pay-for-performance businesses into a certain framework.

1.2.1 Support systems of organization structure

Organizational structure of a company refers to the rules and roles in specifying who is expected to do what and how. Structure defines the interests and pursued goals, and relevant considerations and alternatives. These definitions help company members to comply with organizational norms and focus attention. (Egeberg 2003.)

According to Pugh, Hickson, Hinings & Turner (1968) and Daft (2012), the structural dimensions of an organization are formalization (written documents e.g. procedures, job descriptions, regulations and policy manuals), specialization (the range of tasks each member are defined to perform), hierarchy of authority (to whom employees report and the span of control of the managers) and centralization (levels of decision making) (Pugh et al. 1968; Daft 2012). In virtual setting certain dimensions, especially specialization, is more highlighted than others. These structural dimensions and processes can be supported by certain organizational systems, which are to be presented in this study. The support systems of virtual organizing (chapter 3) handles topics related to formalization and specialization, whereas, the leadership logics and philosophy enhancing virtual knowledge work (chapter 2) relates to hierarchy of authority and centralization issues, however the hierarchy of authority is related to support systems as well.
Organizational structure and form can be used as a strategic tool to support the rapid changes in strategy needed to compete in dynamic environments. Competitive advantage is related to a process of ongoing renewal and effective selection of processes instead of achieving or protecting one’s specific industry position. This effectiveness is dependent on internal actions, more specifically defining and redefining capabilities and layering resources. This type of continuous morphing requires the idea of evolvability internalized by the top management and is dependent on the cognitive processes of top management team and requires a shift in managerial thinking from control to opportunistic evolution and experimentation. An organizational form which highlights dynamic capabilities and strategic flexibility allows dynamic competition. (Rindova & Kotha 2001.)

Virtual enterprise is an organismic system where growth is the main driving force. Additionally it is a social system because it manages relations of self-organized autonomous units. For that reason running a virtual organization is all about managing relations. (Jermol et al. 2003.) “In a social system joined self-organizational entities form a holistic and free formed society” (Jermol et al. 2003:124).

1.2.2 Virtual knowledge intensive consultancy organizations

Virtual knowledge intensive consultancy organizations’ competitive advantage lies in the way the knowledge of its members can be obtained, utilized and stored virtually for the sake of new innovations and solutions sold to the customers. In a geographically and culturally dispersed organization the aim is to be able utilize the similarity of its’ partners’ core competencies which can lead to collaboration (Jermol et. al 2003) of highly educated and knowledgeable people working with high degree of customization and interaction. Discretionary effort and personal judgment by the professional delivering the service are required. Strategies for this type of companies emerge from managing intellectual capital embedded in social exchange and relationships with clients, peers, educators and professional associations. (Løwendahl 1997 in Reichlen & Apel 2007)
Virtual organization design is made possible by implementing highly dynamic processes (to meet market demands), contractual relationships, edgeless, permeable boundaries and reconfigurable structures. It allows greater adaptability, faster response time and task specification. At the same time, there is a high risk of greater conflict, decreased firm loyalty and higher probability of catastrophic effects. (Burris 1998; Chesbrough et al. 1996.) Other challenges are related to the complexities in achieving communication efficiency and message understanding, uncertainty related to task design, the powerful role of norms, hierarchical relationships and evolutionary effects (i.e. virtual organizing in the long run) (De Sanctis & Monge 1999).

Knowledge intensive virtual organizations are closely related to communities of practice. Wenger and Snyder (2000) consider communities of practice as a new, virtual or physical, organizational form in companies that are thriving on knowledge, and see it as a useful complementary way of working in addition to formal work groups, project teams and informal networks. However new in organizational world, ‘communities of practice’ -type of working methods can be recognized from ancient times already. What is new is the technological development that offers new possibilities for companies to function virtually. In communities of practice people are bound together by their shared expertise and passion.

Community of practice is an informal entity among members who share common problems or interests and has been useful in organizational setting in the context of new product development and other knowledge work. Communities of practice are forums which enable sharing and internalizing tacit knowledge while they share their experiences and exchange knowledge about a certain challenge or topic. Internet technologies have created vast and timeless possibilities for globally dispersed professionals to exchange knowledge and learn from the best i.e. from each other. (Ardichivili, Page & Wentling 2003.)

Communities of practice are described as self-organizing and are based on self-selected membership, meaning people know if they have something to give or something to take away and if they identify themselves as part of the particular community. However, communities of practice are said to benefit from cultivation.
The members share experiences and knowledge in free-flowing and creative ways aiming for intangible knowledge as their primary output, which offers the members of the community to reinforce and renew themselves at the same time. In these communities of practice problems can be utilized quickly, best practices can be transferred from the community of practice to the company the person works for, and members can develop their professional skills. (Wenger et al. 2000.)

From a management point of view communities of practice are not easy to sustain. They are organic, spontaneous, informal and often resistant to supervision and interference. This managerial paradox, which according to Wenger and Snyder (2000) should be appreciated, seems to be repeating itself through different approaches to managing knowledge intensive organizations. (Wenger et al. 2000.)

Similarly, different types of open innovations refer to opening problems of companies to other companies, experts or single persons, depending how it is being organized and managed. Marjanowic et al. (2012) consider subcategories for open innovation as open source, outsourcing and crowdsourcing (see figure 2), and recognizes at the same time that clear-cut categorization is impossible. Hence, the categorization of different types of open innovation systems varies greatly in literature and in practice.

![Figure 2. Different types of 'open innovation': open source, outsourcing, crowdsourcing (Marjanowic, Fry & Chataway 2012).](image)

Crowdsourcing as a sociotechnical work system is an umbrella term. Variety of terms have been related to this particular way of operating: “peer production, user-
powered systems, user-generated content, collaborative systems, community systems, social systems, social search, social media, collective intelligence, wikinomics, crowd wisdom, smart mobs, mass collaboration, and human computation” (Doan et al. 2011). Crowdsourcing has been referred to as a “general-purpose problem solving method” (Ibid) and as “collective intelligence as a form of virtual property” (Wexler 2010).

Crowd work for that matter can be related to a particular crowdsourcing approach in which the crowd work company functions as a solver brokerage. Oinas-Kukkonen et al. (2014) refer to this more structured crowdsourcing as ‘curated crowdsourcing’. However, with both crowd work and curated crowdsourcing one implies to a certain open innovation governance structure (Feller et al. 2009), which is not free-for-all approach, but includes certain user selection. Oinas-Kukkonen et al. (2014) consider this type companies to harness collective intelligence, which also promotes modern design principles such as encouraging users to participate in software designing and enabling them co-create product they want to use.

Curated crowdsourcing is closely related to the type of pay-for-performance design, which will be in focus in this research: organizational structures are required and access is always somehow limited. Often the experts represent certain field, or at least they feel they can contribute to that specific field and to specific customer cases. In this type of setting payment only takes place if the project plan will be accepted by the customer and financial transaction will take place. In an organizational setting it is challenging to manage this type of organic and permeable organization designs. There is a lack of personality and focus, and members of the networks might not possess any social responsibility towards different individuals like in traditional work relationships. Nevertheless, these organization designs are major approaches for social web innovations. (Oinas-Kukkonen et al. 2014.) Pay-for-performance virtual consultancy company is the organization design of this study and it also highlights the research phenomenon, in which the core problems lies in committing the experts in this type of “secondary” project-based work relationship.
1.2.3 Expertise

Expertise refers to the combination of knowledge, experience and skills or expertness held by a person in a particular domain. An expert is someone who possesses more knowledge and skills than others in a certain context. Expertise refers to a mixture of theoretical knowledge and skillful performance. (Isopahkala-Bouret 2005; Germain & Ruiz 2009; Ericsson et al. 2006.)

Recognizing and utilizing expertise at organizational level is one of the core functions in today’s companies. According to Bartlett and Ghoshal (2002) companies have moved from competition for products and markets to competition for resources and competencies and finally to competition for talent and dreams. In other words, it is not enough to recognize knowledgeable people as the scarce resource of the company, but to be able to turn this human capital into a lasting and sustainable differentiated offering in a form of a professional service.

1.3 Research methods

Because the aim of the study is to increase the level of understanding and describe the phenomenon of virtual knowledge intensive organizing in the present day business world from expert point of view, the study will be carried out by following qualitative research practices and narrative methodology. Narrative methodology benefits organizational research in many ways. According to Bock (2014) “organizational existence and management actions are guided, substantiated and evaluated through narratives of purpose, identity and process.” Through organizational narratives one can explain and interpret individual and firm –level behavior. Through narrative research one is able to gain access to deeper organizational realities strongly linked to their narrators’ experiences. (Gabriel & Griffiths 2004.)

The aim is to be able to describe and understand the particular phenomenon more specifically and to give suggestions on how virtual knowledge intensive organizations should be approached from leadership and from organizational point of
view and what kind of issues should be taken into consideration when trying to commit experts virtually.

In order to answer the research question both theoretical and empirical materials are being studied and collected. Literature, like scientific articles and studies, related to virtual knowledge intensive organizations from different fields of study (business, psychology, information technology and education) are presented. Additionally, as part of the empirical study, interviews of experts in the field of knowledge intensive virtual organizations are being conducted and analyzed by narrative analysis implementing abductive reasoning.

In order to understand holistically the phenomenon of virtual organizations in present day business fields the focus of this study is in discovering the meanings and the relationships between different meanings attached to the phenomenon. The objective is in collecting the meanings experts relate to the phenomenon of virtual organizing in their narratives. In order to receive the meanings emerging from the participants as authentically as possible in a research setting, it is best to let the participants to narrate. Given the possibility to narrate about a phenomenon, it is possible for a researcher to gain knowledge about the experiences and meanings related to the particular phenomenon.

The used data is suitable in answering the research questions for it presents the holistic approach needed for running a virtual knowledge intensive organization with top experts.

1.4 Structure of the study

The structure of the research paper is as follows. The first chapter presents the field of the study and research focus and states the research questions and framework. Also the main concepts of the study are being presented and located into a larger whole. The second chapter will open up the leadership logics and philosophy of virtual organizations based on literature and will be followed by features related organizational support systems of virtual knowledge intensive organizations, in the third chapter. The fourth chapter presents an overview of literature on talent
management of experts in virtual knowledge work, and concludes the main findings of the theoretical framework. The fifth chapter addresses the methodological approach of the study focusing on presenting and justifying the selected empirical research methodology and analysis. The sixth chapter represents the empirical research material reflecting the theoretical findings. Finally, the seventh chapter combines the key theoretical and empirical findings together and explores the answers to the research question. It also aims at presenting the managerial implications of the study, the reliability, validity and limitations of the study and directs focus towards future research interests.
2 LEADERSHIP LOGIC AND PHILOSOPHY ENHANCING GLOBAL VIRTUAL KNOWLEDGE WORK

From a managerial point of view three major problems exist in leading virtual organizations: joining geographically and culturally dispersed partners into a creative and functional synergetic organization, combining partners with different motivations and different management strategies and performing a knowledge intensive service business (Jermol et al. 2003). Managing ‘without managing’ requires a specific approach to leadership compared to traditional leadership practices. Traditional management practices have to be put aside in order to be successful in a complex and competitive environment and attractive in the eyes of the partners. Jermol et al (2003) call for implementation of methodology and techniques of complexity management, which are needed for self-organizational type of management.

In virtual enterprises the strategic and management decision making processes are not hierarchically structured as is the case in traditional centralized organizations. Strategic and management decisions in virtual enterprise are not formed by a single body but rather based on well-defined rules and distributed management which is self-organized. A strategy ‘just few rules and a lot of freedom’ should be implemented when self-organized units are joined to create a synergetic business system. This follows three orthogonal dimensions: establishment of common vision, motivation and goals. Suggest a minimal set of rules, guidelines and standards to be agreed on. Tools, methods and techniques to support collaboration, co-operation and connection need to be adopted. (Jermol et al 2003.)

Cunha (2002) states that due to the independent nature of knowledge-intensive work managing knowledge workers requires 1) minimal structure, 2) a high profile organizational culture and 3) minimal leadership. 1) Minimal structure refers to freedom employees possess in knowledge-intensive work relationship. Corporate ideology (ideas, beliefs, emotions and values) is being seen as a guiding factor instead of formal structures. The corporate structures should be rather tacit and implicit and leave room for sense of autonomy. Yet, what is expected is coordination devices and task predictability in order to avoid chaos and sense of detachment. 2)
High profile organization culture for that matter refers according to Cunha (2002) to minimal familiarity, emphasizing informality and diversity. There should be a sense of utilitarian compliance, meaning balance between innovation and efficiency in order to exploit exploration. 3) Minimal leadership is best described as ‘being there without being there’ or as covert leadership that follows the idea of remote control (Minzberg 1998). However, remote control requires trust. Cunha (2002) sees that trust between knowledge employee and employer can be enhanced from the employer’s side by protecting, supporting and giving opportunities for sense making for the employees. For that reason, it is more accurate to speak about orchestration of a virtual organization instead of management.

Due to independency strongly present in knowledge-intensive organizations and especially in virtual organizations, one should rather use the concept of orchestration instead of management while referring to these particular type of companies. Also the strong emphasis on cooperation in professional virtual organizations supports the use of the term ‘orchestration’. According to the basic idea of orchestration the starting point for business operations is to create added value to both to customers and other stakeholders of the organization network. (Dhanaraj & Parkhe 2006; Wallin 2009.)

Orchestration highlights valuable information sharing and knowledge transfer throughout the ecosystem. Also cooperative culture in which efficiency and creativity is combined is highlighted. The framework of orchestration is being created from three core elements: 1) in order to support decision making one has to be able synthesize vast amounts of information from various sources together with the rest of the ecosystem members, 2) one has to accept the uncertainties created by the dynamic world economy and business environment and be able to redirect the focus on the way, and 3) one has to invest time and effort in order to create an atmosphere of trust, which lowers risks, increases learning together and encourages forming of long-term relationships. (Wallin 2009.)

Consequently, features related to orchestration support the covert type of managerial requirements set for knowledge intensive professionals (Cunha 2002; Minzberg 1998). At the same time orchestration takes into account issues connected to
expertise-on-demand type of businesses for example the need for synthesizing information from various sources, trust building and uncertainty (Doan et al. 2011; Feller et al. 2009; Marjanowic et al. 2012). Dhanaraj and Parkhe (2006), in their study about loosely coupled innovation networks, approach orchestration as “the set of deliberate, purposeful actions undertaken by the hub firm as it seeks to create value (expand the pie) and extract value (gain larger slice of the pie) from the network…without the benefit of hierarchical authority”. Similarly to Wallin (2009), high levels of transactional uncertainty and exchange of tacit knowledge are being connected to the functions of this type of innovation network.

2.1 Relational processes; trust and coherence formation

From the organizational point leadership of a virtual organization should highlight relational processes such as trust and coherence formation, which is especially problematic in virtual pay-for-performance model as the identity of the members is somewhat hidden (depersonalization) and the continuation of network ties is uncertain. Partnership could be regulated by certain contracts, but more so social and communication aspects should be taken care of. By establishing trust, the company can avoid opportunistic behavior which cannot be eliminated by formal contracts. Trust building happens through regular communication, sharing of information and knowledge and stable rules of game. (Jermol et al. 2003.) For that matter, on a practical level establishing trust is strongly related to the implementation of certain organizational support system especially communicational processes and establishment of collaboration tools i.e. developing technological features of the platform (3.2 & 3.3.1).

To avoid misinterpretations caused by depersonalization, face-to-face meetings should be organized from time to time. Virtual interaction aids trust building as a parallel process to personal meetings. (Hardwick, Anderson and Cruickshank 2013.) Innovation requires trust, which creates a platform of confidence that fosters flow of information and shared tacit knowledge. According to Hardwick, Anderson and Cruickshank (2013) virtual environments are suitable for technical trust building but not deeper enduring forms of trust, which are formed through face-to-face meetings. But when ties are strong trust can be maintained through for example e-mailing.
There is a need for developing two different types of trust: knowledge-based and institution based trust. According to Granovetter’s social network theory (1985), knowledge-based trust is based on prior satisfactory social interactions with other members of the community. This means there is no need to be afraid of embarrassment and there is a belief in expertise and expectation of high level of integrity and competence. Also Hardwick et al. (2013) agree by stating that trust creates confidence in members, which reduces their perceptions of vulnerability risk. However, this contradicts with the need of leveraging knowledge from as many geographically dispersed users as possible, in which case people would benefit from weak ties (Granovetter 1973) i.e. from people they do not have regular interaction with. Leveraging knowledge supports the basic philosophy of crowd work type of organization in which effort is put into utilizing multidisciplinary talent.

Institution-based trust, for that matter, is based on institutional norms including knowledge sharing as a norm; trust in employees and sharing as a moral obligation. According to McKnight, Cummings & Chervany (1998) this requires necessary structures (see 3.2.1 Norms of communication) to be in place which will ensure trustworthy behavior of individual members and protects members from consequences of administrative and procedural mistakes.

Thus, a set of clearly communicated norms and standards for sharing knowledge should be implemented. First of all, organizational expectations and procedures should be made transparent through clear and widely accessible communication of the expectations and rules. Secondly, clear directions should be set on what is a valid and useful knowledge entry or object of a posting. Advertising examples of successful problem solving contributions of individuals that have led to successes should be nurtured. Trust in individual employees should be shown by the organization as a whole. Finally, collaboration should be seen a vital part of work in general. (Ardichivili, Page & Wentling 2003).

In general, managers should try to create an atmosphere of trust by facilitating the norm of reciprocity, social interaction and dialogue including sharing vision and experiences. Interestingly, sharing also personal information is seen as a useful act in virtual communications. If the organization actively provides useful information and
cases on the benefits of knowledge sharing for the members and clients of the virtual organization, knowledge sharing self-efficacy, perceived relative advantage and compatibility as motivators in smoothing the way knowledge is shared, will be promoted. (Chen & Hung 2010.) Chen and Hung (2010) believe that knowledge sharing, utilization and community promotion together will invite new members, increase positive activity, and bring more knowledge contributors to the community.

2.2 Holistic management approach

Allen and Sandow believe that the philosophy of biological sciences has started to dominate the Knowledge Age. They open it up by explaining how there is a shift taking place “from focusing on parts to focusing on the whole, from focusing on categorization to focusing on integration, from focusing on individuals to focusing on interactions, and from focusing on systems outside the observer to focusing on systems that include the observer”. (Senge 2006: 271.) The statement supports the holistic systemic thinking. Beck’s (2008) idea of cosmopolitanism is somewhat similar. According to him, the national borders (actual and psychological) are becoming blurred. Consequently, decisions should be made based on the big picture, seeing a unit being connected and interacting with a larger entity: seeing the entire system. Cosmopolitanism includes the idea of approaching difference with curiosity and equality and utilizing virtual work without national borders.

Jermol et al. (2003) for that matter refers to network culture, and present the idea of network intelligence together with emotional intelligence and state that they cannot be taught or learned, but instead they should be carefully thought of, developed and nurtured in order to raise the network culture. “The individuals working in networked enterprises, as well as future networked global citizens need to be raised up with network culture values such as identity, diversity, self-respect, respect of the others and the awareness about global connectedness.” (Jermol et al. 2003:134).

2.3 Summary

Due to minimal leadership and structure management decisions in virtual organizations should be based on few well-defined rules and distributed
management, which is why virtual management is closer to virtual orchestration. Common vision, motivation and goals should be established in order to create high profile organization ideology and strong foundation for the organization in the minds of its’ partners. Also relational processes such as trust and coherence formation should be focused on, because it will in turn increase learning together and long-term relationships. The management of a virtual knowledge-intensive organization should be able synthesize vast amount information from different sources, find a way to focus and accept the uncertainties created by the business environment. Tools and methods enhancing coordination, collaboration and connection need to be implemented. The question that naturally arises is what are these tools and methods, which would benefit virtual knowledge-intensive organizations and what are these few well-defined rules, which must be defined? The following chapter will focus furthermore on these rather practical aspects of virtual organizing among knowledge workers.
3 SUPPORT SYSTEMS OF VIRTUAL KNOWLEDGE INTENSIVE ORGANIZATIONS

Virtual knowledge intensive companies drive for appealing and innovative customer solutions. To approach virtual organizations from structural perspective seems to make no prior sense as virtual organizations are often referred to as self-organizing decentralized units. However, systemic efforts to join self-organized units into a synergetic business system and ways to build a thriving infrastructure are needed in order to be able to create innovation processes and organizations (Chesbrough 2003; Jermol et al. 2003; Wenger and Snyder 2000). For virtual knowledge intensive consultancy organizations’ competitive advantage lies in the way the knowledge of its members can be obtained, utilized and stored virtually for the sake of new innovations and solutions sold to the customers (Jermol et. al 2003).

As mentioned already (1.2.1) the structural dimensions of an organization are *formalization* (written documents e.g. procedures, job descriptions, regulations and policy manuals), *specialization* (the range of tasks each member are defined to perform), *hierarchy of authority* (to whom employees report and the span of control of the managers) and *centralization* (levels of decision making) (Pugh et al. 1968; Daft 2012). In virtual setting certain dimensions, especially specialization, is often more highlighted than others. Also other mentioned dimensions are recognizable in virtual setting, but on a different level. For that reason it is logical to apply more suitable terms to virtual setting. These recognized structural dimensions and processes can be supported by certain organizational systems, which are presented in this chapter especially from the point of view virtual knowledge intensive organizations.

Another approach to categorize the elements of an organization is to divide the assets of a company into tangible, financial and intangible assets. In virtual knowledge intensive companies intangible assets are emphasized. Intangible assets include skills and tacit knowledge (referring to competencies and know-how of the people), collective values and norms, technology and explicit knowledge (referring to manuals, IP and procedures), primary and management processes and endowments (like image, customer base, networks and ownership of standards). However, the
difficulty in analyzing and recognizing intangible assets lies in their unaccountability. Although intangible assets cannot be seen in an accounting system, their successful managing is directly financially visible. Intangible assets as competitive advantage can also disappear quickly in today’s dynamic and fast economy. (Andriessen 2001.)

Quite similarly, in the Drouin’s, Bourgault & Gervais (2010) study, which operationalizes the concept of organizational support and identifies the various forms it can take, on the effect of organizational support on components of virtual project teams, it was found that compared to the structural factors, structural processes related to the smooth operation and effective communication of the team were the main concerns of the top management of the study. This was due to the fact that structural factors are more static than process factors. Drouin, Bourgault & Gervais (2010) state that organizational support systems strongly impacting virtual work could be divided into the following categories: human resources, performance, reward, resource allocation, coordination, communication and technology. These support systems have a strong impact on virtual project teams and the project success.

The functioning of virtual experts is guided by the following organizational support systems and policies. In the order of priority, implementation of organizational support systems were affecting virtual teams’ functional processes (task coordination, the need for face-to-face meetings: task complexity, task interdependence, communication capacity, project life-cycle) and communicational processes (information flow, recognition of important information, rates of message sending and checking, interpretation of silence) the most, whereas it had lesser influence on virtual teams’ relational processes (socio-emotional interactions: trust, leadership, cohesion) and structural factors (individual worker, utilized technology and the operational context). (Drouin, Bourgault & Gervais 2010.)

Following the research results of Drouin et al. (2009), Andriessen (2001) and the seminar work of the researcher herself (Alaniemi 2014) it is justified to divide the key organizational supporting systems of current virtual knowledge intensive organizations into the following categories: functional processes, communicational
processes and structural factors. Functional processes highlight skills management and task design. Communicational processes refer to communicational norms, volume and efficiency. Structural factors for that matter include various key elements such as technology support systems, reward systems, intellectual property rights and human resource management issues.

3.1 Functional processes of virtual knowledge intensive organizations

According to the philosophy of network intelligence an individual is a much stronger and valuable knowledge resource if it is a connected member of the community. The main strength and added value of each partner in a virtual organization is dependent on linking his/her expertise with supplementary knowledge of other members of the network. On the whole, the success of a virtual enterprise lies in the range of competencies the partners can offer together; the wider the network of competencies the more competitive the enterprise. It is crucial to understand the importance of this network philosophy, because at the same time it inevitably leads to the dynamism of the network: partners are entering and leaving. In virtual organizations the uncertainty level rises as partners represent different geographical, temporal and organizational factors. (Jermol et al 2003.) To be able to handle the uncertainty this dynamism brings along the functional processes of the company have to be in place. These processes include skills management and task design aspects, which together will support efficient and continuous work flow of a virtual knowledge intensive organization.

3.1.1 Skills management

The success of each project is dependent on the relevance of the resource and process information. For that reason a virtual organization must develop a system, which helps it to recognize, restore and utilize the knowledge and skills resources it possesses. (Drouin et al. 2010; Jermol et al. 2003; Doan et al. 2011.) According to Drouin, Bourgault and Gervais (2010) this type of resource allocation includes defining task roles, responsibilities and hierarchical links between organizational actors, and strategic allocation of team members’ knowledge, skills and competencies to meet the target objectives. This type of coordination ensures access
to information and expertise. Also Wenger and Snyder (2000) recognize proper teaming based on identification of certain domains increasing efficiency and commitment level of virtual work. In other words, appropriate resource allocation requires efficient skills management.

Doan et al. (2011) approach the issue by first questioning how cognitively demanding the contributions are in order to accomplish a certain task, and based on that different tasks should be given to different users, i.e. low-ranking users want to make easier contributions for a reason or another (lack of time or experience etc.). They state that the role of human users is important to define in order to know who to employ, and for that reason would divide users into categories of slaves, perspective providers, content providers and component providers. Doan’s et al. (2011) approach serves two-dimensional purpose: for customers and for employees. Having different roles for different users can act as a motivational factor, when users can choose already in the open phase the level of participation they are willing and capable to contribute. Additionally, demanding roles can act as a professional encouragement for some experts to join and commit to the projects and to the community in general. For customers different roles of experts facilitate recognizing the most prestigious experts the virtual company has to offer separating the wheat from the chaff so to say. (Doan et al. 2011.) In other words, the organization should recognize the most prominent partners and at the same time lower the uncertainty of the customer by promoting that (Feller et al. 2009).

Similarly Jermol et al. (2003) mention that in a system where roles are constantly inverting and is formed by self-regulated agents (for example, it can be controlled by an agent acting as a project leader or by a net-broker who can be a contract provider) general rules and procedures have to be clearly defined and controlled. Additionally, right handlers for the management of the projects are needed. The manager of the project should possess cognitive authority, which refers to highly skilled professionals who are able to find links between cases that do not seem similar at first sight and are able to solve issues of knowledge overload by finding right partners and being able to manage the transfer of knowledge and process. (Jermol et al. 2003.)
How then to combine the right partners to solve the target problem? The matching manners vary including: database of partners, external sources outside from the database and filtering process done by a community of partners. (Doan et al. 2011). Jermol et al. (2003) take the resource allocation and skills management to a one step further. According to them in virtual business and organizational model every partner of virtual organization should also perform marketing and project management functions with broad scale of alternatives and at lower risk. This calls for easy access to a knowledge repository where information about knowledge resources, process costs and resource availability in the network are stored. All the partners in the value network should feel a need to compete for an opportunity to be chosen according to his skills to different projects that would support their professional development. Virtual organizations need to make sure that the competences and connections of all partners are being requested and stored. Jermol et al. (2003) for that matter speak for collaborative data mining and decision support methodology.

Jermol et al. (2003) suggest several main groups of data which should be gathered about partners of a virtual network. These include partner’s knowledge, abilities, expertise, competencies, their connectivity and connections to outside expertise or resources, available tools and methods mastered by the partner, partner’s availability, partner’s qualification to fulfil a task, related solved problems, and lessons learned and partner’s costs to fulfil the task. They continue proposing a further categorization of the collected data into eight groups (131):

1. sociological data: group effectiveness, sociological type, network intelligence, 2. psychological data: personality type, creativity level, motivation, values and beliefs, 3. partner’s cultural and organization knowledge, 4. group and team knowledge (functional, group dynamics), 5. partner/group/individual background knowledge, learning styles and communication characteristics, 6. partner/group/individual connections to other’s knowledge, 7. process knowledge, and object type knowledge 8. personal lessons learned.

This type of data mining can be conducted directly or indirectly. Indirect methods include analysis of implemented projects and functions and of expertise according to the published works and connectivity map. Direct methods are for example interviews, observations, questionnaires to collect partners’ knowledge, abilities, expertise and competencies. This knowledge should be stored in a form of a
knowledge map in which each partner is presented as knowledge node describing a partner with his competence to accomplish certain business processes. Connections between notes should also be recognized in a form of a structural network of agents. (Jermol et al. 2003)

3.1.2 Task design

Task design is much related to project management issues, but from employee point of view transparency of task predictability and predesigned task roles already in the open phase can increase employee commitment and trust relationship. Task design in virtual pay-for-performance organizations should be based on the level of commitment the partner is ready to contribute, which puts great emphasis on anticipation and orderliness. The wanted impact of the contribution should be considered when designing tasks. (Doan et al. 2012.)

Additionally, the nature of the task should be recognized and connected to the resources needed for accomplishing the task. Drouin, Bourgault and Gervais divide tasks into four separate categories: production tasks, decision-making tasks, task complexity and task interdependence (2010:629). Marshall and Novick (1995) for that matter state that some tasks may require more structure and formal relationships and for that reason the task conditions should be recognized and based on that treated in different ways in order to create efficiency and productivity. They also mention that consensus formation or conflict resolution can be difficult without face to face communication, while knowledge elicitation or sharing can be more effective when performed virtually. Additionally, interestingly, people were shown to be more task-oriented on telephone than on face-to-face and the communication form influenced the weighting of task goals. (Marshall & Novick 1995.)

Doan et al. (2011) and Kittur et al. (2013) suggest that complex problems can be divided into individual challenges that will be solved either in sequence or parallel, and enables more solvers to be involved. Then dependencies between subtasks should be managed and results should be assembled (Kittur et al. 2013).
Task predictability refers to objectives that should be defined in advance. The set objectives instead term the structure and context of the virtual team needed to accomplish a certain task. Appropriate team design should be suitable for set objectives and work characteristics. (Prasad et al. 2002.) Similarly Marjanowic et al. (2012) and Key et al. (2011) note that expectations should be stated upfront. Especially in the pay-for-performance models terms set out in advance is a prerequisite in order to lower the inevitable uncertainty of the outcome (Marjanowic et al. 2012).

Commitment to team goals anticipates perceived performance satisfaction with the team process and outcomes (Pazos 2012). Task predictability reduces potential friction and gives direction to possible conflict management in the network of relationships (Pazos 2012; Marjanowic et al. 2012; Key et al. 2011). Team goals should be posted in group rooms where everyone can see those (Key et al. 2011).

Clearly defined relations between partners (Jermol et al. 2003) are related to task predictability. Task predictability can be increased by clarifying what is being communicated, why and what action should be taken and by whom, instead of just stating how one feels about a certain step. Feeling words are interpreted differently in different cultures and does not bring communication forward. (Key et al. 2011.) Because social communication is said to complement rather than substitute for task communication in teams with persistent trust, it is important to maintain trust in project teams (Järvenpää & Leidner 1998).

3.2 Communicational processes of virtual knowledge intensive organizations

Virtual companies are based on organization design that is held together, literally, by communication. Different communication support systems help virtual knowledge work to flow and prosper. However, born virtual organizations offer a new environment of interactions to which the working generation is still growing into. In these new and changing contexts the work of modern organizations and innovations will be done. Independent and decentralized organizations with greater flexibility are both more productive and innovative than less flexible organizations. Innovation capability of an organization is dependent on its communication structures due to the
fact that innovation processes are often initiated by information concerning new business opportunities brought in through interaction with external relations. Easily accessible communication networks lead to increased communication rate and intensity across organizational boundaries (Gressgård 2011).

When communicational processes involve complex information sharing and problem solving, the issues of volume, load and message understanding are important to be addressed (De Sanctis & Monge 1998). Communicational processes should include aspects like information and knowledge sharing, information access management, decision making, information flow, recognition of important information, rates of message sending and checking and interpretation of silence. (See for example Drouin, Bourgault & Gervais 2010.) Jermol et al. (2003) state that interaction in virtual knowledge intensive organizations is based on knowledge transfer versus knowledge use, which refers to only top-down interactions.

For that matter, virtual organizations make it possible to improve lateral communication and broad participation, which compared to traditional organizations, can enhance equality in communication patterns. Communication coordination in virtual organizations takes place through transactional exchange and network relationships instead of hierarchy that will create more boundary crossing communication. (Drouin, Bourgault & Gervais 2010.) The communication volume however is not only a trigger but also the outgrowth; more experienced and innovative professionals mean increased variety of innovations and solutions to the customers.

At the same time the challenge in virtual communication relates strongly to the efficiency and cognitive decision making skills of the team leader, because often the hardest and most crucial part of the knowledge work is about framing the question, finding the most suitable answers and being able to make the ideas real. In other words, the team must be able to cross all the social, structural and distribution barriers that are related to innovation processes in virtual surroundings. (Oinas-Kukkonen & Oinas-Kukkonen 2014.) Also the dynamic process design of virtual organization achieving needed efficiencies is challenging. When the volume of communication increases and qualitatively different communication yields diverse
innovation results, it causes pressures to formalize or program some communication in order to gain efficiency and bring routine to otherwise customized work.

How then to encourage productive and healthy communication processes when it is being recognized that increased and rich communication efficiency can be difficult to gain especially for problem solving tasks, and that personal relationships are known to be more powerful than formal structures or reward systems in lateral organization designs (Joyce et al. 1997)? Virtual organizations should find a balance between routinizing and personalizing communication on its platforms, and be able to produce rich but efficient interaction.

What makes the set up somewhat problematic is the fact that large part of intangible assets are created in traditional companies through informal exchanges (e.g. different get-togethers, lunches, coffee breaks), which are valuable in bonding relationships, creating trust and cohesion. For that reason large effort and focus is needed in order to create a functional virtual co-operation. (Prasad et al. 2002.)

Thus, face-to-face communication is often seen as superior to electronic communication in many ways and it takes longer to decode social cues in virtual surroundings as people tend to apply norms of social context to interpret messages and to be able to respond accordingly (Drouin, Bourgault & Gervais 2009). For example, great importance is often put on mutuality (De Sanctis & Monge 1999). Studies also show that computer-mediated communication can be associated with increased intragroup conflict partly due to the possible anonymity of members, and people often put great importance on mutuality (Drouin et al. 2009).

However, some studies have shown that computer-mediated communication removes visual cues and possible distraction of irrelevant stimuli. Also, when virtual group members can assume a longer period of co-operation, anonymity is being replaced by acquaintanceship. Anonymity has been shown to increase the level of objectivity and constructive criticism and decrease emotional reactions of participants. (Drouin et al. 2009). Best decisions can derive from disagreements and contest, because aiming for consensus may eliminate independent individual thinking (Oinas-Kukkonen & Oinas-Kukkonen 2014).
Nevertheless, virtual organizations need to provide rich contextual information to the parties involved, which increases the message understanding and decreases the time used for creating mutual understanding. A supportive mechanism to accomplish this is to set certain norms for communication and use of technology.

3.2.1 Norms of communication and use of virtual communications technology

Communication norms should be expressed in advance and procedures identifying and conducting differences in communication practices should be recognized. While designing virtual business processes, it is useful to find ways to preserve the favorable communication norms and study communication patterns of successful cases that have been recognized along the way. Key and Dennis (2011) talk about rules of engagement and formal team charters, and state that similar rules should be applied to all members of the virtual network. They emphasize member effort, work coordination, balance of member contributions, task related communications, providing mutual support, and communication and coordination.

Key et al. (2011) demand standards for knowledge sharing, which take into consideration the fact that each member contributes significant amount of knowledge in some areas and less in others. A chief knowledge officer could be named to be in charge of the process and support systems and selection of appropriate communication tools. Furthermore, equal distribution of value can be increased by open discussions and engaging in social conversations. A project team should clearly state what is seen as collaborative and what is not in order to avoid misunderstandings. Silence can be damaging. Additionally, timely and quality responses to messages and forewarning of coming absences will enhance balanced knowledge sharing. It might be useful to create a communication plan in which the frequency and types of communication used are stated. Extraordinary collaboration could even be rewarded. (Key & Dennis 2011; Drouin, Bourgault & Gervais 2009.)

In general, virtual managers should not only master the use of technology (e.g. video conferences, on-line chats, instant messages, polling, the use of avatars, social media and e-mails) well, but they should also be able to select appropriate technology for teams on an appropriate occasion. For example to enhance communication and to
avoid misunderstandings utilization of a shared space instead of emails is recommended. Also terms set for the use of technology enhances reaching project goals. Terms can include issues like response time and which technology tool to use. (Key & Dennis 2011.)

3.3 Structural factors of virtual knowledge intensive organizations

Structural factors include various key elements of organizational support systems such as technology support systems, performance monitoring and reward systems, intellectual property rights and human resource management issues (Drouin, Bourgault & Gervais 2010; Andriessen 2001). They function as tools to support the flow of functional and communicational processes.

3.3.1 Technology

Hardwick, Anderson and Cruickshank (2013) see networking for innovation as much technical as social. Much of the smoothness of virtual work flow and ultimately the successfullness virtual organizations are related to the technical features of the platform. Roblek, Bach & Bertoncelj (2013) remind about the possibilities social media offers in developing the complete value chain of knowledge-based organizations. In addition to financial benefits, intangible assets like improved networking, communication and customer service can also be created. Also Wenger and Snyder (2000; 2002) see proper IT-systems as prior ways to manage a community of practice type of an organization and utilize certain domain specific learning to take place.

The usability, reachability and safeness of the platform create the basis for all communication and information sharing and consequently the basis for leveraging learning and innovation among and across the users of the service. In literature characteristics connected to a good user interface include easiness to contribute and playfulness. (Chiu et al. 2011; Doan et al. 2011; Oinas-Kukkonen et al. 2014.) Technology support factor relate to the availability of the technology, selection and implementation of different tools, user support offered to the customers and partners and system maintenance (Drouin et al. 2009).
Technical features like functional chat possibilities between employees and between employees and employers and between customers and employees, and different types of work alert systems are valued in crowd work organizations, and recognized as increasing the smoothness of co-operation and communication. Another aspect to consider is the level of machine contributions. Certain tasks are easy for humans and difficult for machines and vice versa, which should be taken into consideration at all times, especially when large crowds are involved and certain kind of information needs to be found from a large data. (Doan et al. 2011.) Different organizational practices and technology tools support knowledge attainment in virtual organizations (Griffith & Sawyer 2006). Thus, as virtual organizations are held together by communication, technology enables the knowledge transfer to take place.

3.3.2 Performance monitoring and reward

Crucial part of supportive structural factors of a virtual knowledge intensive organization is to monitor member’s performance and implement promotion systems recognizing member’s contributions (Drouin et al. 2009; Wenger et al. 2000.) In order to be able to monitor the performance of virtual knowledge workers and teams, one should be able to clearly state the objectives set for certain processes and tasks. Corporate mission and objectives should be in place. Also feedback should and can be provided when the objectives are clear. (Drouin et al. 2009).

The workers in a virtual setting are seen as driving the rate of work through their commitment to high performance and quality. Therefore procedures for administrative purposes (time, cost and progress management) have to be in place, but not as forms of control but rather as supportive functions that would bring operative transparency (Jackson et al. 2006). In crowd work literature the question of the amount of input versus the quality of input is often discussed. Yet, this discussion could be pointless. Considering the fact that professional knowledge workers have a high sense of professionalism and in a network with other colleagues they represent themselves and their companies, one can assume professional norms and collegial control to be fairly strongly impacting the quality of their performance.
Also Jackson et al. (2006) state that professional norms, inner control, and institutionalization make knowledge workers to approach the goals set by the company. For the same reasons they also hold themselves responsible for reflecting the values of the company and their profession that have developed to serve as an intellectual muscle (ibid). According to Jackson, Gharavi & Klobas (2006) the protestant work ethic and the “secondary” virtue of punctuality represent those norms that validate and improve work performance among top experts.

Virtual organizations are encouraged to create a system that would measure the achievement of the main objectives set for a global virtual team (Jackson et al. 2006; Prasad et al. 2002) assessing variables like flexibility, innovation and access to intellectual talent (Prasad et al. 2002). Results would allow a bonus system to be taken into use for excellent performance or project results like timeliness or quality of the results (Jackson et al. 2006). For recognizing different types of measures of value Wenger and Snyder (2000) suggest that companies should collect systematically success stories and publish them. They refer to an example of a company called AMS in which they increased their revenue by more than 13$ million in a year by analyzing a sample of collected stories. They also mention how senior executives’ contributions should be recorded and filed for later purposes in order to restore their valuable knowledge and experience in the company. (See 5.1. about collecting stories for organizational purposes).

In crowd work literature especially, actions related to the quality of the process are practical. These include limiting contributions different users can make, monitoring the system (naming for example trusted users and admin users to help in monitoring and by employing a reporting system for suspicious behavior), asking questions in a testing manner in order to receive reliability scores, and users rating each other and collecting reviews by users and reviews by clients. (Doan et al. 2011.)

Special economic aspects to consider in pay-for-performance types of organization are often related to rewards and incentive structures. Although, in addition to financial fees, rewards can be reputational, ideological or career related. Also communities of practice deploy both financial and benefit based rewards like new opportunities to develop new ideas, solve problems and build relationship. (Feller et
al. 2009; Marjanowic et al. 2012; Wenger et al. 2000.) Other than financial rewards, play an important role in the incentive structure of crowd work companies as well. Especially for motivating experts to be active and become committed to the crowd work organization, incentives related to reputation or career should be utilized. Crowd work literature talks about ‘fame management’ while referring to the ways to establish, measure and show fame, trust and reputation to the members of the crowd (Doan et al. 2011).

All in all, reward structures should be in-line with the company’s culture and encourage collaboration. (Feller et al. 2009; Marjanowic et al. 2012; Wenger et al. 2000.) It is important to notice that other than financial rewards require appropriate data mining practices to be in place in order to understand what is seen as motivational in which context. Financial rewards and incentives especially in crowd work are often agreed beforehand, however, it is somewhat problematic to be able to anticipate the amount of work that is needed in the long run in order to complete a project that would resolve the challenge set by the customer company. Nevertheless, predictability, clear terms and regulations enhance the level of risk management to all stakeholders. (Feller et al. 2009; Marjanowic et al. 2012.)

3.3.3 Intellectual Property rights

Models of how to handle IPR and other legal issues naturally varies a lot depending on the actual work process, type or industry and customers. However, critical point is to make sure these issues are clearly stated and considered beforehand to all stakeholders. According to Marjanowic et al. (2012) in a crowd work type of organizations, in which formal terms and conditions of engagement are more closely specified compared to open-innovation, the possible IP rights are bought by the customer from the expert, and the process is being managed by the so called broker company. In general, knowledge of terms of engagement should be specified by the broker company.

Yet, vested interest versus public interest certainly sets challenges to trust building, and may become a critical issue especially in a conflict situation between an expert and a customer, in which case the role of the broker company stands out. The broker
company needs to retain the anonymity of the customer’s competitive intelligence at least during the open phase of the process (Brabham 2008; Marjanovic et al. 2012). Additionally, according to Jackson (2006) virtual experts need support and protection from the broker company in relation to customers, which when successful increases the trust relationship between employees and employer.

Trust and clarity of organizational practices is needed especially when the virtual company deals with innovations of other companies. As due to the intellectual property right issues, many companies do not want to utilize open innovation type of approach, while others believe in rapidity on the technological innovations as their competitive advantage and want to enable new sales channels through open innovation. For that matter, open innovation approach can be used for other than just technological developments, like to be on time on markets, positioning the products, nurturing the ecosystems, and ways for using distribution channels. (Oinas-Kukkonen et al. 2014).

3.3.4 Human resources

Jackson et al. (2006) list characteristics such as self-starters, flexible, independent, motivated and collaborative to describe successful virtual workers. The members need to be comfortable with computer-mediated and Internet-based communication practices (Ardichivili, Page & Wentling 2003), which in the future will be self-evident for anyone. Therefore, input factors and staff selection play an important role in virtual knowledge intensive organizations. According to Drouin, Bourgault & Gervais (2009) in addition to staffing, also training and career development possibilities should be offered. However, in crowd work organizations the basic idea is to increase the pool of users or solvers powerfully, which contradicts with the idea of planned recruitment, unless the company follows the idea of a curated crowdsourcing (pg.16).

To come back to the relationship between amount and quality of the experts in knowledge intensive virtual pay-for-performance organizations, requiring enough personal details from the members as an act of control triggering the professional norms and collegial control diminishes the need for a specific planned recruitment
system at least in the first phase of entrance to the virtual community. However, the need for certain employee qualities increases when a project team is being gathered. Jermol, Lavrac & Urbancic (2003) for example call for clear awareness of the strengths of the network, which takes one back to the skills management (3.1.1) practices of the virtual knowledge intensive company.

### 3.4 Summary

Organizational structures can be supported by certain supporting systems; processes and structural factors. Especially virtual organization design is made possible by implementing highly dynamic processes, contractual relationships, edgeless, permeable boundaries and reconfigurable structures. For that reason the supporting processes and factors related to virtual knowledge work highlight the relationships and nurturing the social ties in addition to applying the latest technological solutions for virtual interaction.

According to the literature data there are two main processes that should be focused at: functional and communicational. Functional processes include skills management, which in virtual setting should focus on resource allocation and teaming based on the demands of the task, goals set, and reputation of the experts. To be able to handle the skills management practices in appropriate way, direct and indirect collaborative data mining practices should be in place with which one is able to produce a knowledge map that will help in allocating resources in efficient way responding also to the future needs of the company and the coming projects. Another area of functional processes extremely valid in virtual knowledge work is task design. Task design should highlight task predictability, clarify the type of task at hand, dividing tasks into subtasks and define the needed resources for each task and subtask. Stating clearly the objectives and making them constantly visible will increase performance satisfaction as well.

Communicational processes in virtual setting are crucial when the company design is literally held together by communication. Efficient virtual communication practices enable born virtual companies to become born global when connections and networks across countries exist. Communication should be personalized, routinized,
and efficient, and because of that the volume, rate and load of communication should be controlled. One important facet of communication is message understanding, due to the fact the traditional social cues are missing. It is suggested that norms of communication should be set and a person would be named for handling communication issues, methods and channels in the company.

In addition to functional processes, four different structural factors can be recognized benefitting virtual knowledge work in pay-for-performance business model. These structural factors function as tools enhancing supporting processes. First organizational structural factor is technology, which emphasizes the usability, safeness and playfulness of the platform, but also the level of user support and system maintenance. Also data mining tools and certain filtering tools are highlighted. Second structural factor is performance monitoring and reward systems, which focus on measuring the performance in relation to set goals and reached results by using different methods (success stories, rating, reporting systems etc.) as well as the reputational and financial rewards, which should be agreed beforehand. The third structural factor is the IPR related issues, according to which clear agreed rules should be set. Otherwise customers and experts might be inhibited to use this type of service. The fourth structural factor is human resources, which in virtual knowledge work should focus on collecting appropriate data about the experts and be able to position them in relation to the expert network. This will provide the company valid information about the network status each expert has and similarly the strength of the expert network. Based on the mapping certain career development plans can be carried out.
4 TALENT MANAGEMENT OF EXPERTS IN GLOBAL VIRTUAL KNOWLEDGE INTENSIVE NETWORKS

Within a single generation, people have moved from fixed location, one-to-one communication by telex and telephone to a variety of different modes of communication, all of which have been made possible by the sudden and rapid expansion of digital networks (Kimble 2011). People seem to have been well adapting to the use of Internet as part of their daily communications. On the contrary to the general belief of how Internet increases loneliness and isolation of individuals, several studies have shown positive correlation between active social interaction on the Internet and the level of activity in local communities, voluntary work and in other areas of society. (Bargh & McKenna 2004.)

However, the use of Internet as a communication channel is still under evolution. Those digits -natives born in the twentieth century do not ‘go to Internet’, but instead they live side by side with it as natural part of life. The difference to us to whom the idea of Internet has been introduced as adults, and who still remember how it was before, the use of Internet is on another level: we still need to think about it as a separate ‘thing’. Due to that, though Internet as a communication channel is the same for all of us, one of the crucial differences is in the way one reacts to it as a social context. What is one’s personal motivation and goals for using Internet as a channel for social interaction? Is one motivated to trust or not to trust to his/her interaction partners or website operators? On the other hand Internet communication means a leap of faith while for others the presence of anonymity and lack of physical and non-verbal cues make them always assume the worst. This degree of trust is of course related to our personal characteristics but also to the culture around us. For example the adoption rate of Internet varies greatly from country to country mostly due to the degree of trust i.e. due to the common belief if people can generally be trusted or not. (Bargh & McKenna 2004.)

Considering the evolutionary and recent development of Internet as a channel of communication, one understands how complex and versatile question managing purely virtual organizations is. Surely in the future, when digits –natives present the largest percentage of the working population, working virtually will be one the most
common ways of employing oneself. But for now, one needs to find the ways how to motivate professionals, especially those who are already employed by someone, to take part and contribute their expertise in virtual professional networks.

In chapter 4 talent management and expertise topics in the context of virtual pay-for-performance knowledge work will be discussed. This includes considerations related to the drivers of expert network as well as to the collaborative information and knowledge flow. As will be shown, these topics will give support both to the leadership logics and to the organizational support systems beneficial for virtual knowledge intensive organizations.

4.1 Expertise in virtual pay-for-performance design

Especially, in the pay-for-performance business model the work relationship seems risky in a traditional manner from the professional’s point of view, as the there is no guarantee of compensation covering the time and resources invested in the suggested solution (Marjanowic et al. 2012). The consequent possibility of sense of detachment or frustration can become problematic from the employer’s point of view if it leads to losing key expertise or if professionals would not be committed to their work. For that reason it is important to consider managerial functions like recruitment, retaining and evaluation of the professionals. How to make remote workers achieve quality performance? How to evaluate them and their contributions? (Doan et al. 2013; Jackson et al. 2006.) How to make them committed to the loosely coupled networks? The independency and looseness of the work relationship supports the idea of emphasizing talent management of professionals in knowledge intensive virtual organizations, in which the business idea is based on the expertise of these professionals. The experts need to feel tempted to actively take part in solving complex challenges and sharing their expertise.

Talent management as a term is being criticized for lacking lasting and well defined contribution to the field of human resource management, which is partly due to the fact that it is being used in versatile occasions as a trend term without consistency (Lewis & Heckman 2006). Lewis and Heckman (2006) collected several definitions of ‘talent management’ (TM) and found out three distinct strains of thought in regard
to the concept. Scholars have referred with TM to human resource work in general but emphasized a faster way of doing it so both via Internet or outsourcing and across the company instead of a certain unit. Secondly, the concept of talent management has been noticed to focus on the idea of talent pools, with which the authors refer to a set of processes which ensure the flow of employees into jobs throughout the organization. This requires talent mapping and data restoring which help to create an understanding of the workforce at hand. The third approach to talent management focuses on talent as such; it is seen either as an unqualified good and resource to be managed according to performance levels or as a critical good affected by strong HR functions and its ability to manage everyone to high performance.

However problematic the term talent management is in the field of HR, it takes into consideration valid aspects of virtual knowledge work such as the virtual working methods, talent pools and focus on expertise as such. Furthermore, GTM, which stands for global talent management, includes the idea of managing mobile, temporary and specialized talent on a global level, fitting strongly to the features of a global virtual knowledge intensive work.

4.2 Defining the level of expertise

No matter what, all competitive organizations should actively try to find and develop talented experts to be able to compete (Germain & Ruiz 2009) and that knowledge and skills should be moved within the organization to where they are most needed. Isopahkala-Bouret (2005) approaches expertise in the framework of competence management and human resource management, which will clarify the special needs one has in managing the talent of experts.

Expertise in the framework of competence management is measurable, operational and transferable. In order to measure expertise certain measurements are used: total number of years in the profession indicating experience, academic level of formal education indicating competence and capacity to process vast amounts of information, grading in organization specific scale indicating the level of competence and overall training costs indicating the new knowledge acquisition of the company. (Isopahkala-Bouret 2005).
Competence transfer in organizational setting means that people who have knowledge communicate it in a form of explicit data. People who receive it recognize the relevance of it and will apply it and transform data back to knowledge. Competence transfer enables the codification of knowledge, in which knowledge is made organized, explicit, portable and understandable (Davenport & Prusak 1998) for example by creating competence maps. Deep knowledge cannot be shown like this but as tacit knowledge it requires socialization. (Isopahkala-Bouret 2005).

The challenge is in producing accurate and up to date profiles. Another more internal challenge relates to making expertise shared property. Expertise is never context of person free, which makes it challenging to be coded and by trying to map it out one ends up underestimating the expertise. People with expertise are hard to manage: they have tacit knowledge which without socializing is difficult obtain or they don’t want to give up on it in first place. Also the idea of giving up on knowledge may lead to the question of what is left for me then. The focus should be in developing knowledge of the experts instead of using and controlling them. (See Isopahkala-Bouret 2005).

Consequently, in the framework of human resource development the concept of expertise can be intuitive, contextual, or narrative. Intuitive expertise refers to the way experts vs. novice have internalized meaningful knowledge patterns and categories and are able to utilize them in problem solving situations, and whether learning from those experiences occur. Contextual expertise highlights the ability of an expert to reflect the surrounding context or activity system instead of reflecting only individual point of views. Narrative expertise includes the idea of being able to create new narratives which enable understanding of new professional experiences and commitment with work in a novel way. (Isopahkala-Bouret 2005). These aspects of expertise will be further studied in the following chapter specifying the virtual interaction among the experts.

4.3 Drivers of expert network

“People want to share”
One of the key factors defining the failure or success of a virtual community is its members’ motivation to participate and share; willingness to share knowledge but also use it as a source of new knowledge (Ardichivili, Page & Wentling 2003). One would not see this problematic to accomplish as people naturally desire to communicate and work with others in groups, but along with the rapid development of communications technology a new dimension has been added to this fundamental desire, which prevents people from sharing (Kimble 2011).

However, according to Ardichivili’s, Page & Wentling (2003) study of a virtual community, most felt there is a willingness to share, and only minority were not willing to share due to the ‘information hoarding’, which refers to seeing knowledge as individual’s private asset and competitive advantage. However, mostly people were afraid to post due to the fear to lose face and fear to let colleagues down. People felt that they were in need of clear directions of what are acceptable postings.

Because credibility and expertise in virtual networking comes from the extent of involvement in the network, including the amount of participation, frequency, and the usefulness of the information provided (Dawley 2009), members of an expert community might feel hindered to take part. People hesitate to contribute out of fear of criticism or ridicule. They can be afraid to post something they are expected to know already or that they might mislead others. They might belittle or be unsure of the importance, accuracy or relevancy of their contributions. Also confidentiality of topics or reasons related to security can prevent member contributions. New members or younger professionals might believe that they have not ‘earned the right’ to post. (Ardichivili et al. 2003.)

Managers of a virtual community have great responsibility to keep users motivated and facilitate learning and innovation throughout the virtual network, and they should consider how all that potential is turned into intellectual capital of the entire organization. (Key et al. 2011; Chen et al. 2010). Virtual organization should offer appropriate conditions for knowledge generation and dissemination. These conditions enable community interactions, promote conditions for open exchange of
ideas and information, create time and space for exchanging stories and expertise and support innovative thinking. Any artificial restrictions and managing or inhibiting spontaneity should be avoided. (Ardichivili et al. 2003.) Encouraging member contributions and commitment can be approached from different perspectives.

4.3.1 Committing experts

Committing can be compared to fighting against windmills as people still tend to choose the existing networks to find solutions to exchange information (Ardichivili et al. 2003). However, some individual features anticipate stronger commitment level than others. On the other hand those experts find it effortless to contribute, but on the other hand they also recognize the benefits the membership in this kind of network offers to them.

In other words, instead of direct control the most powerful maintainer of discipline and control in the context of virtual organizing is self-motivation (Jackson et al. 2006). Brabham (2008) refers to individualistic and libertarian mentality prevailing in the web. He sees virtual communities as outlets for creative energy, which is driven by the desire to learn and acquire new skills. Additionally, crowd work or pay-for-performance type of communities, offer a chance to incorporate that experience in the seeking of better employment or establishing oneself in freelance work as an entrepreneur (Ibid.).

According to social cognitive theory individuals are more likely to contribute in behavior that they expect to result in advantageous consequences. For that reason virtual communities should emphasize actions that trigger individuals’ self-motivation and consequently positive outcomes that are expected to result from the membership of virtual organization. User behavior is being shaped by self-efficacy, perceived relative advantage and compatibility. (Chen et al. 2010.)

Certain self-based considerations can be related to experts as human beings. Often these professionals possess a certain formal status and they are able to gain informal recognition (postings, contributions) from other members of the network. Experts have often reached a stage in their lives when they feel a need to give back and share
their expertise. They want to act as mentors in different communities. (Ardichivili et al. 2003.)

Naturally motivation for knowledge sharing can be intrinsic (based on monetary motivation) or extrinsic (based on administrative motivation) (Ardichivili et al. 2003). In crowd work literature considerations on how to encourage and retain users have resulted in practical advices for increasing commitment and self-worth of the users. Practices applicable in professional crowd work organization are for example providing ways to establish fame or reputation management (e.g. “user of the month”), showing how users’ contributions have made a difference, providing an enjoyable experience (professional publications, research results etc.), setting up competitions (top rated users by clients etc.) and by providing ownership situations (e.g. providing different roles for users i.e. a project leader). (See e.g. Doan et al. 2011). Interestingly, Jackson et al. (2006) state that organizational employee monitoring and regulating systems that appeal to employee needs, strengthens employee commitment.

Similarly, Oinas-Kukkonen & Oinas-Kukkonen (2013) approach the commitment factor from information technology perspective, while referring to the idea of ‘persuasive user experiences’. They state that there is psychological grounding for developing persuasive software features and reflect on what makes people to put in effort in order to try to think of new solutions or innovations. They think that persuasive system design can lead to behavior change of users. The system design should aim for boosting positive self-concept of the users, which would then lead to increased level of interaction and learning. Ultimately the system should be used as intended. Persuasive system design can take place either through central or peripheral route, where central route accentuates reason and argument and peripheral route emphasizes social cues i.e. several arguments (Petty, Cacioppo & Goldman 1981).

Cialdini (2001) found six persuasive strategies: reciprocity, commitment and consistency, social proof, authority, liking and scarcity. Similarly Oduor et al. (2014) recognize four important software design patterns for social influence such as social learning and facilitation, competition, cooperation and recognition (Oinas-Kukkonen
et al. 2013; Odour, Alahäivälä & Oinas-Kukkonen 2014). According to Fogg’s studies (2003) powerful persuasion principles were considered to be related to similarity among users, shared affiliation or a feeling of being in the same team, persuasion through praise, social dynamism like the rule of reciprocity and playing different social roles like authority, friend, entertainer or opponent. All of these principles can cause positive change in users’ attitudes and behavior, which will then make them more committed to the virtual surrounding at hand.

A software system should provide means for users to be able to observe and comment on the behavior of their peers and other users, which results as social learning and facilitation. (Odour et al. 2014.) In general social dynamics refer to the rituals people have while meeting and communicating with each other. Computer technology can utilize these unwritten rules of social dynamics to convey social presence or to persuade user. Users can be asked to express their opinions about issues they feel strongly about or to make a selection between options by clicking a button in dialogue box. The system can try to tempt the user to get more involved with the possibilities and functionalities the company to have to offer by showing different types of dialogue boxes which persuade users to find out more. It should be carefully considered if these types of functionalities cause irritation, especially if they are repeated too often. (Fogg 2003.)

Service providers or computers can also deploy different social roles which persuade users in different ways. Social roles can be effective in motivating but the role models should be carefully selected for example in more traditional businesses authority figures persuade users better than on sites and services which focus on more emergent fields. A question worth to consider is if the user is looking for a social experience or are they using a service purely for its efficiency. This naturally varies from service to service. (Fogg 2003.)

One of the unwritten social rules is the rule of reciprocity according to which one should always pay back a favor after receiving one from someone (Brown & Duguid 2000; Chen & Hung 2010; Cialdini 2001; Fogg 2003). Anthropologists consider this rule as a universal pattern of behavior; people want to repay a favor done for them (Fogg 2003). Cooperation is related to the rule of reciprocity, assuming that often
people want the share and interact with others. Group discussions encourage cooperation by offering and gaining peer support on different matters. Users should be able to form groups and collaborate freely, which would then help them find like-minded people with similar ambitions to share their ideas with and gain support in achieving their goals. (Odour et al. 2014.) Thus, virtual pay-for-performance businesses should aim for creating an organizational setting in which fruitful collaboration between experts will take place.

Jermol et al. (2003) have applied principal-agent theory as a framework for problem analyses of this type of setting. Analysis pointed out asymmetries between partners due to the different backgrounds and motivations. It showed asymmetric distribution of information: hidden characteristics, hidden action, hidden information and hidden intentions. So, if partners in a virtual knowledge-intensive network are to form long term successful collaboration, they should be aware of non-technological issues like trust building and choosing appropriate forms of partnership. (Jermol et al. 2003.)

In Fogg’s (2003) study similarity among other users was shown to be related even to trivial issues like hometown. Working with people with similar personalities was experienced as satisfying and beneficial for the users. Personality targets of the users should be considered. Forms of similarity, which should be considered in software design, emerge for example in opinions and attitudes, personal traits, lifestyle, background and membership. Similarity can be shown in use of certain kind of language, style of art, audio, photos, video clips etc. similar to the target audience. One option is to use language that reflects the online personality of the company and how they want users to see them, for example hip or formal. Even experienced engineers talented in technology treated computers as products having preferences and personalities. Also shared affiliation or a feeling of being in the same team correlated with the system’s ability to be persuasive. People who thought that they worked with a computer labeled as a teammate felt that the computer was similar to them, smarter and offered better information. These participants were happy to choose the solution the computer suggested. (Fogg 2003.)

Recognition for that matter gives people the pleasure of being noticed and appreciated by other people. In a software system design this can mean public
recognition given to a group or to individuals by the service provider or more importantly by the peers. A system of top achievers for example provides users with a reason to achieve targets. Stories about well-performing users can function as positive examples, giving recognitions and reasons for ranking or giving titles to those users. Users should be aware of the action steps of how receive a set target to receive the next reward. (Odour et al. 2014.) Interestingly, praises received were even more important than visual attractiveness of the system. Sincere or not, praises resulted having a positive impact on people’s attitudes and behavior. People who received praise, feedback or alternatives to choose from felt better about themselves, were in better mood, felt more powerful and that they had performed well. They also considered interaction engaging, were more willing to work with the computer again, liked the computer more, and thought the computer had performed better. (Fogg 2003.) “By offering praise via words, images, symbols or sounds, computing technology can lead users to more open persuasion” (Fogg 2003: 105). Software features that persuade people are different praise rewards like positive feedback and trophies and other social badges. Features that are able to leverage people’s social behavior are proved to be persuasive. These features support social learning, comparison and facilitation, recognition, competition and co-operation and normative influence. Additionally, applying game mechanics and gamification reward users for their actions especially in the case of short term tasks (Odour et al. 2014; Oinas-Kukkonen et al. 2013).

Competition and gamification for that matter should be added by applying ranks, scores and levels that make it possible for the users to compare their performance to other users’ performance and modify their goals according to that. For some users competition may however cause anxiety and for that reason should be voluntary. (Odour et al. 2014.)

Another factor increasing participation in virtual communities is interpersonal trust, which indicates a sense of good intentions, competence, benevolence and reliability of members who share knowledge in virtual communities (Chen et al. 2010). Therefore, in order to create organizational knowledge on a global scale Nonaka and Takeuchi (1995) call for trust building among the project participants through socialization and dialogue. Social communication is a prerequisite for creating trust.
Trust is enhanced by giving recognition and conducting personal interviews, by showing consistency and doing what is being promised. (Key et al. 2011.) Clear agreed sanctions should also be agreed for violating the trust (Dhanaraj et al. 2006).

4.3.2 Enforcing knowledge flow and retention in a virtual organization

The success of a knowledge intensive virtual enterprise critically depends on recognizing partners’ expertise, tools and skills as marketable knowledge assets. This requires efficient storing, updating, sharing, promoting and transferring of knowledge, which is needed for solving particular challenges.

Knowledge flows when people view knowledge as public good belonging to the entire organization, as a moral obligation and community interest not by a narrow self-interest. Sharing knowledge and finding solutions for complex problems should be seen as part of the community. A functioning virtual knowledge-intensive community reflects organization culture that encourages mutual supportive relationships among employees. (Ardichivili et al. 2003.)

It also implements different appropriate areas of knowledge management, such as technological solutions, organizational, economic, legislative, psychological and cultural issues. Also quick recognition of business opportunities and timely response on global scale features functioning virtual organization. (Jermol et al. 2003.) High levels of virtual performance can be learned, although particular focus, skills and thinking are required. The learning process can be enhanced by utilizing knowledge management practices suitable for virtual knowledge transfer. (Key et al. 2011.)

The knowledge management issues highlighted in knowledge-intensive virtual organizations can be divided to culture of collaboration, knowledge mobility, valuable knowledge and knowledge retention.

4.3.2.1 Culture of collaboration

In a virtual knowledge-intensive organization culture of co-operation should be implemented (Jermol et al. 2003). In this context knowledge management involves
both changes to cognitions’ of individuals as well as to the way knowledge is socially constructed, transferred, explored and synthesized among different communities. Different perspectives exist within an organization, thus, what is needed are integration mechanisms and capability to manage these integration mechanisms. (Sparrow 2006.)

4.3.2.2 Knowledge mobility

Knowledge mobility is a presumption to learning and innovations. Knowledge mobility or knowledge transfer can be encouraged by creating easiness to share, acquire and deploy knowledge, by learning from each other, by making resources available for all stakeholders involved and by valuing and deploying different types of knowledge available in the network. (Dhanaraj et al. 2006; Key et al. 2011).

Dhanaraj et al. (2006) refer to ‘knowledge flow’ that can be enhanced among the network members by supporting openness in sharing valuable knowledge and by creating logic of confidence and good faith and a certain bond of identity. This ‘inter-organizational socialization’ naturally takes place through formal and informal communication channels. For this reason virtual bonds and connections should be supported by events, which make it possible meet virtual partners physically as well.

Trust enhances interaction between virtual members and is one of the core elements in assuring fruitful communication and knowledge transfer and ultimately new innovative solutions (Key et al. 2011; Chen & Hung 2010; De Laat 2005). Although various researchers believe that cyberspace trust relationship is impossible, De Laat (2005) is confirmed that in virtual task groups trust is being created through mechanisms of professional reputation. Also partaking in different institutions with certain cultures, rules, regulations and roles can be expected to result as a sign of trustworthiness. Chen and Hung (2010) recognize trust as one of the main drivers in knowledge transfer and product innovation in virtual communities. In a pay-for-performance business relationship trust is an issue especially between employer-employee and between customer-employee. Naturally, trustworthiness of the network stakeholders increases the knowledge flow and innovation.
4.3.2.3 Virtual "encyclopedia" producing valuable knowledge

When a virtual community is seen as a source of new and valid knowledge, it increases experts’ motivation and interpersonal trust. Ardichivili, Page & Wentling (2003) promptly state that this kind of system should be approach as a kind of encyclopedia in order to be seen valuable from the experts’ and customers’ point of view. It should function as a useful problem-solving tool receiving postings from the entire system and a tool that keeps members informed of the general developments in their professional field. It should be utilized as a tool for managing the work of various studies and professional interest groups that are posting meeting minutes, agendas and summaries etc. It should be a system used as receiving help from specific individual experts and a replacement for meetings allowing threaded discussions and Q&A sessions. When virtual community is seen as a source of knowledge it helps people to more quickly integrate themselves and become productive faster, and it helps geographically dispersed units to work together and communicate better. It also offers access to best practices and lessons learned. (Ardichivili et al. 2003.)

Valuable knowledge or innovation appropriateness should be managed by ensuring equal distribution of value among the network members, and at the same time preventing so called ‘free rider’ behavior, which refers to members that enjoy the benefits of the network without contributing their best ideas to the network. Innovation appropriateness is strongly connected to procedural justice and joint asset ownership. (Dhanaraj et al. 2006.) Accordingly, Chen and Hung (2010) present one of the most significant factor driving knowledge sharing, namely the norm of reciprocity, which means sense of mutual indebtedness that would keep the balance in equal knowledge contributions in virtual co-operation in which participation is voluntary. Individuals are assumed to repay the benefits they receive from others: friendly or hostile actions are responded with similar actions. For that reason, the norm of reciprocity can function as a motivational mechanism in virtual knowledge sharing and creates a need for fostering effective and inspiring knowledge transfer.

Chen and Hung (2010) have recognized other key aspects related to valuable knowledge sharing. Firstly, by knowledge sharing self-efficacy they refer to a user’s
confidence in his/her ability to produce knowledge that is valuable to others. Second, they state that so called perceived relative advantage relates to knowledge contributor’s assumed (personal or organizational) benefit of knowledge sharing. The higher the perceived relative advantage the more the knowledge-sharing culture is being encouraged. Thirdly, perceived compatibility is connected to virtual users’ individual values and needs and to the level they are compatible with perceived knowledge sharing in the community. (Chen et al. 2010.) All these factors have an effect on how valuable the knowledge network is seen and how experts position themselves in the network and contribute valuable information.

4.3.2.4 Knowledge retention

Equally important as knowledge mobility is knowledge retention. Dhanaraj et al. (2006) refer to network stability that is important to maintain in order to increase value creation capabilities. So called dynamic stability (not losing members of the network and holding on to key experts) can be maintained by enhancing the reputation of the network, by developing a future oriented attitude and forward looking expectations and by emphasizing deep and broad interaction and relational ties among the members of the network. Innovation is enhanced by reducing the perception of distance, which in case of virtual organization, seems challenging. (Key et al. 2010.)

Therefore it is crucially important to find connecting aspects between virtual members. Senge (2006) considers shared vision as one the most powerful forces in human affairs. It provides focus and energy for learning and creates common identity, which is emphasized in a multicultural environment and in cross-cultural communication. All the problems in trying to accomplish the shared vision seem trivial compared to the importance of the goal set, which is in line with task design requirements (3.1.2). People are more willing to take risks and experiment new solutions. Sharing a common vision requires personal commitment to the same vision and the values it represents that should be taken into consideration in a heterogeneous organization. But again, when accomplished the diversity of people can serve as pool of talent, innovativeness and creative actions. (Senge 2006.) No permanent staff, however strong motivation and well-defined common goals allow
successful collaboration of partners across organizational boundaries (Jermol et al. 2003).

4.4 Summary

Adjusting to the variety of different virtual working methods is still in process; however there is great variation not only between individuals and generations but also between countries and cultures. Committing remote and busy top experts virtually in a pay-for-performance business model is not an easy task, and for that reason one must first of all understand expertise as such and how to utilize and retain these experts’ talent for the organizational purposes. For that reason, it is important to internalize the talent management practices of experts in virtual setting. The level of expertise should be defined in the way that the gained information responds beneficially to the needs of the company.

The drivers of the expert network relate strongly to level of knowledge flow, creation and retention. The sharing activity can be however hindered due to fear of losing face or due to confidentiality issues. Committing experts requires making experts aware of the benefits the membership provides them, which in turn will result as increase in self-motivation of the expert to contribute and share their expertise. The level of commitment can be increased also through fame management practices and adding certain gamification features. Other types of persuasive user experiences should also be explored and developed, in order to add the level of interaction and learning and leverage experts’ social behavior. These include the idea of implementing social dynamics and different social roles in virtual world, free collaboration and forming of groups, and for example emphasizing similarity among experts or the idea of belonging to the “same team” and providing them recognition and feedback. The social behavior will increase the level of trust as well, which is considered a prerequisite for organizational knowledge sharing (ch 2.1). In short, knowledge flow and retention in virtual organizations can be enhanced by implementing culture of collaboration, knowledge mobility among the network members, and by focusing on producing, collecting and retaining valuable knowledge.
4.5 Theoretical framework of the study

The theoretical framework of the study deriving from organizational, psychological, information technological and sociological fields sheds holistic light on the matter of virtual organizations and virtual organizing in the knowledge-intensive fields. Partly the discussion derives from philosophical perspectives and partly it focuses on practical actions virtual organization should carry out. The leadership logics create a rather holistic grounding and the philosophical approach on how to orchestrate a global virtual organization, while the organizational support systems refer to more practical actions which should be taken. Talent management of experts in global virtual organizations specifies the needed thinking and actions when it comes to knowledge experts and committing them virtually. It includes both the philosophical approach to understanding expertise and user persuasive systems, and the everyday implications of how to utilize this knowledge in practice.

The theoretical framework outlined the leadership logics and philosophy which enhance global virtual knowledge work. The main factors and at the same time relational processes; creating trust and coherence among the network members, were shown to be highlighted in the theoretical discussion of virtual management. Naturally the organizational support systems and the leadership logics go hand in hand and cannot exist without one another. Also holistic management approach was emphasized in virtual managing offering systemic visioning according to which one should not forget how all parts of a network and the surrounding ecosystem are intertwining.

On the organizational level support systems of virtual knowledge-intensive organizations can be divided into functional and communicational processes and to certain structural factors. Functional processes supporting virtual knowledge work include skills management and task design aspects. Communicational processes for that matter refer to the quality and volume of the communication as well as to how to control that through norms of communication. Structural factors supporting functional and communicational processes are technology, performance monitoring and reward systems, intellectual property rights and human resources.
On an individual level, from expert point of view, the crucial issue in virtual knowledge work is the commitment and knowledge sharing activity of key experts. This requires talent management of the experts and understanding the main drivers of the expert network. Different persuasive user technologies and functions as well enforcing purposeful knowledge flow and retention has been proven to function as main drivers of a virtual expert network. Again, strong connection between all the three elements of the study can be recognized. Talent management can be supported especially by functional and communicational processes of the organization as well as by the supporting the establishment of the relational processes of the company and implementing the needed structural factors especially for virtual settings.

Figure 3. Theoretical framework of virtual knowledge work
5 RESEARCH METHODOLOGY

The phenomenon of knowledge intensive virtual organizations can be approached from various points of views and it includes multiple perspectives from appropriate organization design and structure to how to manage a virtual organization as part of a larger virtual network and to how to maintain and attract distant experts. In this study the focus is especially in traditional terms loosely coupled virtual pay-for-performance type of consultancy companies, which increases the certain demands set for a successful virtual company.

Because the aim of this study is to clarify and increase the level of understanding in relation to virtual knowledge intensive organizations, it is natural to approach the phenomenon from the point of view of those people who can be recognized as experts in virtual working and who have utilized virtual business operations. Due to the multiple valid perspectives one can approach virtual organizations, it makes sense to examine the phenomenon from the perspective of people who have experienced virtual work different from each other: from employer, employee and from investor’s point of view. They all represent different context of virtual organizing.

In qualitative research the object of the study is the individuals’ world of experience and the experiential reality which is comprised of various meanings. These meanings appear as events initiated and concluded by individuals such as their actions, plans and set goals. (Varto 1992.) In order to understand holistically the phenomenon of virtual organization in present day business fields the focus of this study is in discovering the meanings and the relationships between different meanings attached to the phenomenon. The objective is in collecting the meanings experts relate to the phenomenon of virtual organizing in their narratives.

In order to receive the meanings emerging from the participants as authentically as possible in a research setting, it is best to let the participants to narrate. Given the possibility to narrate about a phenomenon, it is possible for a researcher to gain
knowledge about the experiences and meanings related to the phenomenon of the study at hand.

The research is guided by the postmodern view of knowledge according to which all knowledge is in relation to its context and to its composition (Varto 1992; Tuomi & Sarajärvi 2002). Therefore the stories about virtual organizing and working are constructed from individuals’ lived and experienced lives, but ultimately they can be seen as reflections of the surrounding culture (Polkinghorne 1988; Bruner 1986). Hence, because the interest is in individuals’ stories the study follows narrative research methodology practices.

Narrative research method has strong roots in the academic world especially in social, psychological and educational fields, but it has also gained a rather solid methodological position in short period of time both in business research and as a practical tool in managing organizations (Czarniawska 1998; Gabriel & Griffiths 2004; Boje 2008). Stories open a significant window into the emotional and symbolic lives of an organization, and for that offer a powerful research tool (Gabriel & Griffiths 2004).

In the following chapters further support is given to the selection of the research method especially from the epistemological and ontological point of view. It is crucial to describe the epistemological framework of the study since it will directly reflect and define the nature of the study. Also the collection of data and data analyses will be discussed.

5.1 Narrative research method

With words human beings conjure up their reality (Lonka & Saarinen 2000). In the narrative framework the reality is being captured through words and stories (Heikkinen 2001). According to Bruner (1986) human beings have two distinct however complementing ways of thinking and forming knowledge: logical-mathematical and narrative. While logical-mathematical (or pragmatic) thinking pursues universal and context free truths using empirical methods, the purpose of narrative thinking is to understand everyday actions in a certain context. (Bruner
Yet, also narrative framework includes various approaches. With narrative one can refer to the processes and concept of knowledge formation, to the nature of the research data, the way of analyzing research data and to practical methods like therapy depending on both the scientific context as well as the way the concept is being understood and interpret. (Heikkinen 2001.)

In this research narrative method refers to the idea of how knowledge about oneself and about the world is being formed and transmitted through ever changing stories (Heikkinen 2001) but also to the way research data is being collected and analyzed. With the help of narrative thinking individuals connect actions and events to an understandable whole. Seeing events connected to each other for that matter increases understanding of a certain phenomenon. (Polkinghorne 1988.) Narrative view of reality is based on constructivist approach, according to which reality is being constructed in the minds of individuals and in the social context in different ways depending on the individual and the context (Heikkinen 2001; Boje 2001). Clandinin & Connelly (2000) promptly state that if one comprehends the world from a narrative perspective, it is justified to research it narratively.

Furthermore, according to the hermeneutical approach life and stories are significant only in relation to each other; life is being interpreted through stories and the implicit meaning of life is transformed explicit in stories. In order to understand life one must access the stock of stories (Widdershoven 1993) or cultural stock of stories (Polkinghorne 1988; Clandinin & Connelly 2000). A researcher must acknowledge that narrator’s stories are always flexible, variable and most importantly shaped by interaction with a certain audience and context. (See Chase 2005.)

Hänninen (1999) recognizes a spiral like connection between life and stories. She points out that stories are not just imitations of life or cultures but they function as enrichers and parsers of the meanings of life. Hermeneutics explains also the relationship between the narratives collected and the entire narrative of the study. According to Bruner (1996) the hermeneutic spiral is the basis of all sensemaking and for that reason requires interpretation instead of being purely explained.
Hence, typical characteristic of narrative knowledge formation is in its ability to bind expressed events into a meaningful and appealing whole. It is an interpretative research method. (Koskinen, Alasuutari & Peltonen 2005.) In organizational studies the narrative construction of meanings is often related to a concept of ‘sensemaking’ refined by Karl Weick (2001) with which one refers to circumstances turned into situations that are then expressed in words and functions as a foundation to action. Although stories simplify reality, they simplify it less than the kind of formal models in the fields of pragmatic knowledge creation and science. Simplified realities also serve as useful guides for action. (Czarniawska 1998.) Through narrative research one is able to gain access to deeper organizational realities strongly linked to their narrators’ experiences. (Gabriel & Griffiths 2004). In deconstruction search for divergent interpretations the aim is in finding out how individuals perceive the phenomenon. This type of discursive work is mostly about demerging, contrasting and making of analogies. (Boje 2001.)

In the narrative praxis the life of organizations is shown as continuous every day and multilayered interpretations. People are able to consider the meanings they give to the events they have experienced and witnessed from multiple perspectives; from the company’s, their colleagues’ and from their own point of view. (Koskinen, Alasuutari & Peltonen 2005.) In narrative research methodology one takes into account symbols, stories, metaphors and rituals and the way they are intertwined with decision making and use of authority. These are also crucial factors of an organization. The methodology offers a research tool for studying organizational change. (Koskinen, Alasuutari & Peltonen 2005, Gabriel & Griffiths 2004; Hyvärinen & Löyttyniemi 2005.)

Interestingly, Czarniawska (2004: 655) refers to ‘Kalevala style of management’ and describes an example of a newly appointed US university chairman who after several failed attempts in drawing new lines for the future development of the department, decided to change tactics and started collecting ‘narratives of identity’ from his colleagues which then earned him authority and respect of his senior colleagues. Czarniawska assimilates this type of behavior to the Finnish mythology of Kalevala and to the “good Finnish doctor who is supposed to have collected his country’s treasure of stories…”
This research follows Czarniawska’s (2004: 652) interpretation of the uses of narrative in social science studies. After recognizing the field of practice under investigation (e.g. management), one should start collecting stories and provoke storytelling. Second step is to interpret the stories (what do they say?), analyze the stories (how do they say it?), and deconstruct the stories (unmake them). Third is to put together your own story and set it against/together with other stories. Ultimately the new narrated story or interpretation will become part of the field of research (e.g. organization theory).

Also in this study the goal was not to generalize findings from a sample to a population but to generate theoretically significant linkages. In all organizations people tell stories through which they are able to capture the history of the organization and their positions in it. All organizations have certain rituals which express order of different factors either directly or between the lines. Also different metaphors at different times describe the state of the organization in relations to its environment; when times are good the metaphors refer to innovation and creating new but when times are difficult the metaphors used are rather military like. A large part of the functionalities of an organization can be explained by these types of cultural structures instead of for example administrative information. (Koskinen, Alasuutari & Peltonen 2005.)

### 5.2 Data collection

While collecting narratives, one is often interested in change and/or the way life is experienced (Hyvärinen & Löyttyniemi 2005). A narrative researcher tries to explain and understand the dimensions of the narrated experiences (Erkkiä 2005). She or he is like a fellow-traveler guiding the research into the direction which allows free-association, contradictions and ambiguities. Ambiguities display individuals’ partial knowledge or understanding. (Gabriel & Griffiths 2004.) In qualitative research narratives expressing experiences consists more value than reporting discussions. A story always transmits an experience and for that justifies itself why it should be told. (Hyvärinen & Löyttyniemi 2005.)
There is no one correct way of collecting or analyzing narrative data. Narratives refer to a broad term including both written and verbal narratives or even heard conversations. (Chase 2005; Heikkinen 2001.) Practically all human forms of expression can be treated as narratives (Czarniawska 2004). Even the amount of participants is very much dependent on each study; narrative researchers often represent only a very small sample of narratives even just one individual (Chase 2005).

In this research the approach was to contact and interview individuals who had some experience in virtual knowledge-intensive organizations and who knew pay-for-performance business model. Due to the demanding and up-to-date research focus random selection of informants was not an alternative, which is why so called snowball sampling was used. In this setup only key person is known beforehand, and will then lead to other informants (Tuomi & Sarajärvi 2013). Utilizing this method one was able to reach informants from different areas of virtual organizing: 1) an investor of virtual companies, 2) a CEO of a virtual pay-for-performance company and 3) an expert working for a virtual pay-for-performance company. The aim was to approach the topic as holistically as possible. However, all participants represented one single business field, which helps to narrow the research topic meaningfully and to contrast the experiences of the informants to one another. If the expert would represent a totally different field compared to the CEO for example the views would have required further interpretation from the researcher, in which case the danger of over analyzing would have been possible. Representatives of a single field make it also possible to further describe the context from which the narratives derive from.

Theme interviews often produce a story which as such requires researcher’s active interpretation (Boje 2001). In a narrative interview it is important to be aware of how the story and its interpretation are being produced. Thus it is important to clearly describe the conduction of the interviews and the analysis. In order to leave room for the narrators’ authenticity, one should not limit their thoughts with too structured questions. (Erkkilä 2000.) However the line between structured and unstructured interview is vague; all structure can never be abolished from interview questions otherwise they would be pointless (Hyvärinen & Löyttyniemi 2005).
In order to avoid too leading questions a semi-structured interview was used as an instrument to collect data. The loosely structured questions of the interview were based on the review of the literature on virtual organization and expertise, i.e. the theoretical framework of the study. Interview questions focused on the experiences and thoughts the informants had about virtual organizations and the challenges they related to that (see Appendix 1). The interviews took place between summer 2014 and spring 2015. The interviews were held in the offices of the participants except the interview of the expert was held virtually, which in this case meant conducting an interview by utilizing the virtual platform. The answers from the expert were given in written form.

The interviews can be described as open and narrative. The openness in the written interview was implemented by presenting as open questions as possible. However depending on the respondent, their willingness to lead the interview situations varied and for that also interviews’ path of narration varied greatly. Nevertheless, that is how the narrative interviews should be; they represent the narrators’ experiences. One of the strengths of narrative methodology is the possibilities it offers to the informants to share concrete and detailed point of views of the phenomenon and opportunities to select the concepts and conceptual framework they choose to attach to their experiences. The informants are able to attach the phenomenon under study to their context in the way they want to. (Erkkilä 2000.)

The interviews conducted were more or less dialogue like. The interviewer made additional questions if it felt like a natural continuum to the conversation and comments that proved the interviewer’s interest in the stories told. Because the informants were all well experienced professionals in their fields, the researcher did not have to hold back her own points of views either. It is important to sense the conversation environment if it allows this type of decisions to be made without affecting the opinions of the informants.

The theoretical framework of the study helped the researcher to structure the phenomenon, but it did not dominate the interviews, which is why these interviews could be described as open interviews. In an open interview the intuitive and experiential approaches and interventions are allowed. (Tuomi & Sarajärvi 2009.) As
such, an interview is always an interactive event taking place between the interviewer and the interviewee. Both participants come to the situation with their experiences and interpretations. In another interview the questions asked could produce a different kind of narrative. (Erkkilä 2005; Hyvärinen & Löyttyniemi 2005.) Therefore all interviews in this research were also different. While the CEO described the story of his company from a rather wide and story like perspective, the investor for example focused on general and rather prompt thoughts about the phenomenon of virtual organizing. For this reason the some interviews lasted for 1.5 hours while others lasted 40 minutes. After this the interviews were transcribed as precisely as possible and were ready to be interpret and analyzed.

5.3 Data analysis

Following hermeneutic understanding the approach of this research is based on the idea that research is individuals’ subjective activity, which at the same time functions as an essential resource in the development of understanding (McAuley 2004). Similarly in narrative research, there is no one dominant way of utilizing the data. Often the selected view of narrative research reflects the researcher’s theoretical interests and the uses the field material will be put in; narratives are never ideology-free. (Gabriel & Griffiths 2004; Boje 2001).

According to Koskinen, Alasuutari and Peltonen (2005) narrative analysis offers a tool to study how human beings produce versions of events, structures and people in their environment and how they build intentions based on these accounts. Boje (2001) describes a way to analyze narratives as networks of stories in which different elements of narratives are related to each other. Based on these elements one is able to build a versatile understanding of the phenomenon.

First, the focus is in analyzing the structures of the narratives and secondly in closer analyses major themes and categories are being identified. According to Czarniawska (2004) data analysis in narrative research does not look for chains of causes and effects but for frequent or usual connections between various elements of narratives. It searches for patterns and regularities instead of laws. These patterns are not thought to reveal any deep structure of the world or mind but rather are affixed to the
text both by the reader and the writer. The compatibility of understanding by the reader and the writer is because they both are “producers and consumers of the same set of human institutions” (Czarniawska 2004: 651).

Yet, like the data in any other research methodologies also narrative data can be approached three dimensionally: inductively, deductively or abductively. Abductive reasoning suits narrative research methodology with its postmodern connotations. However, in abductive reasoning one often utilizes deduction, with which observations gained through abductive reasoning can be organized in a new way, and with the help of induction the empirical features of hypothesis can be either validated or weakened. (Tuomi & Sarajärvi 2009; Niiniluoto 1983.) This is true also in this study. The theoretical framework gave structure to the researcher’s thoughts but ultimately the theoretical and the empirical data are synthesized into one single interpretation of the phenomenon.

In the very beginning of the analysis process, one must recognize the fundamental unit of analysis in narrative research. One of the many is the topic of stories i.e. what kind of stories are told about a certain issue. (Gabriel & Griffiths 2004). The idea of this study was to find out what kinds of narratives are told about virtual knowledge intensive organizing from the point of view of various representatives in the field and what kind of meanings are given to the phenomenon. Then researcher must familiarize with the data and clarify the focus and interest of the study to him-/herself, which in a context of research is linked to the research questions. This allows the researcher to eliminate irrelevant information and emphasize the most crucial data. This process is called coding or interpretation. After coding the data the researcher can begin the actual analyses. (Tuomi & Sarajärvi 2013.)

At this point it is was inevitable to start translating the transcribed Finnish interviews into English. Although all participants could have given the interviews in English, it was more suitable to use their authentic language considering the methodology of the research. The analysis was done in English for the parts that were intended to be used in the final report. It is important to understand that translation in never neutral (Isopahkala-Bouret 2005) and there were language-specific content in the transcription that was impossible to translate from word to word. However, constant
aim was to stay as true as possible to the interview context and the meanings given to the phenomenon in that specific situation. The selected translation was an effort to support that thought.

Main categorization of analyzing methods in narrative methodology divides it into *narrative analysis* and *analysis of narratives* following Bruner’s way of diving knowledge formation into two distinct but complementing traditions. *Narrative analysis* follows the tradition of narrative knowledge formation (narrative cognition), whereas *analysis of narratives* is based on the logical-mathematical tradition (pragmatic cognition). (Bruner 1986; Polkinghorne 1995; Heikkinen 2001.) *Analysis of narratives* is about making logical and well-defined propositions and argumentation and creating clear-cut classifications and definitions of concepts, whereas *narrative analysis* aims for thematic and coherently advancing production of a story or narrative.

According to Bruner (1986) both ways produce valid and useful knowledge however the quality of knowledge varies. In *narrative analysis* the aim is in synthesizing data instead of classifying it into categories, which in this case provide the most holistic approach to respond to the research questions about virtual organizing. In the analysis process of this study the empirical data was read through the lenses of research questions guiding the process from the very beginning. In addition, following narrative praxis, the data can be viewed multidimensionally. This means that interpretations can be made based on individual as well as cultural or contextual dimensions. These meaningful points and themes were combined and contrasted (deconstruction) and then put together to create new story and set it against and together with other stories, which in this case refers to the theoretical data of the literature research.

However, one must remember that during the times of postmodern constructivism it is natural and permissible to combine different research and writing methods. In addition to combining, postmodern state of mind is all about multidimensionality and at the same time contradictions, incoherency and uncertainties, which modern science has always despised. (Heikkinen 2001; Denzin & Lincoln 2004.)
6 NOT A PERBETUUM MOBILE - FINDINGS FROM THE EMPIRICAL STUDY

This chapter presents interpretations about virtual organizing based on the interviews of three different professionals. The narrative analysis of virtual organizing follows the main themes guided by the research questions. It is possible to approach the narratives about virtual organizing from two distinct however complementary point of views: leadership and organization. Leadership decisions directly affect the form of organization and its functions. However, in order to clarify the empirical framework it is important to present the narratives under clarifying main themes synthesizing the interviews into one larger narrative together with the theoretical framework. Citations from the interviews have been provided in order to give a voice of the interviewed to the reader as well.

The analysis of the interview data was an iterative process: answers to questions were searched from the entire interview data and not just from the section were the particular topic was introduced as an interview question. However in that way the chance of overanalyzing the presented meanings were intentionally avoided. This stands as valid example of how different questions provoke narratives under various themes depending on the receiver of the question and how they relate it to their previous experiences.

Different voices were heard but also particular themes were in common. The meanings given to virtual organizing reflected the context of the interviewed. The experienced CEO of a virtual company made several symbolic points (Gabriel & Griffiths 2004), which reflected the emotional attachment to the virtual pay-for-performance startup company he has been managing for couple of years. The investor of for that matter had to some extend an outsider’s role, which gave certain level of objectivity to his comments. He was considered as a person who understands present day business contexts, demands and needs; however he is not an expert in the specific field and networks or in the type of virtual pay-for-performance business model, on the contrary to the CEO. The expert, who participated to the study, has been involved in several projects in a virtual pay-for-performance company, in which she had had either the role of a project lead or then she has contributed as an expert
of the field. Naturally, her approach to loosely coupled virtual work was assumed to be fairly positive based on her willingness to join several projects. Thus, she was considered as a valid informant due to her rather vast experience from several projects in several roles.

*Leadership* benefitting virtual knowledge work focused in the interviews in the need for visioning (now and in the future) and making the need explicit to others, utilizing existing and new networks, controlling, and implementing non-traditional methods. The meanings given to virtual organizing and especially to the *organizational support systems* for that matter highlighted the skills management and task design, communication and norms of communication, performance monitoring and reward systems, technology support systems and issues of confidentiality and protection. These factors can be seen to be beneficial in the process of orchestrating a virtual expert pool and committing experts into virtual pay-for-performance work. In this chapter the narratives of the interviewed experts will be presented under the main themes of the story of virtual organizing in knowledge intensive fields.

6.1 *An evolutionary like system - Leadership logic benefitting virtual knowledge work in the narratives of virtual experts*

Corporate ideology (ideas, beliefs, emotions and values) is being seen as a guiding factor of a virtual knowledge intensive organization instead of formal structures. The corporate structures should be rather tacit and implicit and leave room for sense of autonomy. (Cunha 2002.)

"We (owners of the company) noticed that our higher values in relation to environment are quite similar...We can date back the exact time when the values of the company, positive, cool and gamification, were agreed together." (CEO)

"Who can actually make it in the world of cleantech? ...We had the will and a dream. A core basic idea was being the world’s toughest cleantech experts in selected segments. Channeling expertise to where it creates the most value...and also make money with it." (CEO)
Yet, what is expected is coordination devices and task predictability in order to avoid chaos and sense of detachment (Cunha 2002). If one cannot speak about structure in traditional sense, following Cunha’s ideas, maybe coordination of functions supports the idea of distant leadership better. No matter which concept fits the best to virtual knowledge work setting, it is clear that certain leadership logics are required.

“For it (a company) to function like a ‘perbetuum mobile’ that independently cuckoos and functions and everything goes smoothly, and you here calculate incomes... I don’t believe in that...It requires structure...In the beginning, let’s say three years, strict control. When routines are in place then, officially even, one could let loose a bit. This is to avoid disappointments.” (Inv.)

“Stiff or even hierarchical organization structure is needed. When there is more than ten people working in the company one needs to start thinking about it as an organization and you will need more structure and definitions...Experts have required a more strict process. At the moment the process is rather project specific.” (CEO)

Traditional management practices have to be put aside in order to be successful in a complex and competitive environment and attractive in the eyes of the partners. Jermol et al. (2003) call for implementation of methodology and techniques of complexity management, which are needed for self-organizational type of companies.

“Our system is evolutionary like: those who are not to continue will vanish at early stages. When there are no payment transactions to one way or another, they will die out.” (CEO)

“Finnish companies have proven to have functioning operation models even on a world scale, which supports the idea of being the best in expertise. Because Chinese can produce iron way cheaper in China, so if we would sell expertise we would represent the highest position in the food chain... Finnish markets are so small that this type of one time consulting does not work: we will run out of people so quickly.
So maybe we could somehow scale and duplicate it. One could from anywhere in the world ask questions and top experts would give their response to it.” (CEO)

Breaking traditions was naturally seen challenging.

“Traditional engineering work takes time to change and old contacts are not replaced easily. One the other hand selected segment and clear decision on how the money is being produced might help in this.” (Inv.)

“It takes some time to change our working habits; this kind of co-working method is quite a new thing.” (Exp.)

Similar to Jermol et al. (2003) the leadership needs expressed in the narratives follows three orthogonal dimensions: establishment of common vision, motivation and goals. They suggest a minimal set of rules, guidelines and standards to be agreed on. However, tools, methods and techniques to support collaboration, co-operation and connection need to be adopted.

“Clear future plans should be stated e.g. in year 2015 we will have a steering group or a talented expert with appropriate networks in five countries.” (Inv.)

Also the CEO of the company implied in many occasions of his story how they are constantly developing the functions of the company.

Understanding and creating the need for a particular company in the eyes of the rest of the ecosystem is important and was stated both by the CEO and the investor.

“All stakeholders of the ecosystem should support this business model for it to be successful in a certain field. Aiming at a win-win situation. A need has to be created...Try to make the business known for a special talent or part talent. It must be concrete and compact enough. For example a roadmap version 0.1 shown to attract and inform and future plans to develop it even further. One should avoid too large and permeable image which is difficult to grasp.”(Inv.)
According to the basic idea of orchestration the starting point for business operations is to create added value to both customers and other stakeholders of the organization network. (Dhanaraj & Parkhe 2006; Wallin 2009.) In the CEO’s story the value of the company was recognized by the existing network.

“The company was seen as a Finnish trademark, support was gained from many Finnish, also governmental, organizations... The e-mail address of the company having .fi in the end had a surprisingly important mental meaning” (CEO).

Those networks that were needed in order to create a successful virtual business were contacted and new connections were built.

“The best Finnish marketing company was selected. Design thinking workshops were held. We got so fond of it that we were able to create our project process scenario... We hired a coding company... Financial support was applied and gained... We have this Advisory board, which has given lot of advice and support to us...”

Figure 4. Leadership logics benefitting virtual knowledge intensive organization.
6.2 Channeling and scaling expertise - Organizational support systems benefitting virtual knowledge work in the narratives of virtual experts

Certain functional, communicational and structural aspects of organizational support systems in virtual knowledge work setting were highlighted in the narratives of the virtual experts. Most attention received functional and communicational aspects, namely skills management, task design and communication matters. Also performance monitoring, reward system, technology support and confidentiality issues were referred to.

6.2.1 Skills Management and Task Design

"Channeling expertise to where it creates the most value...and also make money with it. Finnish markets are so small that this type of one time consulting does not work: we will run out of people so quickly. So maybe we could somehow scale and duplicate it." (CEO)

Similarly to the CEO the expert felt that working and being involved in a virtual pay-for-performance consultancy company offers a convenient way to be able to handle large customer projects and utilize her knowledge and skills to different cases which in turn has resulted as increased contacts to other experts and business opportunities for her.

"The company provides a fantastic opportunity to be able to work with large network of experts with wide range of skills thus creating additional value that can be rapidly deployed to customers. The company allows me to comfortably handle bigger customer projects and also offer my own knowledge and skills to projects I could not do on my own. Thus it is significantly increasing my business opportunities." (Exp.)

In virtual knowledge intensive organization the success of the organization is dependent on the ability to recognize the skills of the experts involved and being able to utilize those skills by implementing appropriate procedures in form of purposeful task design. In short one must understand the resources at hand and how to apply and develop them. Following Jermol et al. (2003), Doan et al. (2011), Drouin et al.
(2010) and Wenger et al. (2000) (3.1.1 & 3.1.2) the narratives highlighted the need for skills management and task design.

**Skills management**

“The virtual group of experts is a bit vague to the customer, so the traditional feeling of being responsible to one another is difficult to create virtually, which would help the project to sally. Would a top facilitator help? ... Someone who would activate people and would share responsibilities and would explain everything in plain.” (CEO)

Similar to Doan et al. (2011) and Jermol et al. (2003) offering the possibility to adopt to different roles will serve two dimensional purpose; it will give the possibility to the experts to utilize their expertise in a more efficient way and it creates a clearer image to the customers about the talent and coherence about the company.

“This requires right kind of people as key engines on a global scale. Those who possess right contacts and networks, and are able to build virtual teams to solve particular requests received from the customers. For it (the company) to function like a ‘perbetaum mobile’ that independently cuckoos and functions and everything goes smoothly, and you here calculate incomes... I don’t believe in that.” (Inv.)

“These top experts should be deeply engaged. There could be this top expert x and he/she would have a mentoring group, let’s say 50 people from the field, and he/she would mentor them but as a virtual organization they could be physically anywhere. Then you would have to have this top fellow, let’s say Jerry Williams. It would not mean that Jerry would be involved in all projects but he would know all these other group members well enough. All members should be experienced enough or they should possess that kind competence that they would be able to carry out projects well. I think this is something you need in order to be believable.” (Inv.)

Also the CEO felt that having known experts and so called big thinkers as project members have had a positive influence on the project results and for that matter on
the customers. Highlighting certain characters on board the company was able to offer a suitable deal for its customers.

“We have an experienced guy running the project, so it is in good hands. He is great at making this type of interviews.” (CEO)

“There is a local expert, which seems to be a key factor in many cases. But in addition to that there are all these other experts that customers in a certain area have not met and exploited already. There is also a known professor involved in this project, like in many of our projects: there are these non-traditional consultants, big thinkers, who can offer their thoughts, but they are not there to sell their hours, like in traditional consultancy.” (CEO)

“Customer wanted our company because of a familiar leading person in the project and a talented team behind him. Company’s role as such was small.” (CEO)

“It’s about match making, and also about how to scale the talent in multiple ways.” (CEO)

For example project leaders should possess cognitive authority and expertise in leadership, in order to be able to approach the challenge at hand holistically and to make connections between cases, transfer appropriate knowledge and approach right partners. This type of approach supports individuals’ professional development, when they can utilize their abilities in a suitable way. Possessing certain roles also clarifies the task roles and responsibilities of all stakeholders and makes it easier to anticipate the work load and use of time. While asked about the roles from the expert, she was able to clearly state her role in all of the projects she had been involved.

This naturally requires an implemented system for recognizing the talent of different people: the level of their expertise as well as the way they are positioned in the networks of the field. This data should also be stored in a meaningful manner. (See 3.1.1 Jermol et al. (2003) knowledge mapping.)
Collecting background data of the experts seems controversial; on one hand it is crucial operation in relation to the functionalities of a virtual knowledge-intensive consultancy organization, while on the other hand it seems like a heavy administrative burden to the company. Promptly it was suggested that this task should be moved to the experts themselves. Incentives to update expert profiles should be implemented.

“It is a heavy structure if the administration of expert profiles would be centralized and (the company) would try to keep track of updating the information of the pool. It is impossible. Experts should take care of updating info themselves. They should be encouraged to do that. There should however be away to be able to check people’s backgrounds, just like in a recruitment process, to be able to make the decision if a person should be part of the network or not. Otherwise quality will suffer.” (Inv.)

Jermol et al. (2003) take the resource allocation and skills management to a one step further and connects the skills management to the idea of facilitating multiple virtual tasks that experts could possess if they were able to gain all information needed for being proactive and scaling the use of the a virtual platform. According to them in virtual business and organizational model every partner of virtual organization should also perform marketing and project management functions with broad scale of alternatives and at lower risk. This calls for easy access to a knowledge repository where information about knowledge resources, process costs and resource availability in the network are stored. All the partners in the value network should feel a need to compete for an opportunity to be chosen according to his skills to different projects that would support their professional development. Virtual organizations need to make sure that the competences and connections of all partners are being requested and stored. Jermol et al. (2003) for that matter speak for collaborative data mining and decision support methodology. The expert stated that she had even made the initial offer to the customer, while she was the project leader. Also the CEO considered this type of facilitation of experts and procedures as one of the core innovations of the entire process.

“Mostly the contacts to customers are done by us, but certain experts have sold and led projects by themselves, and just used the expert service and platform of the
company. Then we have thought that this could work like this in general. But the experts are not aware of these possibilities to have bigger roles and to earn more money like this. We should take this to them somehow. In addition to this if we could scale our projects to multiple sectors, we would be more interesting in the eyes of other investors.” (CEO)

**Task design**

“*It should be motivating cases with interesting customers, and that is what I want to believe. In the beginning we referred to “do it please because I have helped you for twenty years”... One global expert thought that it is interesting to work in a case of a Finnish stock listed company... I don’t think it is about the financial compensation, but at least everything must be transparent.”* (CEO)

To be able to facilitate the members of virtual knowledge network to become independent and proactive in utilizing of the platform, clarity and coherence of the procedures or alternatives of procedures should be provided. Clear task design methods support this idea. The need for orderliness and anticipation in the task design and procedures were stated in the narratives as well. If they are missing there might be danger of losing focus. Achieving needed efficiencies in dynamic process design of virtual organizing is demanding to which the CEO referred to while he talked about the challenges they have faced as an organization.

“*Because the first phase for the customer in our business model is free, it is sometimes difficult to transform that step into active, sold project. Another challenge is that when we were on a sales tour with John in the Eastern Europe and we met let’s say 20 customers, so if we would be there together or then that there would be a sales unit, would the work be more systematic per se? Would it? I am not sure if it is about people? If you are alone in a certain geographical area, there is only so much one can do. So is it up to single individuals or is it about something else?”* (CEO)

“*Virtual organization requires lot of self-discipline.”* (CEO)
“We have not learned to focus only on certain customers, although we know very well based on our theoretical knowledge and previous experiences that we should. We even tell our customers that all you need is to focus, focus and focus, but when you are in it yourself, it is not that easy. Our challenge is that we do so many things at the same time. We get so interested in it ourselves, even too excited, so it is difficult to say that here is the start and here we end this. Someone said it will take couple of years in business world before things crystallize.” (CEO)

Although virtual pay-for-performance employment relationship is loose compared to traditional work relationships, there is a clear demand for certain set objectives and process steps. Clarifying demands set for all members of the team helps to be able to deal with the demands of the project time wise and cognitively. The aim of set objective is more in directing the work process and engaging its members to it.

“Setting goals is extremely important. My experience of virtual organization comes from the parent company. I have done it there for several years with people around the world. The problem is that goals are understood differently among different people.” (CEO)

“Experts have required more strict process. I believe there is a possibility to take the process further. Like in Design Thinking which comes from the Stanford University, the brainstorming is narrowed to certain part of the process while we have it in one package.” (CEO)

Clarity and flexibility

Objectives set for the project should be clearly stated in advance (Doan et al. (2011); Kittur et al. (2013); Prasad et al. (2002); Key et al. (2011); Marjanowic et al. (2012); Pazos (2012); Jermol et al. (2003)). In addition the processes should be permeable in order to be able to compete with traditional engineering work.

“Also parts of a bigger project could be handled. Traditional engineering work takes time to change and old contacts are not replaced easily. This (virtual pay-for-performance) company could offer a solution to a subtask of the entire challenge that
other companies have not been able to solve... Customers who have doubts or want to avoid risks would have low threshold access to the service.” (Inv.)

Also Doan et al. (2011) and Kittur et al. (2013) suggest that complex problems can be divided into individual challenges that will be solved either in sequence or parallel, and enables more solvers to be involved. Then dependencies between subtasks should be managed and results should be assembled (Kittur et al. 2013). Again the role of a certain “facilitator” or project leader is being highlighted in order to be able to define the subtasks and dependencies between them. Especially, when the setup is compared to traditional consultancy.

“We have received feedback that we have created instant value for the customer instead of spending time on analyzing customer situation that she/he already knows, like in traditional consulting.” (CEO)

“The company provides a fantastic opportunity to be able to work with large network of experts with wide range of skills thus creating additional value that can be rapidly deployed to customers.” (Exp.)

While designing tasks in an international virtual organization the global aspect should be taken into consideration. The narratives called for global working methods.

“This should be so that if you have two experts A and B from the same field working on this at the same time, so that the next one would know where to continue when the previous one stops... Just like in a software house in which you have one knot in Helsinki, one in Oulu, one in Japan and one in San Francisco and where they would be coding around the clock... So the project management should be that kind of in this case as well.” (Inv.)

According to Key et al. (2011) task predictability can be increased by clarifying what is being communicated, why and what action should be taken and by whom, instead of just stating how one feels about a certain step. Feeling words are interpreted differently in different cultures and does not bring communication forward. This seem like a valid point as even the CEO commented the problem of setting goals in
relations to culturally different interpretations and leads one naturally to the critical topic of communication in virtual surroundings.

“Setting goals is extremely important... The problem is that goals are understood differently among different people.” (CEO)

![Figure 5. Functional processes of a virtual knowledge intensive organization.](image)

6.2.2 Communication

“Discussion and experience based problem solving method is proven to be way better for solving complicated problems instead of analyzing and conducting laboratory testing.” (CEO)

“There are all kinds of texts and things but personal communication, dialog, is the most important. Time is often too limited to for that. Will people learn to communicate virtually through social media? It must be like that because there is not enough time to have phone calls or visiting physically everyone.” (CEO)

Similarly, Joyce et al. (1997) state that personal relationships in a lateral organization design is more powerful than formal structures or reward systems. Virtual organizations enable lateral communication and broad participation compared to
traditional companies, which enhance equality in communication patterns. It takes place through transactional exchange and network relationships instead of hierarchy. This comes across clearly in the CEO’s narrative as well.

“When all stakeholders are around the same table, you cannot say dubious things like that. You just promote your own expertise, and if you are not good enough someone will see that. And in that kind of situation the self-criticism of an expert is that high that he/she will not exaggerate or falsify his/her capabilities in relation to a certain project. In that sense, the dialog on a virtual platform is even stronger compared to a dyadic sales situation.” (CEO)

Anonymity has been shown to increase the level of objectivity and constructive criticism and decrease emotional reactions of participants (Drouin et al. 2009). Also the expert felt that the most beneficial feature of working in a virtual pay-for-performance company is related to communication.

“Most beneficial is to be able to do information sharing (all documents and materials relating to projects), idea sharing and building up on ideas also virtually.” (Exp.)

However, also the most challenging feature in virtual project work was related to communication.

“Most challenging is to get some team members to share their views and ideas in the platform as old ways are preferred, like e-mails.” (Exp.)

Thus, some norms of communication must be set.

6.2.2.1 Norms of communication

One of the key factors defining the failure or success of a virtual community is in its members’ willingness to participate and share. This willingness is endangered for several reasons (see 4.3). In the narratives the expectations set by other stakeholders were considered as an obstacle for expressing one’s opinions.
“The platform conversations are stored, which partly limits the dialog. One feels they must be certain in their comments. If they feel that others might think that this person should know better than this, then that person will not comment anything about that.” (CEO)

“Some people may have some fears about sharing ideas, perhaps thinking ideas are not so good, and perhaps having some worries about how the info ideas you have given will be used, including the IPR rights.” (Exp.)

In Ardichivili’s, Page & Wentling (2003) study of a virtual community people were afraid to post due to the fear of losing face and fear to let colleagues down. People felt that they were in need of clear directions of what are acceptable postings. Also Key et al. (2011) demand standards for knowledge sharing, which take into consideration the fact that each member contributes significant amount of knowledge in some areas and less in others.

“Experts have asked how many hours they should spend on this. I have told them that we don’t care about that, just contribute where you have the expertise to do so. The expert should see that this is a better place to work then those where they count hours.” (CEO)

Figure 6. Communicational processes in a virtual knowledge intensive organization.
6.2.3 Performance monitoring and reward systems

In the narratives the discussion related to different indicators was presented together with topics related to performance monitoring and reward systems. If a performance monitoring systems were not yet in place, there were considerations to implement them.

“We do not measure the value of the comments in anyways at the moment or who contributes what at what phase. We will see later if it is a good thing.” (CEO)

“As a project leader how would I rate the other project members, which would give further information to others when they decide to utilize this network in their own deals.” (Inv.)

“So it (the system) would show positive feedback received from customers and even colleagues.” (CEO)

The performance monitoring and the reward system do not have to mean setting experts against each other but instead or at least additionally everyone should gain a feeling of being treated equally. It would also function as a great marketing tool for the customers.

“One the other hand selected segment and clear decision on how the money is being produced and shared... customers who have doubts or want to avoid risks would have low threshold access to the service.” (Inv.)

“We should clarify the benefits to the experts, so that they would understand better. There would be good stories to share: this person did this and that and earned this much money.” (CEO)

One should also remember the sharing of other than financial rewards in the case of virtual pay-for-performance companies (3.3.2). This was approached differently in the narratives.
“I don’t think it is about the financial compensation, but at least everything must be transparent. Everyone can have a feeling of receiving an equal share.” (CEO)

“Someone is been able to make money with this and create new business. Even some kind of a calculator, which would inform others how much billed work this expert has been able to create. That is the carrot why I as an expert would put my effort into this. A belief that someone will be in contact with me and say hey you are needed now in this and this type of a project. Big and latest projects done (should be shown)!” (Inv.)

The expert herself did not refer to the financial compensation as such, but she did refer to possibility to deploy her skills and knowledge and the new business opportunities.

“It allows me to ...offer my own knowledge and skills...It is significantly increasing my business opportunities”. (Exp.)

These statements support Jackson’s et al. (2006) view according to which the workers in a virtual setting are seen as driving the rate of work through their commitment to high performance and quality. Therefore procedures for administrative purposes (time, cost and progress management) have to be in place, but not as forms of control but rather as supportive functions that would bring operative transparency (Jackson et al. 2006).

Similar to Drouin, Bourgault & Gervais (2009) and Wenger & Snyder (2000) in order to be able to monitor performance certain criteria of quality should be set. This criteria and rewarding structure should be made visible to external partners as well.

“One successful customer case...quality criteria were met.” (CEO)

For recognizing different types of measures of value Wenger and Snyder (2000) suggest that companies should collect systematically success stories and publish them, which serve a double purpose: learning from peers and positive public image. This was expressed in the narratives as well.
“Not only stories but actual references, customer references. Must be solid, believable and trustworthy. There must be proven efficiency of results.” (Inv.)

“No bad resources during first years, only top success. Top quality, top tool, new company beneficial for the customer, customers will return. Quantity cannot be increased so quickly as a startup so that people would feel compelled to join because of that. One must create success stories by doing intensive project co-operation. That is how you bring new people in and are able to market the business through examples like this team A and B have received so many new members and they have all been able to create new business to their companies.” (Inv.)

Also the expert had joined the company by hearing about it from friend.

“I heard about the company from the company owners via a friend.” (Exp.)

6.2.4 Technology and confidentiality

Hardwick, Anderson and Cruickshank (2013) see networking for innovation as much technical as social. Much of the smoothness of virtual work flow and ultimately the successfulness of virtual organizations are related to the technical features of the platform.

“Requires a lot from the tool, the quality of information should be consistent, one single format that is being followed.” (Inv.) “The virtual platform should be so compelling that all companies would want to further develop the content the platform offers. Would make sure that experts want to join and update their profiles if a high profile company.” (Inv.)

“I think it takes some time to change your working habits, this kind of co-working method is quite a new thing. In the beginning it also takes extra effort to sign into different platform what you are used to but after short time of active use this is not an issue.” (Exp.)
The usability, reachability and safeness of the platform create the basis for all communication and information sharing and consequently the basis for leveraging learning and innovation among and across the users of the service. Also in the narratives of the interviewed the technical features of the platform were often related to the issues of confidentiality. Similar to Brabham (2008), Marjanowic et al. (2012) and Jackson (2006) the anonymity issues concerning experts or customers competitive intelligence should be retained.

“Technical solutions supporting confidentiality and customer loyalty...” (CEO)

“Perhaps they (experts) are having some worries about how the info and ideas you have given will be used, including IPR rights.” (Exp.)

Working in the platform can be trusted if topics of confidentiality are handled. For example utilization of the platform was prevented in otherwise successful case when the CEO’s company could not technically create an environment where all stakeholders could not see everyone’s documents and for this some partners wanted to communicate in other manners.

“There should be possibilities to select the information and contacts that are shown to everyone and some just to selected group of people...There should be possibilities to utilize the platform for own purposes and incentives to publish this knowledge to others, and possibilities to set limits to one’s availability and willingness to put effort in.” (Inv.)

The narratives follow the idea according to which credibility and expertise in virtual networking comes from the extent of involvement in the network, including the amount of participation, frequency, and the usefulness of the information provided (Dawley 2009). Therefore this causes a slight contradiction between the facts that experts should be encouraged to participate actively valuing at the same time their privacy by reflecting respect towards confidentiality issues.
A special technological tool referred to in the narrative was a filtering tool. On the basis a filtering tool the experts could be divided into geographical, professional and prize groups.

“Let’s say that I am now in Kuopio and I am looking for an expert team to my water treatment plant –project, so these experts should be indexed so that I am able to find those experts that are in the radius of 300km, and then those I can reach globally. And those who charge less than 1000€… So you should have different filters. Then someone could say I want to have a dream team and I am ready to pay, so then that person would get that one guy from India, another from Helsinki and that one expert from Stockholm. You could say to them you are the gurus in the field so you are able to do this. One could decide for themselves if they are building a Rolls Royce or something else. On the other hand some kind of filtering is needed for an individual company to find this service and being able to see how this functions.” (Inv.)

Also in the company of the CEO a filtering tool is in use for classifying the experts into certain professional sectors. According to the investor’s comment this filtering tool could however serve a threefold purpose: a usability tool for experts, a strategic tool for the management and a project and a reference tool for the customers.

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![Figure 7. Supportive structural factors in a virtual knowledge intensive organization.](image-url)
7 CONCLUSIONS

During the past decade traditional hierarchical organizations have been replaced by more permeable, flexible and even born-global virtual organizations. When physical presence and authority is missing from a lateral knowledge intensive organization one needs to balance between adequate amount of flexibility and autonomy given to the experts and structure guiding the work processes towards set organizational goals. Once the need for covert distant leadership is added to the picture, one understands the peculiarities defining virtual organizations and how they should be managed. For that matter, it has been recognized that also virtual organizations require specific type of organization form and leadership logic to be able to function. They need to find the right degree of centralization and for that carefully choose the right organizational design.

The main aim of this study was to gain further understanding about how to commit experts in a special virtual pay-for-performance business setting, which in traditional sense means a fairly loosely coupled organization and for that matter structure. In general, the factors defining the commitment level of the experts in a virtual setting are the leadership logic and the organizational support systems, which specifically take into account the establishment of virtual interaction and knowledge transfer. These factors should be supported by specific talent management practices focusing on committing the experts further more. These perspectives can be approached internally or externally, in other words from customer’s point of view or from expert’s point of view. Although there are naturally various overlapping elements, the focus in this study has been internal; approaching both theoretical and empirical data from the point of view of the experts. The connection of the leadership logic and the organizational structure to the commitment level of the experts is inevitable. A functioning global virtual organization requires up-to-date leadership logics and permeable organization structure, which together guarantee a competitive foundation and operations for a virtual pay-for-performance consultancy company to be found appealing and tempting in the eyes of top experts. To understand these relationships further a review of the main findings of the study are represented in this chapter.
7.1 Main findings of the study

Virtual organizations are to be managed different from traditional organizations; however they also need certain degree of centralization and structure. Based on the main findings of the research one is able to build a coherent story of the meanings related to virtual organizing among global top experts. In order to answer to the main research question of how to commit and increase the activity level of global virtual experts in a loosely coupled work relationship, one must reflect on the two sub questions first: what kind of 1) organizational support systems and 2) leadership logics benefit virtual knowledge work? As mentioned, the structural dimensions of a traditional organization are formalization, specialization, hierarchy of authority and centralization (Pugh et al. 1968; Daft 2012), which in virtual knowledge work setting can be supported by non-traditional leadership logic and relationship and interaction focused organizational systems. Yet, all the different dimensions should exist however emphasizing virtual relations and functions.

When Leadership logic and philosophy favoring virtual interactions and knowledge transfer are in place, it creates a basis for building a functional organizational processes and supporting structures. The focus of the functions will be where it should be. Leadership logic beneficial for virtual knowledge intensive companies in pay-for-performance setting highlights the attitude of breaking away from traditional leadership and management logics by approaching it both holistically and from the point of view of complexity management. Holistic approach in this context means understanding that the company is part of a larger network in which all parts are at some level intertwining. Also utilizing the existing and creating new networks is part of the dynamism of this holistic approach. Additionally the company should make sure they clarify the need for their services to all stakeholder of the network. Complexity management for that matter is needed for self-organizing units like virtual organizations. It takes into consideration the complexity and competitiveness of the environment and will not be overwhelmed by that. As such, leadership in virtual setting should focus on relational processes such as trust and coherence formation, which is a key defining factor of the communicational process in virtual interaction and in creating confidentiality among the experts as well as customers. Running a global virtual pay-for-performance company requires clear vision,
motivation and goals set, which in the changing environment gives direction of
where to go.

Virtual organizations need to focus on certain processes and to certain structural
factors in order to function without the traditional hierarchical **organization
structure**. These processes and structural factors define the smoothness of the
usability of the virtual platform from all stakeholders point of view. These processes
and structural factors also replace the visible authority that controls the operations in
a traditional company and guarantees active interaction and change of knowledge.
Organizational structure beneficial for global virtual knowledge-intensive companies
should emphasize certain functional and communicational processes, which are
supported by specific structural factors. There is a clear need for a facilitator, who
functions as a catalyst both in activating the task procedures at hand as well as
monitoring the communicational processes and norms of communication. The
functional processes were highlighted strongly both in the theoretical and in the
empirical data of this study. It was one of the most crucial features, which stood out
from the entire data. More specifically, large part of the total data was related to
skills management and task design.

**Skills management** in virtual pay-for-performance setting refers to **recognizing**
the skills of experts and **storing** them. The company should deploy knowledge mapping
methods and develop filters to ease down the administrative burden of updating the
information experts provide. Also incentives should be set for experts in order to
make sure they will update and classify the information about them. The skills of the
experts should also be appropriately **applied** both at organizational and at project
level. At projects level, based on the given data it was clear that especially the role of
a project facilitator was crucial. A facilitator was referred to as someone who
facilitates global mentoring groups, or as a local representative or a known person,
who has a beneficial reputation from the customers’ point of view.

At the organizational level, it was evident that the skills of experts should be made
visible so that task specific teams could be assembled and that it would increase
positively the profile of the company in the eyes of the customer. The skills
management refers also to the way the skills of the experts are **developed**. One way
to scale the alternatives the experts have in this type of networks is to make all the different possibilities they have as transparent and visible as possible. Both the theoretical and the empirical data spoke for making the success stories as visible as possible, while they function as promotion tools both for experts but also for customers.

**The task design** aspect for that matter emphasized dynamic and anticipated process steps and goals, which were seen as helping to stay focused. The task or project at hand also requires a facilitator who is able to state what, why and by whom. If a project can be divided into separate tasks, it was recommended that this type of flexibility in project design should be implemented. This favors the idea of sub tasking the project as well. By implementing task design perspectives it is easier to map out the demands of the project both time wise and cognitively. By implementing skills management features the awareness of the possibilities the service provides can be increased. It will give the possibility to the experts to utilize their expertise in a more efficient way; it creates a clearer image to the customers about the talent at hand and coherence about the company.

**Communication** and the flow of it is the main substance in a virtual company. In addition to the layout of the platform it is all that is visibly there. For that reason it is not a surprise that communicational processes were highlighted in the data. Communication beneficial in a virtual setting required norms; standards for knowledge sharing were needed. It should be clearly expresses what is appropriate communication or level of contribution and what is not. This would help experts to adjust to the rather new way of communicating with others and decrease the fear of losing face or ridiculing oneself. Also the level of trust would increase when experts would feel free to communicate also ideas that they are not 100% sure of. Again it would be natural to implement this through a facilitator who would express the need for active communication and make sure that the information given would be used only in the particular project as such (confidentiality).

Both the functional and the communicational processes can be supported by certain **structural factors**: performance monitoring and reward, and technology support systems. The performance monitoring and rewards can be concluded to the need of
operative transparency, which includes transparency of project results and collecting feedback from projects. Certain quality criteria should also be set and made transparent. The need for collecting and publishing success stories has been made clear in various settings. The technology support system related mostly to the usability of the platform as well as to the confidentiality aspect. The expert should be guaranteed that the information they are sharing will not be used to other purposes or against them. Additionally, the experts (and the customers) should be able to restrict the way information related to them will be used. Also other developed filtering tools were requested for multiple reasons (6.2.4). Virtual organizations should find a balance between routinizing and personalizing communication on its platforms and be able to produce rich but efficient interaction.

**Talent management practices** beneficial for committing experts in global virtual knowledge-intensive organizations based on theoretical and empirical data relate strongly to both to leadership logic and organizational support systems. However, based on the theoretical data especially, there are certain focus areas, which should be taken into consideration while accelerating the level of commitment among virtual experts. For talent management to occur in the first place one should be able to recognize and store the talent of the experts and to be able to utilize it, which is all about implementing knowledge management practices in a virtual company. Committing experts requires for example stating clear benefits and success stories that follow from being part of the expert network. Different methods for giving recognition and creating a positive user experience have been suggested in chapter 4. One should also implement clear norms of communication in order to increase the knowledge sharing activity. Talent management practices are also related to structural factors when it comes to persuasive system design. Technological features of the platform serve as a tool for both data storing and handling but also for committing the user. Virtual organizations should study the psychological needs and interests their users possess in order to make them furthermore attracted to the virtual environment. The technological aspects together with the norms of communication facilitate cooperation among the experts, namely virtual pay-for-performance businesses should aim at creating an organizational setting in which fruitful collaboration between experts will take place. Additionally, if partners in a virtual knowledge-intensive network are to form long term successful collaboration, they
should be aware of non-technological issues like trust building and choosing appropriate forms of partnership. This takes one back to the leadership logics and the need for creating coherence to the virtual network and collaboration.

Figure 8. Committing and increasing the activity level of global virtual experts in a loosely coupled work relationships.

7.2 Implications for research and practice

This multidisciplinary research shows how academic research in many cases should not be restricted to a certain field, but phenomena should be approached more holistically especially in dynamic and competitive fields. The study showed how even virtual organizations require structure and support systems in order to function. A clear difference should be made between structure and control: when certain supportive structures are in place members of an organization can autonomously function inside the system without hazarding the functionality of it. The study
pointed out that even though virtual organizations require structure and leadership, certain aspects should be especially highlighted in virtual knowledge-intensive context. Many studies have been made about organization forms, virtual teams and leadership, but not too many combine these intertwining facets together, although they do not function without each other. Based on the research one should also understand that appropriate organization structure and leadership support the level of commitment of expert generally in any setting.

Hopefully also the methodological approach of this study creates even stronger position of narrative research in the academic business studies for its apt suitability both as a managerial tool and as a research method. Giving people the chance to narrate will serve a two dimensional purpose; it helps the narrator to reflect on the meaningful causation relationships and to give meanings to the research phenomenon at hand.

On a managerial level the study offers focus on how to orchestrate a virtual pay-for-performance company especially from the internal point of view. By implementing organizational supportive systems and holistic leadership logics one is able to build a sustainable and committed expert network, in which sharing and utilizing knowledge and creating new innovations is inevitable. Most facets of the findings are applicable in any virtual setting and why not in traditional more hierarchical organizations as well. Any organization should try to find processes and structural factors, which support the autonomy of its employees, in order to make them committed to their work but at the same time offer structure, support and guidance especially in those areas that there is a need either by the employee or by the customers and other stakeholders.

7.3 Reliability and validity of the study

One of the most important virtues in academic research is seeking the truth (Erkkilä 2005). Qualitative research has its value in creating a deeper and richer understanding of a certain phenomenon in a specific context. It rarely has any value from the point of view of generalizing the research results; the informants often represent only one homogenous group from similar geographical area. The
generalization aspect in qualitative research is however present in the way people can assimilate to the research topics, because the information presented in the research represents individuals’ experiences and the meanings they have given to them in that specific cultural context they are in. (Elliot 2005.) Also the researcher should see herself as a narrator as well; narrative research is all about making interpretations of narrators’ interpretations. Due to which the researcher is also constrained and enabled by certain cultural, historical and disciplinary circumstances and is directing the study for a certain audience. (See Chase 2005.)

In this study the narrators did present same geographical area and mostly the same field of business; however they represented different roles in relation to the topic. This made it possible to create a rather extensive interpretation of the meanings these people in different roles gave to the phenomenon at hand and to integrate those meanings into one story; story of how to commit experts in global virtual knowledge-intensive organizations.

Reliability in narrative research refers often to the reliability of the data and validity in turn to the strengths of the analysis and how justified it is. The meaning of narrative research is being highlighted in the meaningfulness of its results. However, narrative research results cannot be understood as the complete truth, if truth refers to how things actually happened in reality. A research, which tries to understand meanings, aims rather at probabilities or results that embody reality. (Polkinghorne 1988.) The researcher must consider if the produced research data is believable and valid description of reality (Elliot 2005). Also Bruner thinks that the reliability of a narrative research should be evaluated based on its apparent truthfulness (verisimilitude) and the universality of the themes (fabula) presented in it (Heikkinen 2001). Similarly, according to Gabriel & Griffiths (2004), the interpretation of parts should be consistent with the interpretation of the whole. The truth of a story cannot be in its accuracy but instead in its meaning. (Gabriel & Griffiths 2004.)

Although certain level of subjectivity and relativity is being recognized and accepted in narrative research, it is important to seek the truth in the research process. For that reason a detailed and extensive description of the journey of the research and the information given by the narrators should be provided, which increases the reliability
of the entire research. (Polkinghorne 1988; Erkkilä 2005.) Also in this study the researcher has described the way the research was being carried out and clarified the decisions and interpretations made. Clandinin and Connelly (2000) state that the wakefulness and thoughtfulness of the researcher, which are one of the most important criteria measuring the reliability of the research, can be implemented by justifying the decisions made. This is especially important because narrative research practices are applicable and versatile.

Based on the experiences and meanings of different individuals they have given to the phenomenon of virtual organizing, one is able create an interpretation of the phenomenon together with the theoretical data. It is possible to reach the phenomenon of virtual organizing through narrative and interpretative research practices. Narratives are even used as leadership tools which are exploited uninhibitedly (Czarniawska 2004). One can approach the phenomenon of virtual organizing from various points of views and there is no one truth about it. However, the themes that became apparent both from the theoretical and empirical data, are universal and something that can be related to. Themes that were repeating in the data about virtual organizing in knowledge-intensive setting related to both to the way the organization is structured and to the way it is being orchestrated, which correlate strongly to the way experts in this type of setting could be solider commit. However, individuals and communities are different, which means that people react to for example virtual communication practices in various ways depending on their cultural context and personal traits. The point of the study is to offer diverse and new approaches to virtual organizing and to how to commit experts, through the interpretation of the researcher and the narrators involved in the study.

Narrating always takes place in relation to others, which is why people tend to give as positive impression as possible, which is why the researcher might not be able to reach the narrator and his/her actual interpretations. In this research setting, fortunately the topic of the study was not so personal or controversial that the narrators would have a reason to embellish their stories. Also the fact that the narrators were told about their anonymity already in the beginning of the research process helped them in being honest. Additionally, Saarinen and Lonka (2000) talk about the paradox of data collection according to which, we select and receive only
the kind of information, which will strengthen our earlier conceptions. Naturally, when the researcher tries to be able to handle and balance with large amounts of data the paradox of data collection is possible. However, in this study the stories were read several times and the context of the parts of the story was checked again and again so that the interpretation of the researcher would be as objective as possible.

7.4 Limitations of the study

One can always question whether the conducted research is able to answer to the presented research questions following valid and prompt research design and methods. In order to follow appropriate research practices, all decision made should be clearly stated and justified. Due to the holistic theoretical approach of this study it has been challenging to be able narrow down the theoretical research data and the selection of sources. It is questionable if all literature data is needed or if something could have been left out. However, virtual pay-for-performance business models are fairly new, and for that it is important to let the reader know more about the framework of the business model and the possible alternatives one can approach this kind of topic.

The validity of the study is questionable due to similar issues, namely the amount and quality of selected literate sources. Following the constructivist approach, it is impossible for a researcher to be completely objective as knowledge is seen as a result of social interaction and for that reason is very much context specific and shaped by our earlier experiences. The points of views presented can be interpreted from various points’ views and one could end up to various different conclusions. Nevertheless, this fact has been kept in mind throughout the research process by approaching the phenomenon as holistically as possible. Also the vastness of the theoretical data gives rather firm support to the themes presented in the empirical data and creates consistency throughout the research, albeit there is no one single truth but many (Erkkilä 2005).
7.5 Suggestions for further research

The topic of how to increase the commitment level of experts in virtual settings would be interesting to study further from the user persuasive system point of view in a multidisciplinary setting. It often turned out that the theoretical approach to this topic was presented from the point of view of a single field, albeit the topic relates as much to psychology as to sociological change and technological possibilities. It would also be interesting to study whether the age of the experts and certain personal traits define their level of activity and commitment in virtual team work. A fascinating approach would also be to follow the time aspect in virtual work, and if experience in virtual projects would increase the level of commitment and especially activity in the long run and what is the critical turning point in the process of adjusting oneself to this type of working methods. The research results of this study highlighted the task design and norms of communication, which would be beneficial to study further focusing purely on these aspects and testing different scenarios also in practice. Also a comparative study between different cultural regions would also give more information about the variety of needs for virtual leadership and organizational support systems in different countries.
REFERENCES


Appendix 1: Interview questions

To the CEO

1. What is the story of the company? How did you come to this present moment?
2. What has been the most challenging part of the process this far from the point of view of a virtual organization?
3. What is the most important factor in managing a virtual organization?
4. Could you describe a truly successful customer case?
5. What is the core motivation for the experts to join virtual pay-for-performance projects?

To the Investor

1. What is the most important factor in managing a virtual organization?
2. What is the core motivation for the experts to join virtual pay-for-performance projects?

To the Expert

1. How and why did you get involved with a virtual pay-for-performance company?
2. Could you please describe the projects you have been involved in? How would you describe your role in them?
3. What is the most challenging/beneficial feature in working virtually like this?