Applying Communities of Practices for Know-how Management- Case Study

Laura Keränen

Master's Thesis
Degree Programme in
Information Systems Management
2016

Abstract

Date

Author(s)
Laura Keränen

Degree programme
Information Systems Management, Master's Degree

Thesis title	**Number of pages and appendix pages**
Applying Communities of Practices for Know-how Management-Case Study	**66**

The objective of this study is to investigate how Community of Practice –concept is functioning in practice and what are the biggest challenges in this area. The research questions are

- Is the Communities of Practice -concept feasible way for know-how management?
- What are the biggest pains in applying CoP in the case company?
- What are the best pain relievers in applying CoP in the case company?

This research will provide answers to these questions.

The strategy for this research is case study and it has some characteristics of action research. Data for this study is collected using a questionnaire and unstructured interviews. Data is analysed mostly using qualitative methods.

The result of this study is that for the case company CoP –concept is a feasible way for know-how management, but the implementation in the case company limps. Three (3) root causes were identified

- obscurity of the deployment of the concept
- lack of strategic guidance
- confusion about involvement and membership

The target of the CoPs need to be defined more clearly and employees need to understand their roles and responsibilities in the concept. Now the concept lies too heavily on self-organizing, CoPs need to have strategic guidance, clear link to company's core competencies and vision for future.

Keywords
Know-how management, Communities of Practice, Learning organization

Table of contents

Index of Figures

1 Introduction

How to keep up to pace with constant change? New technological capabilities creating new business possibilities arise all the time. How to conduct business as normal and at the same time develop capabilities and know-how for tomorrows business? This is the key question this study is about.

The case company is a finnish digital business service company. The company offers consulting services as well as IT project deliveries to finnish companies, referred from now on as customer companies, in digitalized business. The business is constantly evolving, so it is very important to keep up with the change. The company mission is to be customers travel guide in digitalized world. It means that the company wants to understand and know the digitalized capabilities as those are now, but also be able to lead the way towards new possibilities.

As travel guides in tourism business need to be able to answer questions regarding to the destination, help customers in all kinds of situations but also open up possibilities to things and places that the customers don’t even know exists, the same way the case company wants to be the guide to its customers in their journey in digitalized business.

Professional services are very knowledge intense business. There are no concrete products, know-how is the core product. As in traditional travel agency business it is possible to assist customers by having only read books and brochures about the destination, but is that enough? I would say that the real assistance comes from experiencing the destination; feeling, touching, smelling internalizing the place. Knowing that the best time to visit certain beach is to go there early in the morning when the sun is arising, have a cup of coffee not in the cafeteria next to the beach but in the cafeteria which is behind it, the one that doesn’t look like as fancy as, but which servers the best coffee with the best service. That you should definitely ask for their home-made chocolate cake because that is something totally different than chocolate cakes every-where else. Also the experienced travel guide can advise where not to go, that the market area mentioned in travel books is overcrowded and over-prized, but if you walk 10min to certain direction, you find a market area which locals use which have special atmosphere, reasonable prizes and local products. And of course, the experienced travel guide need to understand which customers appreciate what, all customers don’t want the same thing, they have different expectations from their trip: some want to have a trip in a worlds metropole when some wants to go somewhere where the sun is guaranteed to shine. And even with the same destination some look forward in relaxing on the pool side when some want to explore the destination as its full. Some may have visited the destination before and now want to see something different, some may have physical restrictions e.g. to walk longer distances where others want to exceed oneself. There are no one-size fits all when it comes to having a journey. And of course there are restrictions besides the personal needs and expectations; e.g. budget and time. A good travel agency must be able to take all circumstances into account when planning the journey. And during the journey things may change, good travel guides must know when to change the original plans and on what cost.

Exactly the same analogy comes with professional services. The company providing professional services needs to be able to guide customer company throughout the journey, from the moment the customer company realizes it may need something to the moment that something is successfully done. Some customer companies already know where they want to head, e.g. have an online store where their goods can be sold, some have realized that something needs to be done to enhance the business, but are not sure what and how. In both cases the travel agency needs to understand the playing field, expectations, requirements and restrictions, and be able to advise what should be done: in some cases, building the online store is enough, in some cases, experts may realize that it is not actually the online store the company needs, it is enhanced integration between existing systems that is the key to the problem.

In digital service business, having professional services is not enough: understanding what needs to be done, is only the starting point. The real business is to be able to build the needed IT system. That requires many kind of specialized expertise from coders to UI-design and from architects to experts for special software. This has an analogy for building houses: after end-user’s requirements and restrictions are clear (=the professional services) the house need to be build. Architect designs the house, builders build the house, but still lots of specialized expertise is needed: e.g. plumbers and electricians. And depending on the needs there may be a need for interior design, gardener etc. Each house is its own project although it has similar building blocks as any other house building project. Same thing with building IT systems, all are somewhat unique although every solution has similarities. And what comes to developing IT system, the landscape is evolving in such a speed that what is best practice in today’s project, may need to be altered on the next project.

Key requirements in case company know-how management development

- know the current ecosystem
- understand the near future possibilities
- be aware of future possibilities
- praise different kind of expertise
- utilize know-how gained in various projects

In addition to above mentioned circumstances, there is still one fact that has a major significance in case company's business. The case company has grown tremendously in past few years. The growth has been both in revenue and in amount of personnel. At the end of year 2011 company had 189 employees when the figure at end of year 2015 was 359. Rapid growth in a knowledge intense business has its challenge. How to keep up to pace with constant change and same time familiarize new comers on the subject?

Nature of the business and growth in personnel has urged the company to focus in its know-how management and implement changes on this area. One investment on this area was released in September 2015 when concept of Communities of Practice (CoP) were introduced.

The CoP –concept embodies two main areas

- Community of Practice as a know-how development unit
- Self-organizing as a responsibility of know-how development

Main principle in CoP –concept is that anyone can establish a CoP. There are requirements that a CoP must fulfil, these are discussed later in this study, but the basic idea is that CoPs are set up by employees, not by company management. It is seen that the employees are the ones who understand the market and its trends, so it should be the employees who lead the know-how development. The role of management is to support the development, not to give orders what to do.

Another fundamental change was, that everyone is self-responsible of his/her own know-how development. Before September 2015 it was team leader's responsibility to manage know-how development of his/her subordinates. So in addition to have the entitlement to set up a CoP, anyone can freely choose and join any CoP he/she finds fruitful.

In the time when this study was started, CoP -concept have been in use for six (6) months. This study aims to seek answers whether the CoP-concept is an applicable way for know-how management and how it could be reinforced and developed further.

1.1 Objectives of the research

The objective of this study is to investigate how the CoP –concept is functioning in practice and what are the biggest challenges in this area. Know-how management practices are under transformation since the company is growing extremely fast, and CoP –concept was the first change towards self-organizing practices. It is important to comprehend that when talking about the CoP-concept, it in this case embodies two areas: The CoP itself but also the self-organizing part. This study will offer viewpoints to both areas.

Theories of related topics will be studied. Theory from Community of Practice will be as the main source but the study touches subjects also from knowledge management, competence management, innovation management as well as learning theories. Holacracy, a system for organizational governance will be described while it gives insight towards self-organizing practices.

The aim for this thesis is to figure out whether the introduced CoP –concept is feasible way of managing know-how development and if so, how the concept can be reinforced. The target of this work is to create recommendations for case company's management to reinforce know-how management practices.

The research questions of the study are:

- Is the Communities of Practice -concept feasible way for know-how development management?
- What are the biggest pains in applying CoP in the case company?
- What are the best pain relievers in applying CoP in the case company?

2 Case company

The case company is Solita. Within the case company, one department, the Analytics Solutions department, has been selected as the key focus area for this study. First I will introduce the whole case company and then describe the case department in more detail.

Solita is a Finnish digital business services company, which aim is to help its customers to succeed and create new businesses and services in digitalized world.

Visio
Kaikki mikä voi, digitalisoituu

Missio
Solita toimii asiakkaiden digitalisoituvan maailman matkaoppaana

Arvot
Välittäminen, rentous, intohimo, rohkeus

Figure 1, Solita vision, mission, values

Same in English:
Vision: Everything that can, will be digitalized
Mission: Solita acts as a travel guide for its customers in digitalized world
Values: Care, easiness, passion, courage

The competitive edge for Solita has been identified with three corner stones

- Customer oriented solution design
- Customer and industry know-how as a base for partnership
- Ability to offer holistic solutions for digitalized business and be a travel guide for digitalized word

Customer oriented solution design refers to ability to generate solutions for customer needs flexible and reliable. That requires technology know-how, skilled employees and use of best-of-breed technology.

Customer and industry know-how as a base for partnership refers to best understanding on customer organizations requirements and goals for selected customers on private and public sector.

Ability to offer holistic solutions for digitalized business and be a travel guide for digitalized word refers to unique ability to act as a visionary guide to gain competitive edge on new business areas.

In a nutshell Solita can be introduced using following numbers.

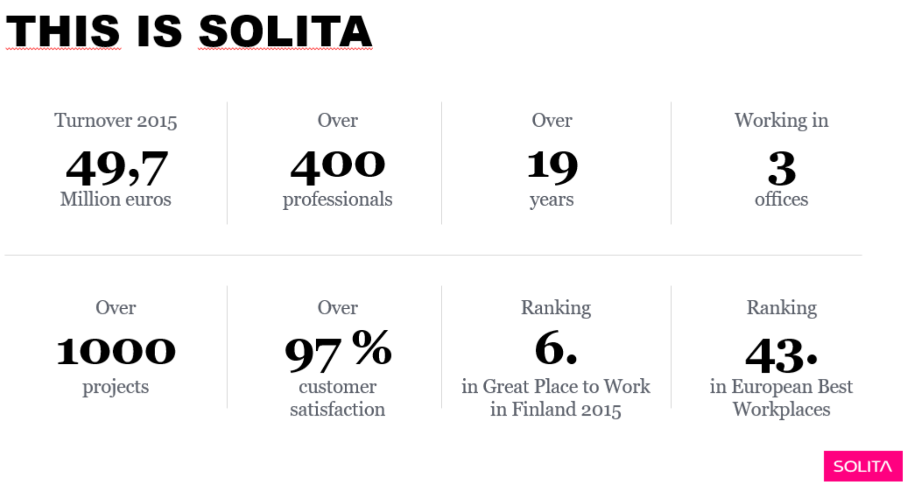

Figure 2, This is Solita 2015

Solita is founded 1996 as a software development partner for Nokia. In the early 2000s, Solita expanded its expertise in analytics solutions covering business intelligence and information management (Solita, 2016) and ever since Solita is concentrated more and more towards digitalized services.

Solita is a joint-stock company where Vaaka Partners Buyout Fund II Ky is the biggest owner having ~72 % of the stock. Rest of the stock is owned by Solita management board and key personnel.

In past five (5) years, Solita has growth in terms of personnel, volume and profitability.

Key figures	2015	2014	2013	2012	2011	2010
Personnel						
Personnel (avg)	359	278	224	208	185	168
Personnel (31.12.)	292	308	236	213	192	173
Personnel growth %	22%	19%	7%	11%	9%	
Volume						
Revenue (million €)	49,7	36,7	30,5	27,1	21,3	17,3
Revenue change %	35,1 %	20,6 %	12,7 %	26,7 %	23,0 %	28,6 %
Revenue/person (avg)	133 486	132 354	136 189	130 082	115 394	103 348
Profitability						
Profit, EBIT (million €)	4,7	3,1	3,3	2,6	2,0	1,4
Profit %	9,4 %	8,5 %	10,9 %	9,7 %	9,5 %	8,3 %

Figure 3, Solita key figures

Solita has three (3) offices, which are located in Helsinki, Tampere and Oulu, where Tampere is the headquarters.

In March 2016 there were altogether 250 projects ongoing. Projects are conducted to all kinds of customers having various kinds of needs, using various kind of technology.

Organizationally Solita is a matrix organization which is divided into two (2) units: business activity, and culture and know-how. Business units are divided into business areas, and culture and know-how into different teams. Altogether there are 22 teams (march 2016)

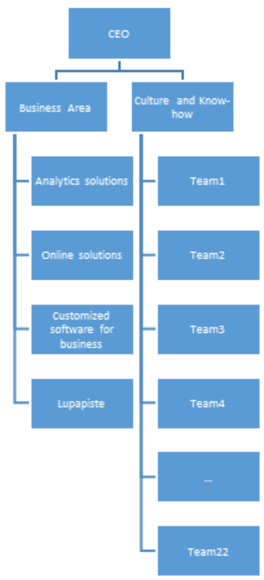

Figure 4, Solita high level organization

There are altogether 4 business areas: Analytics Solutions, Online Solutions, Customized Software for Business and Lupapiste. Business Areas are responsible for developing business within its area: e.g. managing customer relationships, responding to request for proposals and resourcing employees for projects.

Culture and Know-how division act as a production unit, basically all employees conducting customer projects are located in culture and know-how division. The division is divided further into teams. Teams are established based on know-how of its members; meaning members within one team share at least in some extent the same know-how. Members of a team are located in different locations (Tampere, Helsinki and/or Oulu) Average size for a team is 15 – 20 employees. Teams are mainly for administrative purpose, the team leader act as superior for his/her team members.

2.1 Case department

The focus in this study is the Analytics department in Solita. Analytics department was chosen as it is the department I personally work but also because it is an area that has evolved a lot past few years: Analytics department has grown both in terms of amount of personnel and revenue. Growth of amount in personnel has engendered changes in organizing teams which has had effects in know-how management practices.

Analytics department consist of five (5) different teams conducting work for Analytics Solutions Business Area. Teams consist of around 100 employees working in all three Solita locations: Helsinki, Tampere and Oulu.

Analytics department concentrates on following areas

- Data Warehousing
- Business Intelligence
- Big Data
- Master Data Management
- Business planning
- Predictive Analytics
- Data Science

Specific for these areas are that those are constantly evolving. New technologies are introduced which create new possibilities for digitalized services. Also existing technological capabilities are evolving and what was best practice yesterday, may be altered tomorrow.

Specific for Analytics department business is that work is mainly project based. Projects are conducted for customer companies to serve directly them and/or customer companies customers. Projects can be located in customer company premises, in case company premises or in parallel. Project teams are established based on needs and requirements from the project and availability of the employees possessing needed skills and know-how. One employee can work in one or many projects simultaneously. Project teams exist the duration of the project, although members of the project team may change during the project. Duration of projects may vary from short-term (weeks) to long-term (years), and there are also projects that are more like service type of assignments lasting indefinitely. Also the time allocation for one person for one project may vary, some members may work full time (100%) in one projects where other member may have relatively small allocation, e.g. 10% of his/her time. The size of a project team may vary from 2 persons to 20+ persons.

So it can be introduced, that business of the Analytics department is fully dependent on its employees who are frequently on the move between projects, and between customers. In such a business collaboration and know-how management practises are an essential part of the business to avoid know-how gained in the projects to remain only inside the project.

2.2 Know-how management in the case company

The four cornerstones in Solita operations are to

- Sell: actively seek work.
- Deliver: to gain value to Solita’s customer and to Solita’s customer customers.
- Grow: recruit and acquaint new comers.
- Renew: enhance above mentioned three sectors to become even better in those.

Renewing is about know-how management, which is about managing knowledge and competences, but also managing innovation and creativity. Renewal is seen as the R&D in the company. While the company does not have its own concrete products to offer, knowledge and skills how to utilize the knowledge to create value for its customers is company’s core product. Employees use their knowledge and skills to build solutions and services for customer companies. Like companies manufacturing products need to invest in their research and development (R&D), to be able to stay on business, the case company needs to invest in its R&D: managing and developing its know-how to justify its existence now and in the future.

To strengthen Solita's capabilities in renewal the concept of Communities of Practice (CoP) were introduced. The target for CoPs in Solita is to develop the know-how and operations in order to faster produce value for its customers.

The reason for taken CoP -concept into use is that it is seen Lean -way to develop know-how management. CoPs are established based on employee's insight for improvement, the experts who do the real work are the ones who should be improving the practices. CoP -concept is about improving issues which create maximum proven value for end customer. It is also about creating an environment where experimenting is allowed, when one has an idea for development, it is desirable to experiment the idea, if it is something that creates value, excellent, but if it is not, that is worth of knowing as well.

Goals for communities of practices are to increase and praise

- Scalability: opportunity to scale without increasing bureaucracy and corporative structures
- Agility: possibility to shape Solita know-how more towards customer needs
- Individuality: increase opportunities to enhance individual knowledge
- Simplicity: Simplify ways of working to enable versatile means to develop know-how

(Solita Intranet, 7.5.2016)

2.2.1 Background

Before establishment of CoP -concept know-how management was conducted via know-how area teams. Each employee was assigned to a team based on his/her area of expertise. The leader of the team was responsible of the know-how development for the team. Teams had team meetings on a regular basis were know-how was shared through status checks, open discussions, presentations from ongoing/finished projects, technology insights etc.

Weakness of team based know-how management was that the knowledge was shared only inside the team. The reality is however that people have different kind of areas of expertise and it is impossible to form teams that holds all members that possess the same area of expertise. In real life team boundaries are quite indeterminate, team members share some area(s) of expertise but equally may share other areas of expertise with members of other team or even several teams. So know-how management based on team structures created silos while know-how shared in team meetings were inaccessible to members of other teams.

Another factor that caused difficulties with team based know-how management was the fact that in recent years the department has grown exponentially. In year 2014 there were only two (2) teams in the Analytics department, one consisting of employees located in Tampere and another consisting of employees working in Helsinki. Amount of personnel was around ~20 employees. In March 2016 there are five (5) teams and the amount of personnel is around 100 employees. All teams consist of employees located both in Tampere and Helsinki. In addition to these there are few employees working from Oulu office.

Previously know-how could be easily shared in day-to-day business through informal personal networks, and in team meetings. Everyone knew everyone in Analytics department, so it was easy to ask and share best practises. When the size of the department grew personal networks were no longer applicable method for sharing know-how, e.g. for new employees it was time consuming if not impossible to seek information without more formal networks.

The growth of the department also caused challenges in managing teams. The amount of members within one team were growing which created urge to split the teams. And when the know-how management was on team leader's responsibility and know-how sharing activities were conducted mainly in team meetings, it was seen inevitable to change the know-how management processes.

2.2.2 The Baseline

A fundamental change in know-how management practises was released in September 2015 when Communities of Practice (CoP) –concept was introduced and the responsibility of know-how management was shifted from team leaders to employees themselves.

In practice the change meant that employees still belong to a team, but the nature of a team is more administrative than operational. Know-how development will be fostered through CoPs and every employee has the responsibility and also obligation to use 15 work days on her/his know-how management activities. The activity can be freely chosen as long as it is beneficial for customers, Solita, colleague and person him/herself.

3 Research methodology

Used theoretical frameworks and research methodologies are discussed in this chapter.

The research onion was introduced by Mark Saunders in 2007. It describes the stages what needs to be thought and planned when new research is started. Different layers offer alternatives and descriptions of approaches.

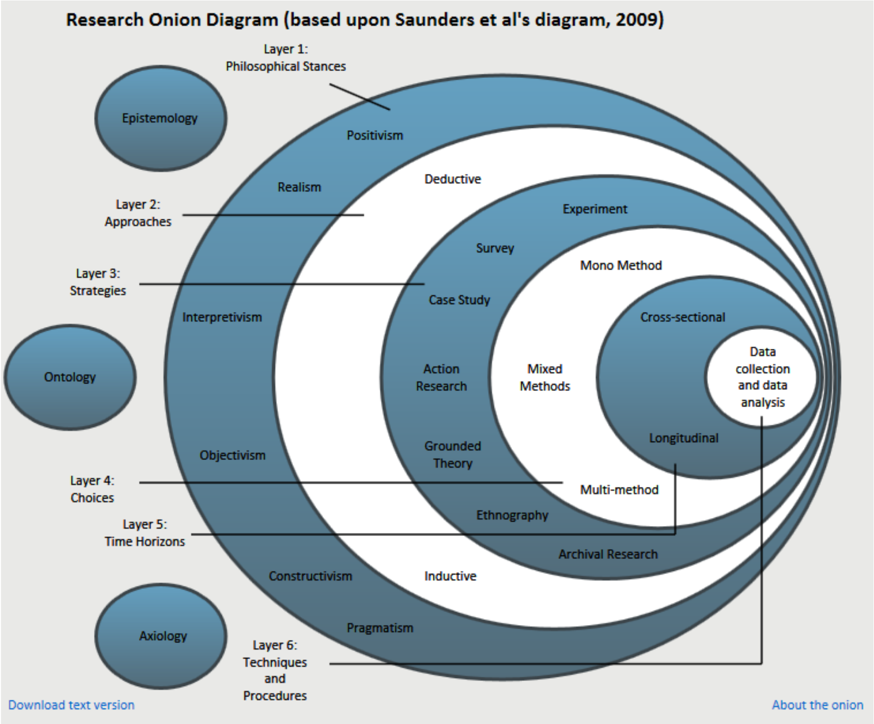

Figure 5, Research onion diagram, (Saunders, 2007).

Research philosophy of this thesis is based on pragmatism and interpretivism. I work in the case company and therefore be a part of what is being researched. It also has been argued that interpretivist perspective is highly appropriate in the case on business and management research, particularly in such fields as organizational behaviour. (Saunders, Lewis & Thornhill, 2009, 116.)

Research approach of this thesis is combination of deductive and inductive. First relevant theory is analysed. Then data is collected about the phenomenon (know-how sharing practices in the case company) to better understand the current situation and pain points. After that the data is analysed and theory will be formulated for supporting the development of the phenomenon. (Saunders et al. 2009, 126.)

Research strategy of this thesis is case study, but it has features from action research as well. My role in this study is practitioner-researcher. Case study is defined as a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. It is applicable when the phenomenon being studied and the context within which it is being studied are not clearly evident. (Saunders et al. 2009, 145-146.) In this study I will study contemporary know-how sharing practices in the case company and how established CoPs suite for the purpose, so case study is valid research strategy for this study. The research strategy has also action research features since I am part of the case organization and therefore actively involved in the phenomenon being studied.

This study will be conducted using multiple data collection methods. One method is a questionnaire. The questionnaire will be sent to all (429) employees of Solita. The questionnaire itself is not part of this study, it was conducted by the company management, but the results of the study will be analysed in this study. The language of the questionnaire is finnish. The questionnaire was anonymous, so names, office locations or job descriptions are not known. Questionnaire and the results is attached in Appendix1. (Appendix 1).

Another data collection method is interviews. Interviews will be unstructured interviews, while unstructured interviews are applicable when exploring the interested area in general area in-depth. Unstructured interviews can also be referred as in-depth interviews. (Saunders et al. 2009, 321.) Interviews will be conducted for employees working in Analytic department in the case company. Interviewees are selected to represent different level of expertise in both Helsinki and Tampere offices, both junior and senior employees. All of the interviewees are members of one or more CoPs. Interviews will be conducted in finnish and the notes are written in finnish. The notes of individual interviews are presented in appendix 2. (Appendix 2).

Case study dimensions are single case and embedded case. Singe case means that phenomenon is investigated only by researching one case company. Embedded case means that the thesis will be done by examining multiple sub-units within the organization (e.g. department and/or team)

Data will be analysed mostly using qualitative methods. Data collected in this research is based on questionnaire and interviews and the results are non-numerical data. Multi-method qualitative studies will be chosen since data will be collected by using questionnaire and interviews.

4 Know-how management

In this chapter I will describe different ingredients in know-how management. In chapter 4.1. I will briefly introduce different terminology and the confusion with the terms. Chapter 4.2. focuses on describing what is the nature of knowing: why it is hard to manage know-how. In chapter 4.3. concept of Learning organization is introduced and chapter 4.4. introduces what is the role of creativity in know-how management.

4.1 Interpretation of terms

Knowledge, competence, know-how are terms that are used in everyday language but are not universally accepted. When introducing myself into the subject, I found that in literature, the terms are used mixed. Some writers use the term knowledge and some competence although having the same meaning. Merriam-Webster dictionary (Merriam-Webster, 2016) defines the terms as

> **Knowledge**: information, understanding, or skill that you get from experience or education
> **Competence**: the ability to do something well
> **Know-how**: knowledge of how to do something well

As can be seen, all the terms are interrelated. In a Finnish setting, 'knowledge management' is generally understood as both 'competence management' and 'knowledge management' (Laakso-Manninen & Viitala, 2007, 93). The term in finnish would be "Osaamisen hallinta".

To avoid misunderstanding, in this study I will use the word know-how, since it refers to both knowledge and competence. When citing to existing literature, the term may by either of mentioned above, but the meaning is: the knowledge and ability to do something well.

In general knowledge management is about making the right knowledge available to the right people. This refers knowledge management to be efficient management of knowledge. To a large degree, knowledge management is dependent on the understanding and management of organizational learning, organizational memory, knowledge sharing, knowledge creation, and organizational culture. (Alan Frost, 2010). This refers knowledge management as the processes relating to the growth, spreading and internalisation of knowledge. In this sense knowledge management is closely synonymous with competence management while it is linked to personal learning, as people are encouraged to develop individually and in teams and to share their knowledge. (Laakso-Manninen et al. 2007, 93)

4.2 Different aspects of knowledge

Wenger, McDermott, Snyder (2002) describe different aspects to knowledge, the nature of knowledge

- Knowledge lives in the human act of knowing
- Knowledge is tacit as well as explicit
- Knowledge is social as well as individual
- Knowledge is dynamic

Knowledge lives in the human act of knowing
The knowledge of an expert is a sum what one knows: his/her experiences, actions, thinking, learning. It is not enough to know something, one need to connect the "knowing" to some-thing to convert it as a knowledge. For example, one can read books about what kind of data model is suitable for online analytics, but can one say to have the knowledge of modelling the data without experiencing it by his/herself? It is the experiences, e.g. causal connections and other interrelated factors that influence, together with stored knowledge, e.g. the books of data modelling, that form the store of knowledge.

Knowledge is tacit as well as explicit
Knowledge is often separated into explicit and tacit knowledge. Explicit knowledge is knowledge that can be referred as know-what. It can be codified as documents and/or tools. Tacit knowledge is knowledge that can be referred as know-how. It is knowledge that's difficult to write down, visualize or transfer from one person to another. It is very context dependent and personal in nature.

It is vital to encompass that explicit knowledge is dependent on tacit knowledge. As in previous example of data modelling, explicit knowledge is the books of data modelling for analytic purposes, but to real know how to model the data is tacit knowledge.

From know-how management perspective both types of knowledge are necessary to share. Everything that can, should be transformed as explicit: best practises, common guidelines, templates etc. But that is not enough, to manage know-how and develop it, also tacit knowledge needs to be shared. Experiences from outside world (projects, conferences, etc.), to share the interdependent issues that enable dynamic responses to context specific problems. This type of knowledge will create competitive edge for an organization towards its competitors.

Knowledge is social as well as individual

We all know something; we have our own knowledge. But we haven’t created all that we know by ourselves, we share the knowledge with others. E.g. we know that blueberries are healthy, but we haven’t created that knowledge by ourselves. So although experience of knowing is individual, knowledge is not. This is very important aspect of knowledge when considering today’s world where everything is changing too rapidly for any individual to master. Complex problem solving requires multiple perspectives, several individuals to develop knowledge in social contexts.

Knowledge is dynamic

As mentioned earlier several times, knowledge is not static, it is constantly in motion. it is not like riding a bicycle, once you learn how to ride it, you’ll never forget. New technology and technological capabilities are released continuously, which create new technological opportunities but also new requirements and demands from the customer organizations. So at the same time when the complexity of knowledge is increasing, the lifecycle of knowledge is getting shorter. (Wenger et al. 2002, 6).

This does not mean that everything is changing. It is essential to understand that although the digitalized ecosystem is continuously evolving, not everything is changing, at least not at the same time. There is always stable core, a baseline that do not change. (Wenger, 1998, 11) For example, data need to be stored somewhere in order it to be available for analytical usage. In the old times, the natural place to store the data was on-premise SQL databases. Nowadays there are tremendous amount of different data storages (on-premise, cloud, SQL, no-SQL) but the fact is, the data still needs to be stored somewhere. The different data storage options and practises when to use what are changing, but the fact is, the data still needs to be stored somewhere. That is the baseline for that know-how, it needs to be constantly updated, but the baseline, data needs to be stored, stays the same. To keep the baseline up-to-date needs collaboration, no one can by him/herself keep up with the ever-advancing amount and rate of change.

4.3 Learning organization

An optimal state for creating and nurturing organizational know-how has been defined in terms of the learning organization. The term learning organization was first introduced by

Peter M. Senge in his book The Fifth Discipline: The Art and Practice of the Learning Organization 1990. He defines learning organization as

> Organization that acquires knowledge and innovates fast enough to survive and thrive in a rapidly changing environment. Learning organizations
> - create a culture that encourages and supports continuous employee learning, critical thinking, and risk taking with new ideas,
> - allow mistakes, and value employee contributions,
> - learn from experience and experiment,
> - disseminate the new knowledge throughout the organization for incorporation into day-to-day activities.
>
> (WebFinance Inc, 2016)

A learning organization is one that has identified the core competencies required for strategic success and also systematically manages them. Core competencies are the most critical and most distinctive resources a company possesses. (Laakso-Manninen et al, 2007, 103-104) Company's core competencies relate to its vision through the value-added it intends to produce in the future. Core competencies are not to be based on product groups, technology choices or market segments, but rather on a knowledge of customers and markets. (Laakso-Manninen, 2007 et al, 30)

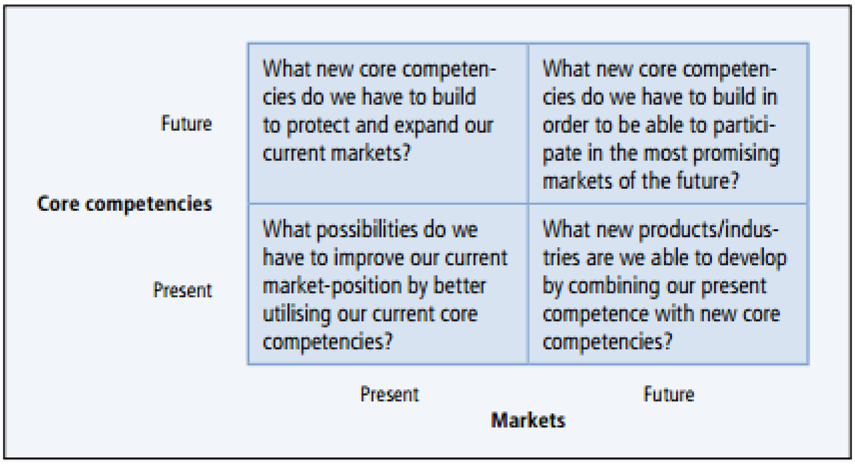

Figure 6, Relationships between core competencies and markets (Laakso-Manninen et al 2007, 30).

4.4 Three horizons framework

Company must understand customer value and focus its key processes to continuously increase it. The focus must be from optimizing separate technologies, assets, and vertical departments to optimize the flow of products and services through entire value streams that flow horizontally across technologies, assets, and departments to customers. (Lean Enterprise Institute, Inc., 2016) It is mandatory to have the know-how on separate tasks on specific area but the competitive edge is to have the know-how of the ecosystem as a whole.

Creativity needs to be built as the core construct of an organization wishing to compete effectively. (Ind, Watt, 2004, 1-3) In order for companies to stay in the business or even grow companies must attend to existing businesses while still considering areas they can grow in the future. As the case company mission is to be the travel guide for digitalized world, it needs to possess know-how how the environment is today but also tomorrow, and even in the future.

The three horizons framework—featured in The Alchemy of Growth by Baghai, Coley and White, 2000 provides a structure for companies to assess potential opportunities for growth without neglecting performance in the present.

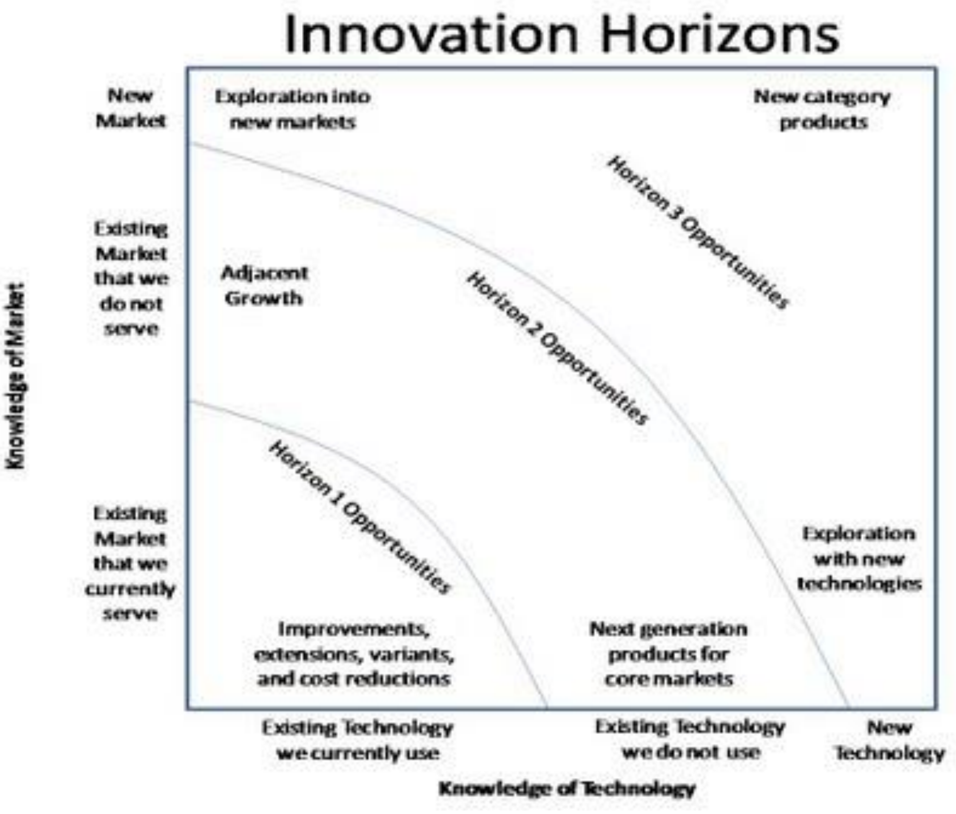

Figure 7, Innovation horizons (Kelley, 2010, 34).

> Horizon 1 is the core business of the company. The focus is on improving performance to maximize the remaining value and to set foundation for fu-

ture growth. Innovation in horizon 1 businesses is about finding better ways to deliver the current business.

Horizon 2 extends current business or moves it into new directions. Innovation in horizon 2 businesses is about building capabilities and fuel growth in new businesses.

Horizon 3 creates seeds for future businesses from which some of will prove successful and contribute new business. Innovation in horizon 3 is about identifying and nurturing options for the future.
(Kelley, 2010, 33-36)

Companies must manage businesses along all three horizons concurrently. Horizon 1, the foundation for activities are the elements that are stable. Those elements should be well understood and defined to minimize the effort used to conduct these activities. This includes best practices, process descriptions, reusable components, all that is needed to establish common baseline to conduct business as normal. This should unleash capacity to concentrate on how current business is evolving and how to extend current business horizon 2 activities. To accomplish in this, it is important to separate routine tasks from other tasks. Employees need to be empowered to simplify routine tasks in order to free up capacity to provide more time and better information to exercise problem solving, creativity, and innovation in situations that are not routine. (Bell, Orzen, 2011, 8) That would release time and effort for experts on concentrating on issues that are not routine, gaining know-how on new capabilities and being creative.

Horizon 3 activities, inventing new business opportunities, need to be ongoing continuously, since without these activities a company cannot be able to grow or even able to keep the current market share. There are several competitors offering same services only in Finland not to mention todays globalized markets, so value of creativity in generating competitive advantage is clear. The company must differentiate from its competitors somehow. Creativity can offer tangible differentiation through the delivery of valuable business solutions. (Ind, Watt, 2004, 2) In this sense it is desirable to pay as little effort as possible on routine tasks and as much effort as possible on creativity and improvements.

The challenge in this is that company's know-how always derives from the expertise of its employees. (Laakso-Manninen et al. 2007, 103). Organizational creativity on the other hand, is the result not of exceptional individuals but of exceptional groups. (Ind et al. 2004, 1-3). How to manage this is the key element for know-how management.

5 Communities of Practise

In this chapter I will introduce the Communities of Practice concept. In chapter 5.1. the theoretical background, social learning theory, where CoPs originate will be described. In chapter 5.2 I will go through different definitions of a CoP. In chapter 5.3 I will describe the elements of a CoP. Chapter 5.4. will focus on different level of participation in CoPs.

5.1 Theoretical background

The term community of practice is attributed to Lave and Wenger ‘s book Situated learning: Legitimate peripheral participation (Lave & Wenger, 1991). The theoretical background for Communities of Practice can be addressed to social theory of learning. Social Learning Theory by Albert Bandura (1977) posits that people learn from one another, via observation, imitation, and modelling. Social learning theory has sometimes been called a bridge between behaviourist and cognitive learning theories because it encompasses attention, memory, and motivation. The theory is related to Vygotsky’s Social Development Theory and Lave and Wenger ‘s Situated Learning, which also emphasize the importance of social learning. (Learning-Theories.com, 2016)

Social theory of learning emphasizes social participation as a process of learning and knowing. It focuses learning as process of social participation, not as a separate activity which has a beginning and an end. While participation is on focus, learning can be described from different point of views

- For individuals learning is an issue of engaging in and contributing to the practices of their communities
- For communities learning is an issue of refining their practice and ensuring new generation of members
- For organizations learning is an issue of sustaining the interconnected communities of practice through which an organization knows what it knows and thus becomes effective and valuable as an organization

(Wenger, 1998, 7-8)

Social theory of learning defines four (4) components that need to be integrated to characterize social participation

Figure 8, Components of a social theory of learning (Wenger, 1998, 5)

Meaning
A way of talking about our changing ability.

Practice
A way of talking about the shared historical and social resources, frameworks and perspectives that can sustain mutual engagement in action.

Community
A way of talking about the social configuration in which our enterprises are defined as worth pursuing and our participation is recognizable as competence.

Identity
A way talking about how learning changes who we are and creates personal histories of be-coming in the context of our communities.
(Wenger, 1998, 5)

The concept of Community of Practise is a subject that integrates the components together.

5.2 Definitions

Recently Communities of Practise has become a popular way to foster organizational learning and know-how development. E.g. Communities of Practise are described in Disciplined Agile 2.0 (Disciplined Agile 2.X, 2016) and in SAFe, Scaled Agile framework (SAFe, 2016).

Here are the most common definitions for a Community of Practise

CoP definition by Wenger, McDermott and Snyder

> Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis. (Wenger et al. 2002, 4)

CoP definition by Hislop

> Community of Practice is group of people who have particular activity in common, and as consequence have some common knowledge, a sense of community identity, and some element of overlapping values. (Hislop, 2009, 167)

CoP definition by Disciplined Agile 2.0

> A CoP is a collection of people who share a craft or profession who have banded together to 'learn' from each other to develop themselves and often even the organization. (Disciplined Agile 2.X, 2016)

CoP definition by Scaled Agile framework

> Communities of Practice are groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly. (SAFe, 2016)

All definitions emphasize that a CoP is a group of people, who have something in common who interact and interactions involve learning in some extent.

5.3 The elements of a Community of Practise

The reality is that there are communities everywhere. We all belong to several communities, with or without realizing it. But every community is not a community of practise. There are three (3) fundamental elements that differentiates a Community of Practise from a regular community: The Domain, the Practice, and the Community.

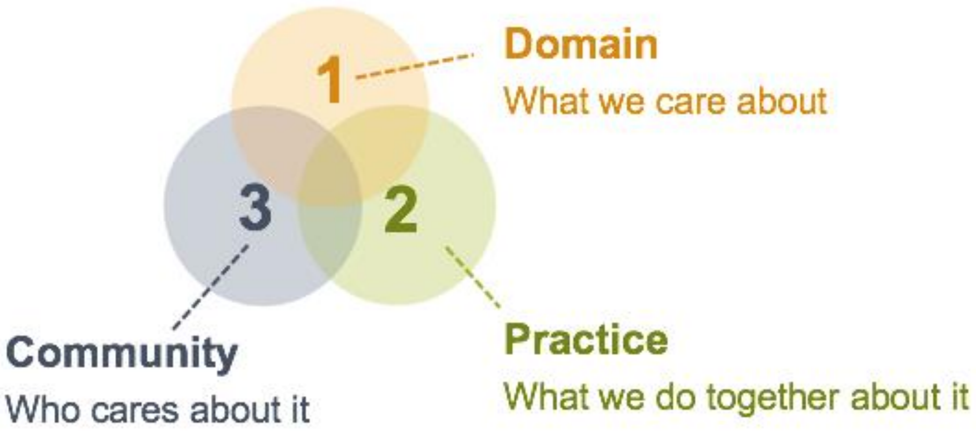

Figure 9, Elements of a CoP (SAFe, 2016).

5.3.1 The domain

Domain sets the common ground for a CoP. Well defined domain becomes a statement of what knowledge the CoP will maintain. It defines the purpose and identity for the CoP as well as the value that the CoP will bring to its members and to others. The domain will delineate the importance of a CoP to the outside world, which in turn makes the domain important to its members, which in turn motivates its members to be active and develop the practice. The most successful CoPs are those in which the goals and needs of an organization intersect with the aspirations of participants. If the domain of a CoP fails to inspire its members, the community will not flourish. If the domain of a CoP lacks strategic relevance to the organization, the CoP will be marginalized. (Wenger et al. 2002, 29-31). So CoPs need to endorse both individual focus areas as well as areas that fulfil the commercial needs of a company. As the figure 13 illustrates, the optimum creativity occurs when the balance between individual and business needs are met.

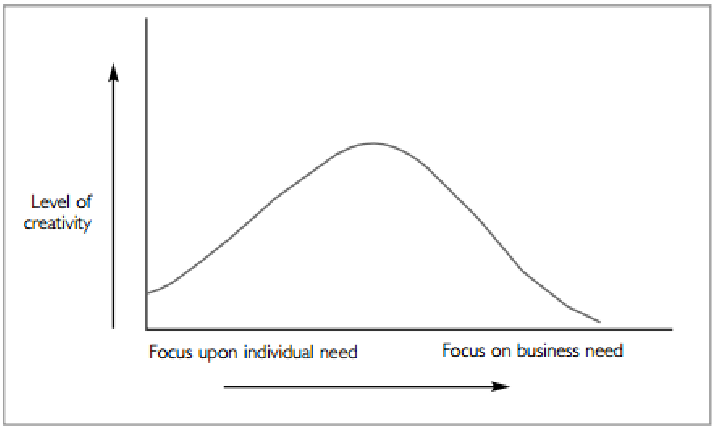

Figure 10, The creativity curve, (Ind et al. 2004, 17).

Too little focus on commercial oriented issues (strategic relevance) can reduce creativity by limiting organizations ability to manage, think and operate successfully. Too little focus on individual needs reduces intrinsic motivation and commitment. It is important that the domain holds balance between individual freedom and organizations business requirements. (Ind et al, 2004, 17)

Membership must be committed to the domain; without commitment a community is just a group of people. Members need to have shared understanding of the domain to be able to decide what is important and in which direction the practice should be developed. The domain should be such that it can evolve along with the world and the community. Therefore, the domain should not be set too tight, e.g. to certain technology or fixed set of problems. As the problems are solved, as new technologies pose new challenges and opportunities, as new members of a CoP bring fresh perspectives, the domain evolves still maintaining sense of identity rooted in a shared understanding of its domain. (Wenger et al. 2002, 29-31).

The domain can be referred as the core competencies the company has. In a case company one core competency could be Data Warehousing, so that could be a domain for a CoP. What Data Warehousing is, will evolve in time, but as long as it is one of core competencies in the company, it is something which know-how should be managed. And in addition to core competencies, also core skills can be domains for CoPs. For example, in the case organization the work is mainly conducted in projects, so project management skills could be a domain for Project Management CoP.

Together with the domain, the primary intent, the purpose of the CoP must be defined. The domain will set the subject area, and the primary intent will set on what perspective the subject area will be approached. Examples of different intents are

- Helping CoPs to help members to solve everyday problems and share ideas
- Best practice CoPs to create, develop, validate specific practices
- Knowledge-stewarding CoPs to organize, upgrade, and distribute knowledge within its members
- Innovation CoPs to foster unexpected ideas and innovations.

(Wenger et al. 2002, 74-76)

The primary intent must be defined while different intents require different structures and activities. For example, in Data Warehousing CoP the intent could be helping dw-developers to accomplish their everyday tasks, maintain best practices and methodology for creating data warehouses or to innovate what data warehousing could be in the future. Especially when starting a CoP, unclear intents can overwhelm members and the CoP gets nothing accomplished. (Wenger et al. 2002, 74).

5.3.2 The practise

Practice denotes to defined ways of doing things in a specific domain: a set of approaches, shared standards that creates basis for action, communication and problem solving. One of the critical tasks of the practise is to set the baseline of common knowledge that can be assumed the members of the CoP possess. Setting the baseline means that there is a basic body of knowledge which creates the foundation for developing the practice. For example, if the CoPs domain is Data Warehousing, the baseline could be the comprehension of what Data Warehousing is. On the other hand, the baseline for Data Warehousing domain could be comprehension of different components of a modern data warehousing. Different baselines would create different practices. This does not mean that all members of a CoP need to be alike, on the contrary, effective CoPs consist of members possessing different viewpoint, they just need to share the same baseline. Without mutually agreed baseline the CoP will lack focus, without shared standards and “language”, the practise cannot be effective. (Wenger et al. 2002, 36)

5.3.3 The community

The community is an element which is critical to an effective knowledge structure. Community is a group of people who care about the domain, who interact and engage in shared activities, help each other, and share information with each other, and in the process develop sense of belonging and mutual commitment. members build relationships that enable them to learn from each other. Having others who share the same interest towards the domain with each having individual perspective creates social learning system that is more than a sum of its part. (Wenger et al. 2002, 33)

The community should consist of people with different level of experience. If the CoP consists only of the most experienced members, the chance of new innovations will diminish, while the most experienced tend to defend the existing practices/ideas as they likely were the ones that brought them to the organization. If the CoP consists only of the new comers, new ideas may flourish, but the former experience and knowledge why things are as those are, may be forgotten. So there should be a mixture of seniority and novelty in the community to get the right balance. (Disciplined Agile 2.X, 2016)

One requisite for a CoP is interaction: just having the same job title or role is not enough. To form a CoP, members must interact regularly with each other. Interacting regularly members develop a shared understanding of the domain and an approach to their practice. In the process, they build valuable relationships based on trust and respect, they build a sense of common history and identity.

Communities can be established role or topic based depending on the purpose (the domain) of the CoP.

If the purpose of the CoP is to gather all experts sharing the same role in different projects to develop the practice, the CoP is role based.

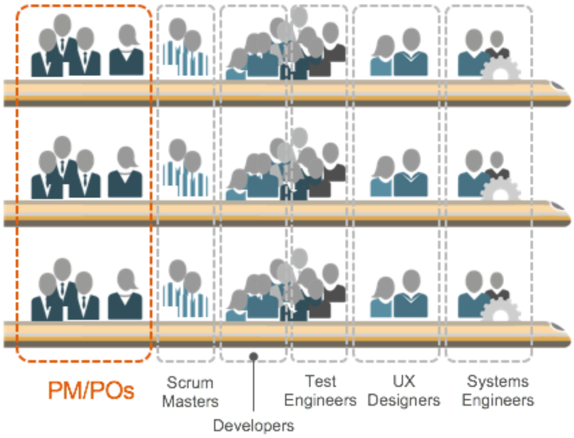

Figure 11, Role based CoP (SAFe, 2016)

In a case company role based CoPs could be established for different competence areas, e.g. data integration in a cloud environment. That CoP would consist on employees working on that area and the purpose would be to share pains and gains, create common guidelines, develop reusable components, and to discuss about coming changes on that area. These types of CoPs could be suitable for improving company's performance by finding better ways to deliver the current business.

The purpose of a CoP can also be to develop a specific topic which requires different kind of expertise, then the CoP would be topic based CoP.

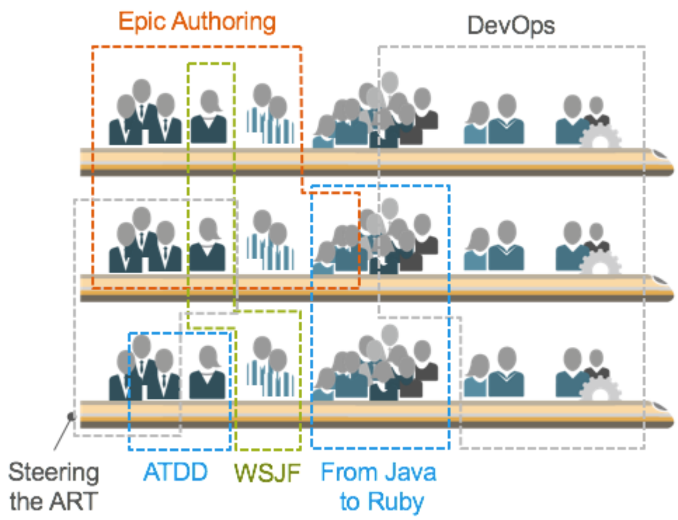

Figure 12, Topic based CoP (SAFe, 2016)

In a case company topic based CoP could be established for different business sectors, e.g. customer analytics for retail sector. That CoP would consist of employees holding different kind of expertise to innovate a concept or product to be offered to customers on that sector. A team participating on a Hackathon event can be referred as a topic based CoP. Wikipedia describes hackathon as

> A hackathon is an event in which computer programmers and others involved in software development, including graphic designers, interface designers and project managers, collaborate intensively on software projects. Hackathons tend to have a specific focus, which can include the programming language used, the operating system, an application, an API, or the subject and the demographic group of the programmers. (Wikipedia, 2016)

These types of CoPs could be suitable for extending company’s current business into new direction.

There is no need to choose the types of CoPs the company wants to set up, those are not mutually exclusive.

5.4 Participation

People participate in CoPs for various of reasons –some because the community directly provides value, some for the personal connection, some for opportunity to improve their skills. Members are the ones that form the CoP, the success of a CoP is fully dependent on its member's personal passion to be involved. That is why the actual level of participation cannot be forced, participation must be voluntary. (Wenger et al, 2002, 55) And because people have various of reasons to participate in a CoP, there must be opportunities for different level of participation.

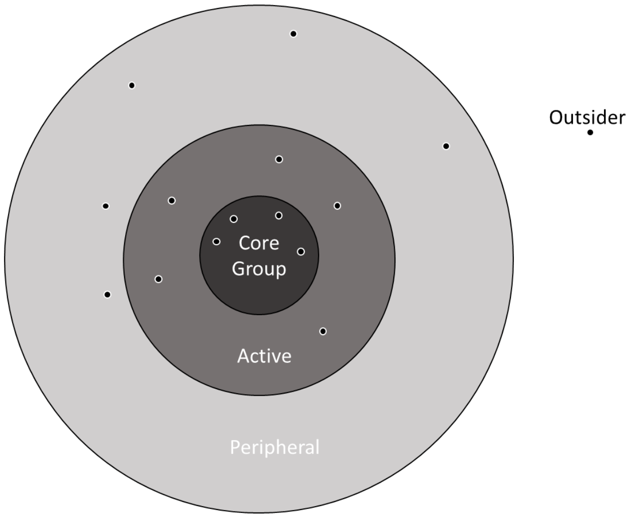

Figure 13, Degrees of community participation (Wenger et al, 2002, 57).

Core group is the heart of the community. Its role is to lead, organize, charter, market, nurture and operate the community. The size of the core group is rather small 10-15% of the whole community. (Wenger et al, 2002, 56)

Active group members attend meetings regularly and participate occasionally in the community forums, but without the intensity of the core group. Active group help to shape the definition and direction of the CoP including community shared vision, purpose, roles, strategies for interaction, marketing, and communications. The size of the active group is also rather small, another 10-15% of the whole community. (Wenger et al, 2002, 56)

A large portion of community members ate peripheral. They are individuals who keep to the side-lines, watching the interaction of the core and active members. Some remain peripheral due to lack of time, some feel that their involvement is not appropriate. Peripheral members are an essential dimension of a CoP. Although not contributing to a CoP itself, members gain know-how about the practice which they can utilize. (Wenger et al, 2002, 57)

In SAFe, peripheral group is further divided into occasional and peripheral members. Occasional members are individuals who participate when specific topic of interest are addressed or when they have something to contribute to the group. Peripheral participants feel a connection to the community but engage on a limited basis. These could be newcomers or those who have a more casual interest in community activities. (SAFe, 2016)

Outside these three (3) main levels are people surrounding the community, the outsiders, who are not members but who have an interest in the community. SAFe defines this group as transactional members, people who are the least connected to the community and do not consider themselves to be members. They may connect only to access community resources or provide a specific service to the CoP (e.g. website support)

Community members move in and out of various levels of participation over time. Core members often move as peripheral as the focus of the community shifts. Active members may be deeply engaged for some time and then disengage. Peripheral member may drift into centre as he/she has more time etc. The key to a healthy community is to allow participants of all levels to feel like full members. Successful communities “build benches” for peripheral members to join more actively later and create opportunities for active members to take limited leadership roles. (Wenger et al, 2002, 57)

6 Supporting frameworks

In this chapter I will briefly describe two (2) supporting frameworks, Lean IT and Holacracy. Those will be referred in the chapter 7 where I create a synthesis of studied theories and frameworks. Chapter 6.1. will discuss about the foundation of Lean IT and its relevance in know-how management. Chapter 6.2. describes Holacracy, a trademark of Holacracy Inc. which is a methodology for managing self-organizing teams.

6.1 Lean IT

The term "Lean" was introduced to describe Toyota's business during the late 1980s by a research team headed by Jim Womack, Ph.D., at MIT's International Motor Vehicle Program. The characteristics of a Lean organization is described in Lean Thinking, by Womack and Dan Jones, founders of the Lean Enterprise Institute and the Lean Enterprise Academy (UK). (Lean Enterprise Institute, Inc., 2016)

Lean thinking is a common practice in manufacturing environments. A popular misconception is that Lean is suited only for manufacturing, but that is not true: Lean can be applied in every business and every process while it is not a tactic program, but a way of thinking and acting for an entire organization. The ultimate target for Lean transformation is to create value for the enterprise and its customers. (Bell ,Orzen, 2011, 16)

Lean IT is an extension of Lean thinking, the term has been introduced by Steven C. Bell and Michael A. Orzen in their book Lean IT: Enabling and Sustaining Your Lean Transformation. Their definition for Lean IT is

> Lean IT engages people, using a framework of Lean principles, systems, and tools, to integrate, align, and synchronize the IT organization with the business to provide quality information and effective information systems, enabling and sustaining the continuous improvement and innovations of process. (Bell ,Orzen, 2011, 9-10)

Although Lean IT is mainly targeted for breaking silos between IT and business and optimizing software development process, in my viewpoint it offers a good foundation for know-how management as well.

Organizations implementing Lean often start the implementation by introducing new tools and techniques, but without thoroughly internalizing the Lean principles, the company will not achieve the broad acceptance needed. Lean enterprise principles pyramid created by Bell and Orzen (2010) introduces Lean principles.

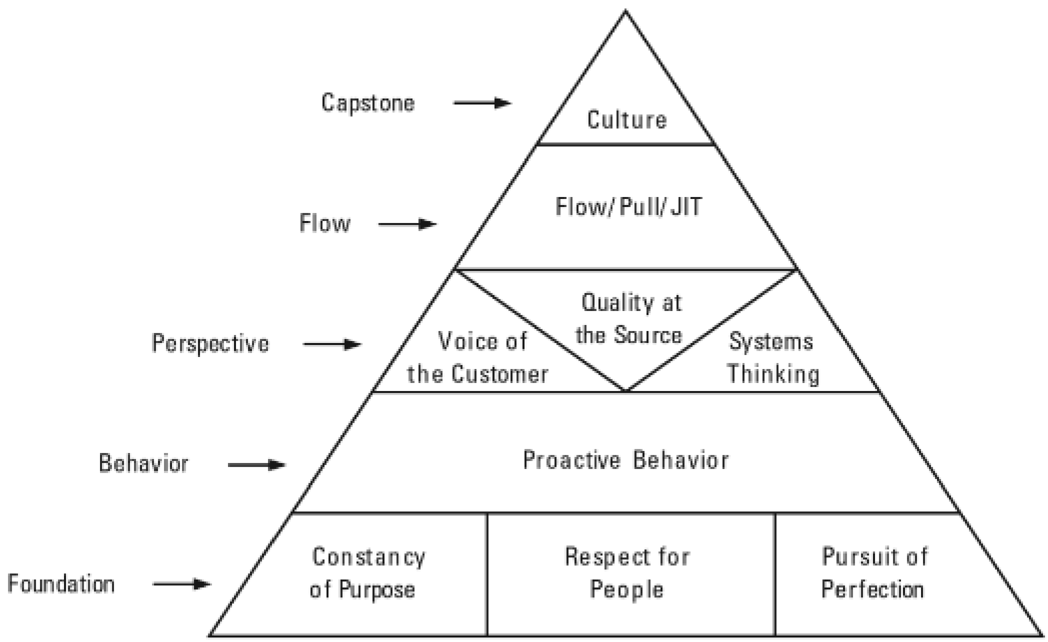

Figure 14, Lean Enterprise Principles Pyramid (Bell et al. 2011, 18)

Although the whole pyramid contains principles that could be applied to case company's urge to empower know-how development, in this study I will concentrate on the foundation of the pyramid while it defines the solid building blocks a company must establish to be able to run Lean.

The foundation consists of three (3) building blocks

- Constancy of Purpose
- Respect for People
- Pursuit of Perfection

Constancy of Purpose

Constancy of Purpose concerns leadership having to maintain clarity on important long-term objectives to set a direction. Everyone in the company should be able to answer the question "What matters the most". Leaders need to establish strategic direction (top-down) and it is employee's responsibility to determine how to best accomplish them (bottom-up). (Bell et al. 2011, 20) Picture below illustrates the top-down bottom-up approach.

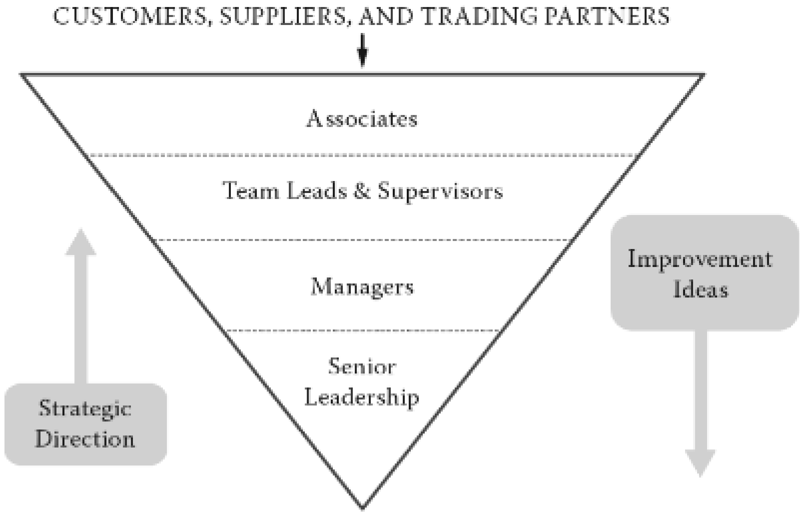

Figure 15, Lean Enterprise Inverted Managerial Pyramid (Bell et al. 2011, 20)

At the very top are customers and business partners, since they define value and create demand pull signals that trigger work to be performed. In the case of know-how management, I would also add market trends and technical innovations there since those are factors that create signals for work as well.

Next are the associates, the employees, who most frequently interact with those customers and are in the best position to directly identify actions that add the most value. Here could be also new capabilities and possibilities identified from market that the employees have encountered.

Management's role is to translate and communicate purpose, strategy, and goals throughout the organization to its employees. When referring know-how as the core product, this refers to setting strategic direction what the company does and what it does not do. Even when offering digitalized business services, it cannot mean that the company does everything on that area. Management's role is to set the boundaries where to focus and where not.

Respect for people

Respect for people is about involving all people with different backgrounds, insights, skills and experience to contribute towards set direction. Creativity can only occur when respect for people is consistently applied throughout all levels of the organization. As described earlier, individuals, the employees are the ones doing the work, so they see the improvement opportunities, they need to feel safe and appreciated to share their insights.

In know-how management this refers to employee's permission to develop and improve practices and ways of working as they see fit. Management needs to rely on their employees and not micromanage.

Pursuit for perfection

Pursuit for perfection addresses the continuous effort to shift from reactive firefighting to proactive problem solving. It does not mean that everything must be perfect until released, on the contrary, Lean culture embraces experimental risk taking and piloting. Doing something is always learning something: if it works, good, but if it does not work, that is also learning. Pursuit for perfection refers to constant improvement, what is now done certain way, may need to be done differently tomorrow. Employees need to have the improvement state of mind and pursuit to improve it.

In respect for people, I described how employees need to have permission to develop and improve practices and ways of working as they see fit. But besides having a permission, employees are obligated to do so. In Lean organization no one should wait for orders and commands from the management, nor do things just because "it has always done this way". Best but also worst practices need to be shared, so that learning happens and practices can be enhanced.

A company that wants to be a Lean company, must be built on these principles. It requires leaders to set the direction and goals, and employees to define the path. And because no one can do this alone, collaboration is needed. Lean is not a project which has a start and an end, it is a process which requires constant development and adjustments.

6.2 Holacracy

Holacracy is a system that contains methods for organizing a company and a governance model for running it. In this study I will concentrate on introducing the organizing part, while it contains features that can be referred when describing self-organizing practises such as definition of functions of the organization and defined roles to support each function. Holacracy also contains features for running an organization, but this will be delineated from this study since it is not in the scope of this thesis. The constitution of Holacracy containing all elements of the method can be found from http://www.Holacracy.org/constitution. (Holacracy Constitution, 2016)

The Holacracy method was created by Brian Robertson and Tom Thomison early 2007 when they established a company called HolacracyOne and started to package methods they have experienced previously from agile software development, the lean movement, sociocracy, and several other models. In 2009, HolacracyOne formalized the method into the first Holacracy Constitution which has been developing ever since. (Holacracy Back-story, 2016) The name Holacracy is a registered trademark of HolacracyOne LLC. Amazon-owned Zappos, which has more than 1,000 employees, is by far the largest company to try operating as a Holacracy.

The word Holacracy comes from "holon," a term Arthur Koestler coined in his 1967 book "The Ghost in the Machine." A holon is an autonomous unit that is nevertheless a dependent/interdependent part of a larger whole. The suffix -cracy means "ruled by." Accordingly, a Holacracy is an organization ruled by self-contained groups, just as a democracy (from the Greek "demos" for common people) is a system ruled by the people. (Ivy Wigmore, 2015)

The fundamental idea behind Holacracy is that when the functions of an organization are described and needed roles to accomplish those functions are set, the authority can be distributed from management to the process and employees itself. The target in Holacracy is to ensure that the one who is responsible for completing a task is given the authority to decide how that work should be carried out.

Traditional organizations are built hierarchically.

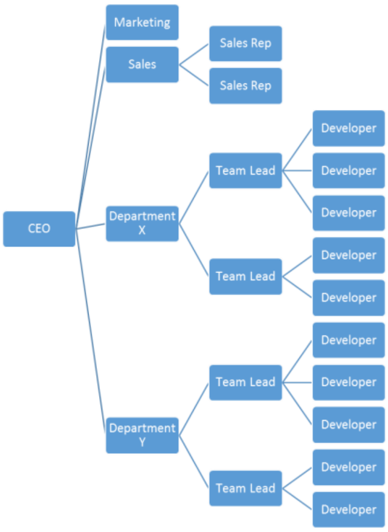

Figure 16, Traditional organizational structure

In Holacracy, organizations are created using circle structure.

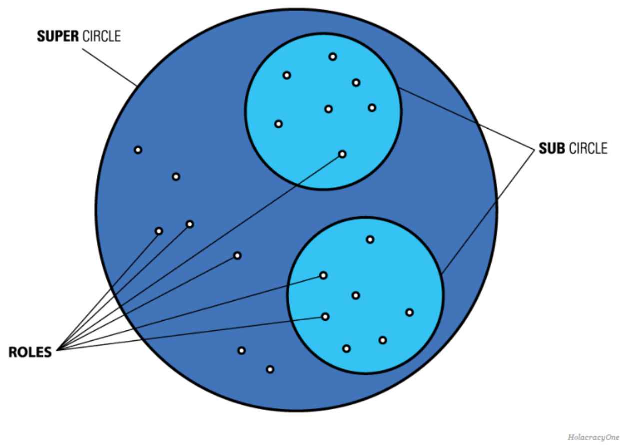

Figure 17, Basic Circle structure in Holacracy (Robertson, 2015, 47).

The main distinction between traditional organization structure and the structure in Holacracy is what is been structured. In Holacracy instead of structuring people, the functions and roles of the company are structured. A circle is not a group of people but a group of roles. A role is an element of a traditional job broken down into a task or tasks.

The purpose of a circle can vary wildly in both scale and type. Some circles implement specific projects while others manage e.g. a business line or supporting function, or deal with over-all business operation e.g. finance. Some circles are small and narrowly focused while larger circles may embrace several fully contained circles. (Robertson, 2015, 48). A super circle is a circle that has sub circles, e.g. product development. In a case company, one super circle could be Analytics operations. Each sub circle is dedicated for specific function, e.g. product X development. Referred to the case company, one sub circle could be Data Warehousing.

Roles within a circle are defined to accomplish the function the circle is established for. Every role comes with agreed-upon responsibilities. It's important to note that a role is not representative of a person, a single employee can have many roles although one role can only be assigned to one person. If a role's responsibilities become too much for just one person to take care of, then it can be expanded to separate roles or even into a new sub-circle with its own roles.

Every sub circle has two (2) predefined roles: a lead link and a representative link. The lead link is appointed by the super circle to represent its needs in the sub circle. The lead link is responsible that the purpose, strategy, and needs of its broader context are being taking care of. The representative link is elected by the members of a sub circle and its responsibility is to represent the sub circle within its super circle. The representative link is responsible for bring frontline feedback to the boarder context, while guarding the autonomy and sustainability of the sub circle within its environment. (Robertson 2015, 49-50) Also a third predefined role can be introduced when necessary, a cross link. A cross link is a connection between two parallel circles. The cross link provides a communication channel between two circles without having to go through lead or rep link channels. Cross links are feasible when two sub circles have natural integration which each other's and it is useful to have direct channel between these two circles, e.g. sales and product development. But while lead and representative links are mandatory in Holacracy, cross links are more seldom needed. (Robertson 2015, 56)

The whole Holacracy relies heavily on predefined roles and responsibilities. Operations of an organization are divided into specific circles and within circles there are specific roles to accomplish specific tasks. Roles and responsibilities are transparent, so that everyone knows not only his/her own responsibilities but also the roles and responsibilities for everyone else. Lead link of a circle is not responsible of the people within the circle, as team leaders in traditional organizations, but responsible of the roles within a circle. He/she needs to ensure that all actions are covered to fulfil the purpose of a circle. Lead link role is assigned by the management of the company.

7 Synthesis of the theoretical study

In previous chapter different theories have been introduced. In this chapter I draw a conclusion what these different theories and methodologies have to offer in know-how management.

Know-how management is about managing existing knowledge, skills and competencies, but also managing creativity and innovativeness in order to develop the know-how to enable that the business is on solid ground and the company is able to stay in the business also in the future. CoP –concept is feasible way to foster know-how management. Although CoPs should be independent and arise from real needs experienced in the field, those cannot be isolated from the company strategy and mission. Lean IT defines that leaders should to set the direction and goals, and employees are to define the path.

Direction and goals should be defined by setting company's core competencies. Required know-how can be derived from the core competencies. Direction as a word already refers to motion, core competencies must be defined such that those enable business also in the future. Three horizons framework (Chapter 4.4) provides feasible way of managing current and future needs by dividing actions into three horizons where Horizon1 is about nurturing business as it is today, Horizon2 for extending the business into new (already existing) markets and technologies and Horizon3 for exploring future business possibilities.

Company's core competencies and know-how required need to be defined according for all horizons:

- what is company's current business and what kind of know-how is needed to conduct business today (Horizon1),
- where company could extend its business in near future and what kind of additional know-how is needed to accomplish that (Horizon2),
- what are the potential business opportunities in the future and what kind of know-how would be required to pursuit into that direction (Horizon3).

When the core competencies are defined, it should be clear to everyone working on the company, what the company is doing and where it is aiming at. And in addition to employees of the company, it should be clear to customers as well, definition of core competencies will create differentiation and competitive edge towards competitors on the field.

For the case company and Analytics department in it, the core competencies have been defined as

- Data Warehousing
- Business Intelligence
- Big Data
- Master Data Management
- Business planning
- Predictive Analytics
- Data Science

Because these are defined as the core competencies, know-how on those areas need to be managed.

Holacracy is about empowering organizations to be more self-organizing. That is done due organizing company's work instead of organizing employees. Work is divided into different functions, super circles. Functions could be understood as traditional departments which have their own targets and vision. In a case company one function could be Analytics. Functions should be further divided into areas, sub circles. For the Analytics department, these could be the core competences the function wants to operate.

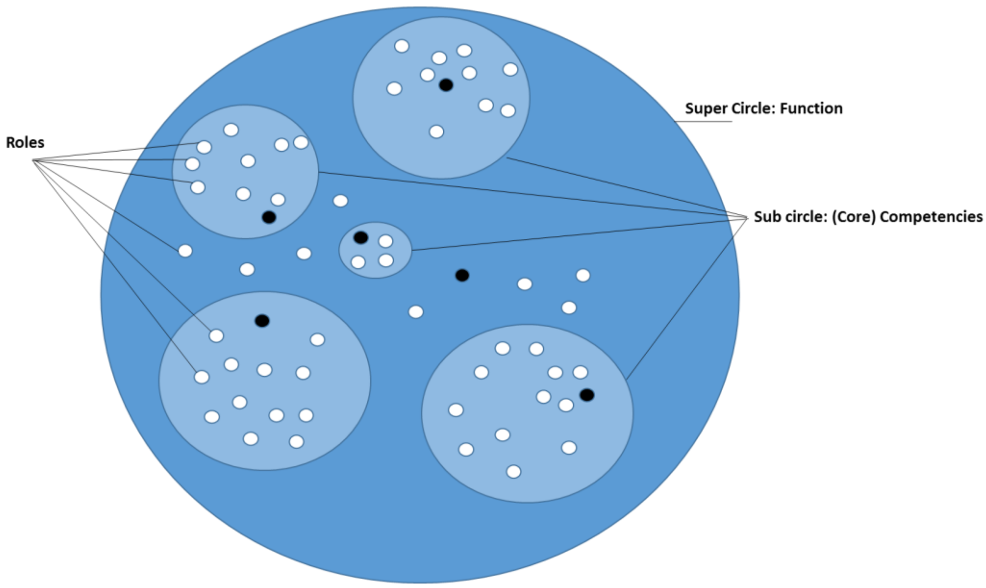

Figure 18, Holacracy circles in practice.

Besides core competencies there are also other areas mandatory to succeed in performing the functions. These are e.g. resourcing, project/product management, invoicing, supporting functions. These may lead to separate sub circles or distinct roles within the function depending on the subject matter. And naturally company's core competences, and even functions may change during time. Some business becomes obsolete and new capabilities create new possibilities. Holacracy circles are living circles, which can and should change in time.

Instead of assigning people into certain functions, people should be assigned into certain roles which are set to certain circle. Some may have a role to conduct customer faced projects while some may have other responsibilities as well. All roles should include know-how sharing responsibilities. By setting the roles and assigning people into roles enables individuals to understand what is expected from them in the organization. It also enables everyone to understand everyone's role in the circle, so it creates transparency and clarity. Unclear expectations create tensions and delays in work.

Communities of Practice are entities which are formed to develop know-how for specified subject. The subject of a CoP is referred as a domain. While target of the Community of Practices are to develop know-how of its domain, domains should be based on company's core competencies. CoPs can be formed using to different approaches: either role or topic based.

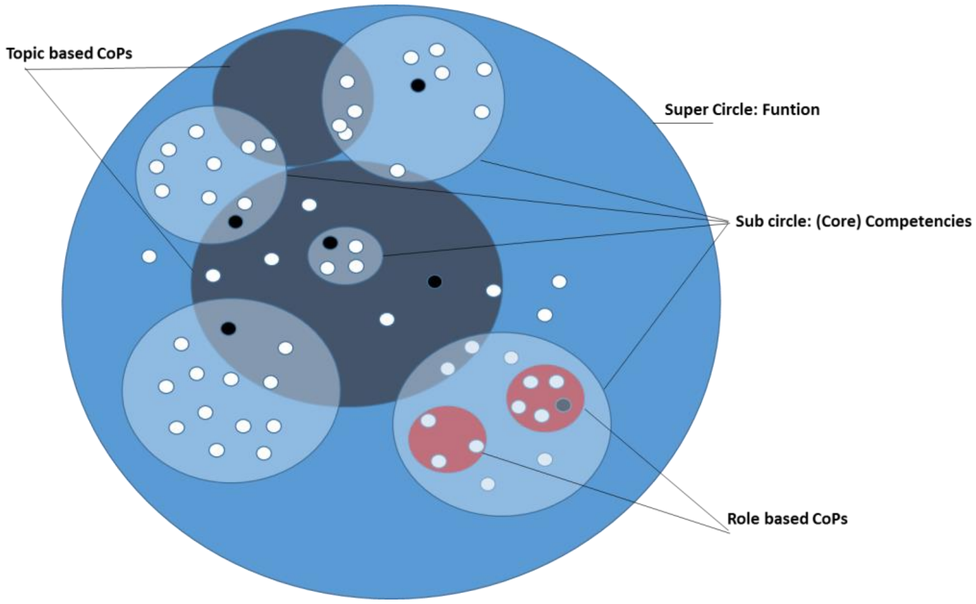

Figure 19, Holacracy circles and CoPs.

Role based CoPs can be seen as a CoP inside one sub circle. The target for the CoP is manage the know-how for specific competence area. One competence area can have several CoPs since too wide domain may lead to uncertainty about the know-how the CoP should foster. Too narrow domain can lead to situation where the big picture might be lost. The domain should be specific and stand time. When setting the domain, it is also important to set the practice: CoPs can have several kind of practices: e.g. one for new comers to familiarize with the subject, others for specific technologies and one for architectural guidelines. Common for role-based CoPs is that those develop the practice from the perspective what the company already does. By doing things better, differently, more efficiently, would give some kind of competitive edge for members of the CoP but also for the company and its customers.

Topic based CoPs can be seen as CoPs between sub circles or even between super circles. Target for topic based CoPs is mainly to serve innovative purposes, Horizons 2 and 3 (Chapter 4.4.): to be creative what could be done next/in the future. For example, a CoP could be formed to invent a solution for customer analytics in retail business. It would require expertise not only from different technological perspectives but also expertise from retail business perspective, what are the key issues specific on that business sector. Common for these types of CoPs is that those develop the practise from the perspective what the company is not doing currently but in the future may do.

8 Community of practice –concept in the case company

The target of every CoP is to develop our know-how and actions so that the case company can deliver value for its customers faster. When CoP -concept was released on November 2015, the cornerstones for the concept were announced.

1. Mission for CoP's is to develop know-how of its members.
2. CoP is open for all. All Solita employees must have opportunity to access communication, sessions and documentation of the CoP.
3. CoP cannot be tied to physical location.
4. Whoever can establish a CoP.
5. A CoP can be established at one's own decision when following criteria's are met
    a. Purpose of the CoP is described
    b. The CoP has added value
        - For customers: value creation, new business, cost savings
        - For the case company: new business, cost savings
        - For the employees: know-how, improvement in ways of working
    c. Metric to measure added value of the CoP is described
    d. Leader(s) of the CoP are set
    e. Contact information of the CoP is informed
6. If information described above cannot be filled, the founder of the CoP need to develop the idea further with others.
7. In its defined area, the CoP must support all employees of the case company in all customer activities.
8. The CoP values it existence every 6 months
    a. CoP members vote whether the CoP has added enough targeted value for customer, for the case company, and for the employees.
    b. If majority of members of the CoP see that targeted values have not been achieved, CoP will be terminated.
    c. If minority of members of the CoP see the targeted values have not been achieved, it is better for them to leave the CoP

If a CoP fulfils the criteria mentioned in the cornerstones, a CoP can be established. There are no additional permissions required from management. And there are also no permissions required to join a CoP, everybody can freely choose in which CoP to join.

Every CoP have its own site in the case company's intranet. That is a place where CoPs must introduce its target and mission as well as schedule for future actions. The CoP can also share documentation and other files on the site. In addition to intranet site, every CoP has its own HipChat® channel. HipChat is a collaboration tool widely used in the case company. In HipChat members of a CoP can chat, share ideas, ask questions etc. Whoever can join the channel, so communication is open and available for everybody.

So it can be said, that CoPs are promoting openness: all case company's employees have the opportunity to access communication, sessions and documentation of every CoP. The concept also promotes self-management, while every employee can freely choose how and where to use the 15 days reserved for know-how development.

9 Analysis of Community of practice –concept in the case company

In chapter 9.1. I will go through answers for a web based questionnaire, which was conducted to all case company employees. The questionnaire itself was not part of this study, it was conducted by the company management, but the results of the study are analysed here in chapter 9.2.

9.1 Questionnaire

The aim for the questionnaire was to get feedback how CoPs are functioning in the case company. CoP concept was launched in October 2015 and the questionnaire was conducted six (6) months after the launch, in March 2016. The questionnaire was sent to all (429) employees of Solita. 145 employees answered to the questionnaire response rate being 34%. The language of the questionnaire was finnish. The questionnaire was anonymous, so names, office locations or job descriptions are not known. Questions of the questionnaire and summary of the answers are presented in appendix 1. (Appendix 1)

At the time the questionnaire was conducted there were altogether 43 different CoPs, people answering the questionnaire belong to 0 to 14 different CoP.

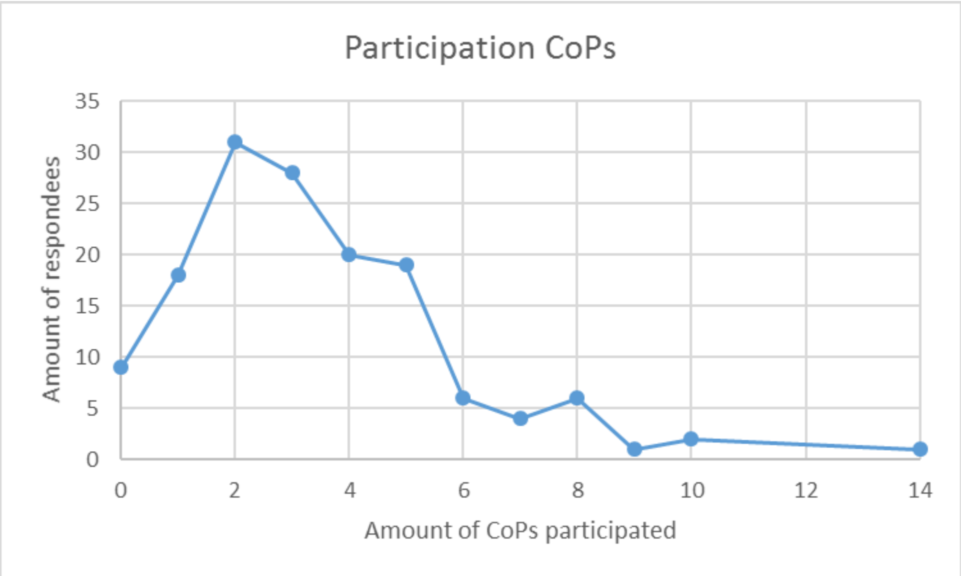

Figure 20, Number of CoPs respondents participated

Majority of the respondents were participating 2-3 different CoPs.

One question was how useful the respondent sees the CoP –concept for him/herself, for Solita and for the customer. The rates for different focus groups where quite convergent, the ones who rated CoP –concept useful for themselves, most likely rated it useful for Solita and customer as well.

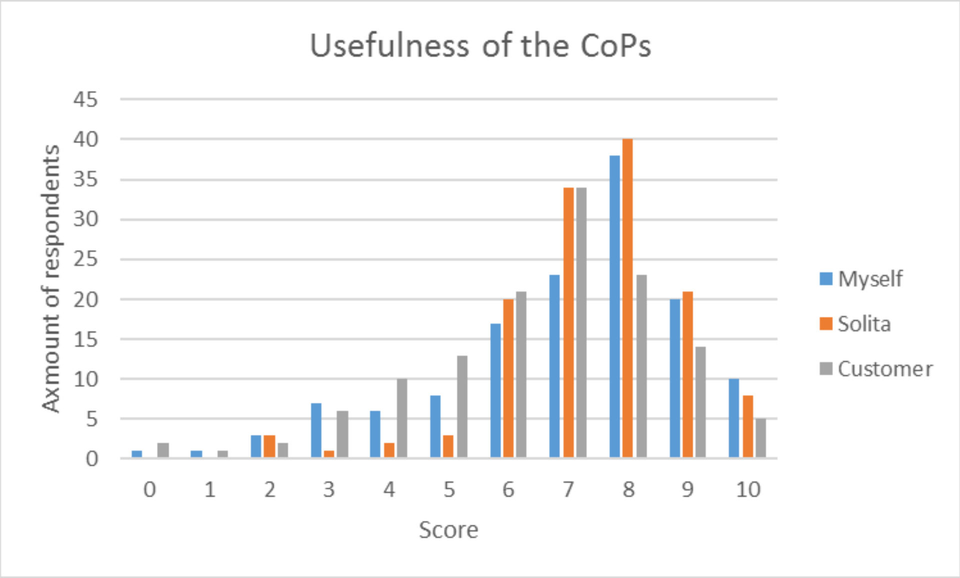

Figure 21, the usefulness of the CoP –concept

CoP –concept was rated quite useful while the median score for every focus group was 7. The average score was 7 for myself, and 6 both for Solita and customer groups.

9.2 Results

The CoP -concept was seen very inspiring and fresh and the attitude in Solita towards CoP concept was good. It was raised in several answers that in Solita there is no need to withhold information from others, on the contrary: people are very enthusiastic on attending CoP activities and sharing their know-how. One clear benefit in CoP approach was raised that it enables deeper involvement than traditional news-flash sessions. CoP approach was evaluated to be quite beneficial for all stakeholders: employee him/herself, Solita and customer.

The fact that whoever can establish a CoP was seen as a good feature of the model. The threshold to establish a CoP is very low which cause that CoPs are created based on a real need which creates concreteness. CoPs are breaking silos and increasing collaboration between different teams and projects. On the other hand, it was seen that CoPs are also creating silos between different CoPs. The know-how resides inside one CoP but no one outside the CoP is aware of its existence. A question was raised how to make sure that the know-how gained inside a CoP, does not remain only inside one CoP. How to create a collective memory?

One clear issue raised from the questionnaire was that support from management seems to be lacking. It has been defined that everyone can use 15 working days for attending CoP activities, but people are not aware what is counted as CoP activity, how to prioritize time usage between customer projects and CoPs and even how to prioritize time usage between different CoPs. Formerly team leaders were responsible of know-how management of his/her subordinates but now when people have individual responsibility of one's know-how management, it is not clear how to do it. Whether to attend a CoP based on individual interest or based on customer benefit? Is it allowed to attend a CoP just to familiarize oneself with a subject and what does attendance of a CoP really mean? When allocated into a customer project full time, is it still allowed to participate CoP activity?

The role and function between CoPs and teams seemed to be somewhat unclear. Some teams had regular team meetings but some teams did not. In several answers there were feeling that one didn't belong to anything. Face-to-face meetings with team colleagues and information about practical issues were missing. Also the role and function of a team manager seemed to be unclear. CoPs don't support nor assist in supporting individual know-how development. Change from push-mode management (team meetings, team manager responsibility) to pull-mode (choose yourself) takes time and effort. Now the general feeling is that too much has happened at one time.

There seem to be somewhat overlapping CoPs. It is seen very challenging to figure out the purpose and the target of a CoP and how it differs from another CoP.

The communication of CoP activities is very disorganized. Although in intranet there is a site for all CoPs, there are no clear rules for communication and even the pages are hard to find. Some CoPs inform about their activities by sending the invitations to all Solita employees and for other CoPs activities are only informed for those who have already attended previous meetings. CoPs have schedule for their actions in the intranet site, but it is quite time consuming to browse and search for individual CoP meetings and its agenda. And even though some CoPs send the calendar invitation companywide, it is seen unclear what is the purpose and target of the activity. So in some level there is too much information but in some level there is too little information, the problem being that it is difficult to have clear, up-to-date picture of the whole landscape what is happening. To be able to use the existing 15 days per year beneficially, it needs some kind of planning and not attending every interesting activity that occurs.

It was stated in multiple answers that the activity and usefulness of a CoP is heavy dependent on the leader of the CoP. If the leader is active and devoted, the CoP is proceeding well. But without devoted leader the whole CoP was not active. Currently the activity is too often based on one's shoulders and the majority of the members are just attending passively. In practice the same persons who are leading CoPs, are also the ones that have the heaviest load on work which creates challenges on time consumption. CoPs where the responsibility of the activities was spread to larger group seemed to be more efficient. Also responsibility of a CoP was raised in several answers. Who should be responsible of the targets and activity of a CoP?

It was seen positively that people can freely choose into what CoP they want to belong, and that the level of involvement is also free of choice. But that was seen to cause also negative impacts: CoP can have many attendants on a paper but most of the attendants are attending only passively to consume information, not to participate in know-how management activities as a producer. That causes that the activity of a CoP relies mainly on few active members. One clear issue that raised in the questionnaire was how to increase activity among all CoP members?

One separate issue for not actively attending CoP activities was lack of time. Because the attendance is participatory, it was seen that the actual work is more important than attending to a CoP meeting. And now when people are self-responsible of allocating their time between customer work (=project work) and know-how management activities, it feels more justified to use the time for customer work.

It was also seen as an issue that person has same allocated time for CoPs regardless of the role in a CoP, no difference whether you are the leader or regular member of a CoP. In practice it means that if you use your time leading or creating content into one CoP, time is away of gaining information from another CoP.

One issue is accessibility of the meetings. Usually those are office-to-office meetings between different Solita office locations and it is difficult to reach the meetings if the person is at customer site. All in all, remote meetings were seeing problematic: it was seen hard to actively participate remotely when the majority of the attendants were at one location. More face-to-face meetings were required.

Also the fact that the meetings are tied into certain time is problematic. If one is not able to attend the meeting, the content of the meeting is unreachable. If the meetings were recorded, it could be possible to view them when one has time. This implies of course only to news-flash type of sessions. Regularity of meeting schedule, same time weekly/monthly schedule, could ease up involvement while the coming events would be known.

Continuity between meetings is missing. Now the sessions even inside one CoP are without interrelation so there is no clear roadmap on developing the interest area.

10 Analysis of CoP –concept in the case department

In June 2016 there is altogether 44 different CoP, in which 7 CoPs are related in Analytics Department area. The activity of CoPs is very low. When the concept was released, the activity was relatively high: constitutive meetings where future actions were planned, but now after 6 six months, the activity has faded: most of the CoPs haven't had any activity in months. Some have still regular meetings, but the outcomes in general have been rather negligible. In this thesis, I will seek the ground reasons for this from which I can formulate development ideas to guide CoP -concept back on track.

10.1 Semi-structured interviews

To gain understanding about the current state of CoP -concept and overall feedback about the concept, I interviewed 5 employees from Solita Analytics department. At the beginning the aim was to interview 10 employees, but after 5 interviews the answers started to repeat themselves, so only 5 interviews were conducted. Interviewees were selected to represent different level of expertise in both Helsinki and Tampere offices, both junior and senior employees were interviewed. All of the interviewees were members of one or more CoPs. Interviews were conducted in Finnish language and the notes were written in Finnish. The notes of the interviews are attached to this thesis. (Appendix 2).

In addition to these interviews, I also interviewed one CoP leader who leads a CoP which is functioning well in terms of activity and value creation. Summary of this interview is described in Chapter 10.3.

10.2 Summary of the interviews

The main finding was that the CoP –concept itself is seen as a positive issue but the implementation of the concept limps: there is confusion about the whole CoP –concept: what the CoPs are supposed to be and what not and what is the expected value from the whole concept. Also the change towards self-organizing know-how management is seen unclear.

Interviewees did not see the difference between teams and CoPs. There was a common perception, that CoPs have replaced teams. Also there were lack of understanding of the role of the team leader, which is also the one who is the superior of employees. Previously, before the CoP –concept, the superior was responsible of person's know-how development, but it was changed so that everyone is self-responsible of their own know-how development. That has caused confusion.

CoPs are mainly seen as communities for information sharing. A CoP activity is typically seen as a session where CoP members are invited and in which a certain subject within CoP's domain is presented. These sessions are seen good: beneficial for spreading information about the subject. But the sessions do not develop the domain: good presentations and discussions about specific subjects, nothing else. And the particular session is beneficial only for those who are invited and able to join the meeting. Before the CoP – concept, information sharing sessions were arranged for all employees, now the feeling is that the sessions are harder to reach while those are held inside CoP meetings. Although one of the main principles is that a CoP must be open for all, it is hard to get an overall view of all available information sharing sessions. Also the fact that the actual work conducted in customer projects is the primary work for everybody which leads that people have a barrier to join a CoP just because of is interested to hear about the subject.

The functionality of a CoP is strongly dependent of its leader. If the leader is devoted and has time, the CoP is functioning well, but without that, the CoP will diminish. Typically, the leaders are also the ones with heavy workloads, so that may be the reason for current situation where CoP activity is too low. To start a CoP self-imposed and lead it beside the normal work, seems to be too heavy.

It was seen in the interviews that people are really interested on receiving information about executed projects, market trends and such but did not consider themselves as information givers. And even the senior ones stated that they are always ready to help when asked, but they don't want to obtrude.

The domains of the established CoPs are unclear. There are CoPs which domain is very wide. That causes confusion about the actual know-how the CoP should foster. People participate the CoP while they "have a feeling" they should participate but the lack of focus causes lack of interest among its participants. There are also CoPs which domain is very specific. Those could be good to enhance the domain, but the fact that everyone can join CoP meetings leads to situation where mixed level of expertise attend to a CoP meeting: some just to listen and learn, and some to elaborate the subject. When people with mixed level of expertise attend to a CoP meeting, the meeting does not benefit anybody. For "listen and learn" people the subject goes too deep and for elaborators the subject stays too trivial.

Another issue with CoP domains is that the ones having wide domain, overlap with CoPs having specific domain. Communication between different CoP's rely only on people taking part in both CoP's.

There is lack of strategic direction and ownership: there is no management nor guidance on what areas CoPs should be established. That leads to situation where some focus areas do not have CoP at all. That is because CoPs are established on voluntary basis and for some areas, there has been no one to establish a CoP.

One issue raised in interviews was also that when everyone in a CoP is "equal", it may have impacts in decision making, e.g. when creating best practices and common guidelines. Analytics department has a strong culture of independency and trust in people: people know what they do and if they need help, they ask. That has worked out in the history when the department was relatively small and there were not so many projects. Now when there is an urge to start creating best practices and common guidelines so that every project doesn't need to start from scratch, it is not easy since there are many "right answers". When no one is responsible for the end results, it is easier to continue "as is" than try to reach the consensus. Another factor in this is, that because the participation is totally on voluntary basis, not all people who have required know-how and therefore should attend the CoP, do so. This leads to situations where although common guidelines are being established, not all are aware of those. And because all have not participated on creating the practice, there is lack of commitment.

So there can be seen three (3) root causes for the CoPs not functioning in Analytics department

- obscurity of the concept itself
- lack of strategic guidance
- confusion about involvement and membership

10.3 Analysis of a CoP which is proceeding well

Data Scientist community was selected to be an example CoP where process seems to work. Characteristics of this CoP is that it is also its own team with its dedicated team leader. The team have a strategic day with the whole group twice a year were the purpose and goals of the team is set for next six (6) months. After the strategic day every team member has common understanding where they should be going and their role and responsibility in accomplishing the goal. Also concrete tasks are created to support the set goals. In between strategic meetings, the progress is evaluated regularly in team meetings where members share their status, possible barriers to proceed with assigned tasks and other issues that may interest others. In a case where a person is not able accomplish his/her tasks, e.g. because of lack of time, team leader as one's personal manager has authority to arrange time (prioritize work) or assign the specific task to somebody else.

Team leader, together with her team members assign members to other CoPs depending on their interest profile and available CoPs. In team meetings, members share what they have learned in other CoP meetings and that way explore the knowledge to all members of this team.

The team has an active collaboration channel were team members support each other's, share best/worst practices, inform about news from outside world etc. Whoever can join the channel, but team members are responsible to contribute when other may do so voluntarily.

In addition to regular team meetings, the team leader is responsible for arranging also news-flash sessions for all case company's employees. These meetings are called Community of Practice meetings. The focus in these meetings is to share knowledge companywide which are typically about new products, conducted projects, learned lessons.

11 Recommendations

11.1 Big picture

The target for CoPs in Solita is to develop the know-how and operations in order to faster produce value for its customers. The connection between the strategy of the case company and the CoP –concept is unclear. At the moment whoever can establish a CoP, but shouldn't CoPs be established based on the competencies and knowledge required to fulfil company's strategic needs now and in the future?

The picture below illustrates my proposal for know-how development in the case company. It is based on earlier described frameworks of Communities of Practice, Lean IT and Holacracy, as well as read theory literature mentioned earlier in this study.

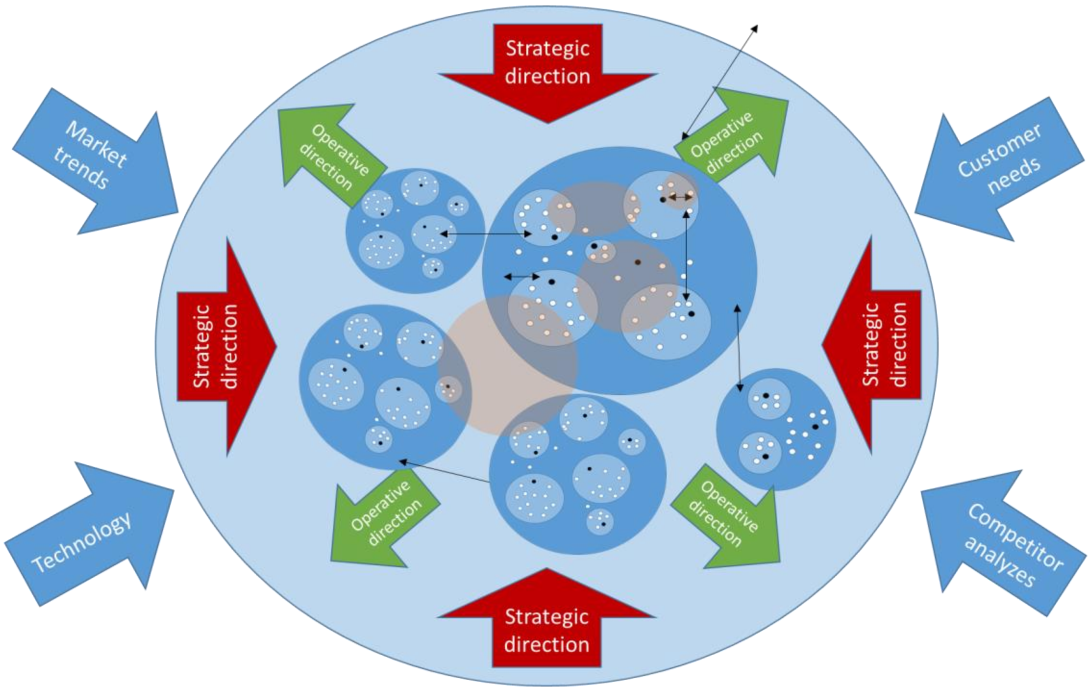

Figure 22, Know-how development model

The big circle represents the whole case company. It gets information about customer needs, as well as signals such as competitor analyses, market trends and technology innovations. Those should steer the strategic direction the company is going. Operative direction should come from employees, from the people who are working on the field and doing the actual work. Employees need to be able, but also willing to share improvement ideas for steering the direction.

Inside the big circle, the smaller circles represent the functions the case company has. Functions should be high level competence areas as well as e.g. finance. Currently company has four (4) different departments, where Analytics department is one. These departments can act as functions.

Inside department, these are even smaller blue circles. Those represent the core competencies the company possess and needs to cultivate. Current team structure mainly follows this structure while teams are established based on certain competence(s).

Light red circles represent different kind of CoPs. There should be CoPs based on roles as well as topics. Role based CoPs are the ones where the target is to develop common practises, establish rules and guidelines, share know-how on projects, experiment new technologies etc. Role based CoPs can and should be established inside teams but also between teams and even departments where the role of members is similar. Topic based CoPs are ones where the target is to develop the business, innovate new possibilities the company could offer to its customers. These CoPs should be established between different competencies and consist of members with different roles.

No unit can be isolated from its outside world, communication and information sharing needs to happen in all levels, between teams, between departments, between different CoPs etc. Mechanisms for information sharing need to be established

11.2 Recommendations for CoP –concept development

After the interviews three (3) root causes for the CoPs not functioning in Analytics department were identified. Those were

- obscurity of the deployment of the concept
- lack of strategic guidance
- confusion about involvement and membership

Obscurity of the deployment of the concept

The purpose of the CoP –concept need to be sharpen. If employees don't have a clear understanding, why and for what purpose CoPs are and should be established, it is no wonder, CoPs start to fade away. Departments, operational teams, project teams, communities of practice, communities of interest and informal networks all have their unique role and responsible. There need to be known dissociation between teams and CoPs, as well as other units. Wenger et al. has separated different organizational structures as follows.

	WHAT'S THE PURPOSE?	WHO BELONGS?	HOW CLEAR ARE THE BOUNDARIES?	WHAT HOLDS THEM TOGETHER?	HOW LONG DO THEY LAST?
Communities of Practise	To create, and exchange knowledge, and to develop individual capabilities	Self-selection based on expertise or passion for a topic	Fuzzy	Passion, commitment, and identification with the group and its expertise	Evolve and end organically (last as long as there is relevance to the topic and value and interest in learning together)
Formal Departments	To deliver a product or service	Everyone who reports to the group's manager	Clear	Job requirements and common goals	Intended to be permanent (but last until the next reorganization)
Operational Teams	To take care of an ongoing operation or process	Membership assigned by management	Clear	Shared responsibility for the operation	Intended to be ongoing (but last as long as the operation is needed)
Project Teams	To accomplish a specified task	People who have a direct role in accomplishing the task	Clear	The project's goals and milestones	Predetermined ending (when the project has been completed)
Communities of Interest	To be informed	Whoever is interested	Fuzzy	Access to information and sense of likemindeness	Evolve and end organically
Informal Networks	To receive and pass on information, to know who is who	Friends and business acquitances, friends of friends	Undefined	Mutual need and relationships	Never really start or end (exist aslong as people keep in touch or remember each other)

Figure 23, Distinctions between Communities of Practise and other structures, (Wenger et al 2002, 42.).

At least in the Analytics department the purpose of particularly Communities of Practice and Teams are fuzzy, and Communities of Interest do not exist as an organizational structure. Here is my recommendation for different structures and their purpose.

STRUCTURE	PURPOSE
DEPARTMENT	To be responsible of the activities of one business unit
TEAM	To take care of operations inside one competency area.
COMMUNITIES OF PRACTICE	To create, maintain, develop, and exchange know-how
COMMUNITIES OF INTEREST	To share, and inform know-how

Figure 24, Structures for the case company's Analytics department

Department

Currently teams do not belong to the Analytics department, although the operations they are serving are all, or at least mainly, for Analytics department. My recommendation is to move the teams under Analytics department. This would ease up the chain of command, setting the vision and core competencies to guide the operations.

Team

The main responsibility of a team should be to act as a base unit, a home, for employees. The company is growing all the time, and employees need to have a place where they belong. Teams are already set to serve specific competency areas. Because team leaders are superiors for his/her team members, when the amount of members in one team grows too much, it is justified to split the teams inside one competency area. The role of the team leader should be sharpen. Of course every team leader has his/her own style, but the role and responsibilities should be the same. Although the aim is to have self-organizing teams where everybody is responsible of his/her know-how management, the team leader should be the one to give guidance and feedback, as well as personal targets for its subordinates, in order to ensure everybody is reaching towards same vision, the vision that the department has. Without set targets, employees don't know what is expected from them.

Communities of Practice

The domain, the practice, and the community of a CoP needs to be defined more carefully. Currently whoever can establish a CoP, under defined circumstances, but there is no acceptance procedure against e.g. the vision of the company or the department. This leads to situation where CoPs will be established without strategic guidance. The most successful CoPs are those in which the goals and needs of an organization intersect with the aspirations of participants. (Wenger et al. 2002, 30)

One cornerstone in the case company is, that a CoP must be open for all. CoPs need to have criteria for membership, in order to have a baseline for the know-how the CoP is fostering. Without the baseline, the CoP lacks of common language and ground, which in turn makes the CoP inefficient.

And finally, a CoP cannot serve every purpose around the domain. The domain will set the subject area, but the primary intent must be set to specify on what perspective the subject area will be approached. If a CoP is about to serve all kinds of needs around the domain, it will overwhelm its members. (Wenger et al. 2002, 74). So different CoPs need to be established for different kinds of primary intents. Some CoPs should be established to keep current know-how up-to-date while some should have more innovative approach within the same domain. I recommend this approach heavily, since this would also tackle the issue that there are different kind of personalities in the organization. Employees who are more drawn to new ways of working, have innovative approach and like to experiment new technological capabilities can join CoPs having that primary intent while the ones who are more 'old fashion' type, who like to do what they do, can join CoPs in which the primary intent is to maintain the current know-how up-to-date.

Community of Interest

Communities of Interest (CoI) does not exist as a structure in the Analytics department, but in a sense the way CoPs procedure at the moment, those are more like CoI's than CoP's. Therefore, I recommend that a structure of CoI should be established and the difference between a CoI and a CoP need to be defined. When CoPs should be established to actively develop its domain, a CoI should be the structure to inform about topics around specific area. It should be responsible to give news-flash sessions, updates of activities on that area and to share common guidelines and practices. And CoI's should be open for all. Whoever is interested on the subject the CoI is serving, should be able to receive information about that subject. This would leave room for CoPs to have criteria for membership and to pursue for active involvement.

By defining these structures and the expectations from the employees, the purpose of not only the CoP concept, but the whole know-how management as a whole should be clarified.

Lack of strategic guidance

The mission for CoP's is to develop know-how of its members. A CoP need to have added value for the customers of the case company, for the case company itself and for the employees of the case company. So the know-how the CoP should develop, cannot be just any know-how, it must be something that fits to the company's strategic goals, it must be something the company sees as a core competency, something that is worth of investing in order to create competitive edge. Therefore, there should be mechanisms to ensure that the reason for CoPs existence is justified. While employees are using their time and effort in CoPs, it should be somehow ensured that the time and effort is well spent, it is creating values. Additionally, if the domain of a CoP lacks strategic relevance to the organization, the CoP will be marginalized, which in turn will cause lack of commitment within its members (Wenger et al. 2002, 30).

I recommend that the management of the Analytics department sets the strategic vision for Analytics department together with its employees. The vision can and will be shaped within time, the most important thing is to have a vision that everybody in the organization shares. The vision should have clear ownership, somebody who makes the decisions in order to fulfil the vision. Because Analytics department is rather big organization (>100 employees) the vision should be split into smaller, more tangible pieces. Those pieces should have clear ownership as well. Within the vision, every employee in Analytics department should know their role and responsibilities to achieve the vision. After that employees can be self-organized while they are aware what is expected from them.

Confusion about involvement and membership

Currently participation in CoP activities in Analytics department, has been rather passive. This may be due lack of time, but also lack of comprehension what the CoPs are and what is expected from participation. Mostly people seem to think that CoPs purpose is to be information channel for its members, not a place where oneself should actually do something. In previous chapters, I recommended to have clear strategic vision where the CoPs should be based on, and set roles and responsibilities for individuals. Also the ways of working inside a CoP and the primary intent of a CoP, should clarify the reason for existence of a CoP. This actions should lead to more active participation while employees know what is expected from them and also what is expected from a CoP.

But that is not enough. At the moment, there is confusion what a membership in a CoP really means. There is a CoP leader, in some (rare) cases several leaders, but others are just participating CoP activities, which in the majority of the cases are info sharing sessions about some subject. The overall activity (what is happening and when) is totally on the shoulder of the leader(s), if he/she has time, the CoP has activities, when not, the CoP will fade. So, I recommend to establish different level of participation.

CoP activities can not totally be voluntary, someone needs to be responsible of it and have mandate to make it work. When a CoP is formed, the purpose of the CoP and the added value that the CoP will produce, need to be described. It cannot be only the leaders' responsibility, to achieve in set goals, there should be other committed members as well. There should also be somebody, preferably the owner, who can prioritize the work of an individual in case of time allocation conflict and take responsibility of the consequences.

Wenger et all define three (3) levels of participation: core group, active, and peripheral.

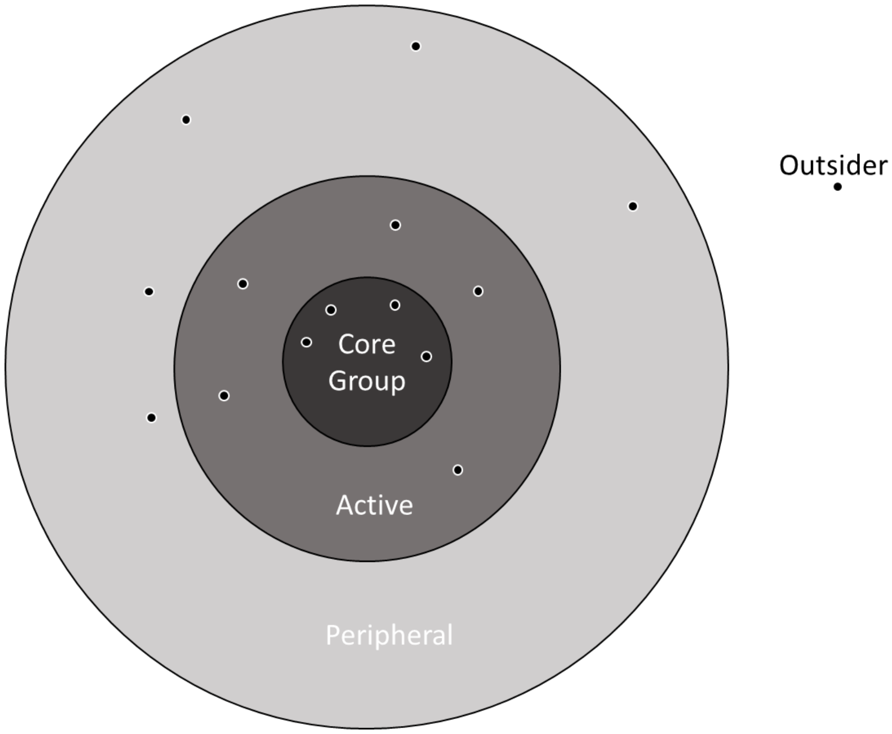

Figure 25, Degrees of community participation (Wenger et al, 2002, 57).

Every CoP should have a core group who leads, organizes, charters, markets, nurtures and operates the community. So instead of having one leader, there should be several of them. I recommend that the core group is formed together with the owner of the area the CoP will nurture. The owner should prioritize the work when necessary, and the owner should be the one ensuring the CoP meets its targets. Core group members should have designated allocation of time to be used for CoPs activities. Based on allocated time and resources, the core team promises what they can deliver, and naturally the core team is then responsible that they deliver what they promise.

Active members are members who actively participate in CoP activities, but do not as intensively as core group. They can for example be responsible of a specific task, or be dedicated to review documentation/code developed in the CoP.

A large portion of community members are peripheral. They are individuals who keep to the side-lines, watching the interaction of the core and active members. This may be due lack of time or that the person does not feel comfort to attend yet, but is still dedicated to the subject and maybe in other circumstances will shift into active or even core member.

Members may shift between different degrees of participation. But the shifts need to be controlled. In a business where majority of the work is done in customer projects, the amount of time one has is situational: one may be 100% occupied but after a while only 50% and there may be also ‘between projects’ times where the allocation is 0%. If a person has promised something, but is not able to deliver due e.g. changes in resourcing, it needs to be managed: either CoP targets are to be reduced or somebody else from the organization should take responsibility of the tasks.

12 Conclusions

The conclusions on the research results for CoP –concept suitability for the case company know-how management are discussed in this chapter.

This research was conducted as a case study for Solita, digital business service company. In September 2015, the case company had released a concept of Communities of Practice (CoP). The CoP –concept embodies two main areas

- Community of Practice as a know-how development unit
- Self-organizing as a responsibility of know-how development

This study was started after six (6) months of CoP concept release. The aim for this thesis is to figure out whether the introduced CoP –concept is feasible way of managing know-how development and if so, how the concept can be reinforced. The objective of this study was to investigate how the CoP –concept is functioning in practice and what are the biggest challenges in this area.

The current know-how management and CoP –concept practices were evaluated by

- analyzing questionnaire answers conducted for all Solita employees
- interviewing employees in the case company selected department (Analytics)

The research questions of the study were:

- Is the Communities of Practice -concept feasible way for know-how development management?
- What are the biggest pains in applying CoP in the case company?
- What are the best pain relievers in applying CoP in the case company?

Is the Communities of Practice -concept feasible way for know-how development management?

Yes, the CoP –concept is a feasible way for know-how development management. While the case company is growing rapidly, new employees have been hired only this year (2016) over 100, and at the same time the business that the company is in (digital service business) is constantly evolving, there must be ways to manage know-how development. Therefore, the goals for case company’s know-how management are

- Scalability: opportunity to scale without increasing bureaucracy and corporative structures
- Agility: possibility to shape Solita know-how more towards customer needs
- Individuality: increase opportunities to enhance individual knowledge
- Simplicity: Simplify ways of working to enable versatile means to develop know-

The CoP -concept can in theory enable the company to reach its goals. The concept is very flexible and while it is not tied in any organizational structures, it stands time. CoPs do not flourish without nurturing, but with support from the management, devoted employees and well-though concept itself, the CoP –concept is really good way to manage know-how development. The CoP –concept is described more detailed in Chapter 5.

The culture in the case company is very open and employees seem not to have any necessity to withdraw information. On the contrary, employees were very enthusiastic towards to CoP –concept itself. And the way the employees has given the power to decide what are the subjects (domains) on what CoPs should be established, praises Lean principle respect for individuals. Lean principles are described more detailed in Chapter 6.1

One way to foster know-how development is to use Holacracy type of structuring. Holacracy is described more detailed in Chapter 6.2.

What are the biggest pains in applying CoP in the case company?

This question is answered in Chapter 11.2. more detailed. The main finding was that even though the CoP –concept was seen very positively and as a transparent and feasible way to manage know-how by the employees, the reality was that the concept was not functioning. After the interviews three (3) root causes for the current situation were identified:

- obscurity of the deployment of the concept
- lack of strategic guidance
- confusion about involvement and membership

Obscurity of the deployment of the concept

Employees are unsecure what CoPs are, and how do those relate to other organizational structures. If employees don't have a clear understanding, why and for what purpose CoPs are and should be established, it is no wonder, CoPs are not functioning.

Lack of strategic guidance

Although it is good idea that employees, the ones who are doing the actual work, can decide what kind of CoPs are needed, lack of strategic guidance leads to situation where CoPs are established based more on personal interests of individuals than company's goals. That itself creates obscurity of the CoP –concept, but also leads to situation where there are overlapping CoPs and areas that don't have CoP at all.

Confusion about involvement and membership

It is not clear what a membership in a CoP means. Is one a member after participating a meeting or does being a member require something more, and if so, what more? Employees are not aware what is expected from them, and while everyone is self-responsible of their own know-how development, involvement in CoP activities is not seen as a responsibility. That leads to situation where people like to participate in the CoP meetings, but they do not see themselves as active members of the CoP, which in turn lead to passive involvement.

What are the best pain relievers in applying CoP in the case company?

This question is answered in Chapter 11.2. more detailed. Here are the best pain relievers for the biggest pains. The biggest pains in applying CoP in the case company were identified:

- obscurity of the deployment of the concept
- lack of strategic guidance
- confusion about involvement and membership

Obscurity of the deployment of the concept

The purpose of the CoP –concept need to be sharpen, together with the purpose of the other structures: department and team. In addition, one more structure, Communities of Interest should be established. By clarifying the role of these structures, the purpose of not only the CoP concept, but the whole know-how management as a whole, would be clarified. The purpose of the CoP –concept should be to create, maintain, develop, and exchange know-how.

Lack of strategic guidance

The target for CoPs in the case company is to develop the know-how and operations in order to faster produce value for its customers. Strategic guidance is required to steer on what to concentrate and on what extent. The business is constantly changing and at the same time as the company is conducting business as normal today, it needs to be awake on what is happening on the market, in order to be able to stay on the business in the future. The required know-how needs to be defined and to be able to manage the required know-how, core competencies of the company should to be defined. CoPs should be established based on the core competencies. It is good that employees, the ones who are doing the actual work, can determine what kind of CoPs are established, but there needs to be strategic guidance to define on what subject areas the CoPs should be established.

Confusion about involvement and membership

Everyone is self-responsible of their own know-how management, but without strategic guidance employees are not aware what is expected from them. Based on the core competencies of the company, the roles and responsibilities should be set as well as individual targets. When employees know what is expected from them, they can more self-organized act based on their responsibilities. Also the terms of membership need to be defined. Members must be committed to the domain, without commitment a community is just a group of people. Due to the nature of the case company's business, different level of participation must be allowed and members need to be able to shift between different levels depending their resource allocations to customer projects. And finally, there should also be somebody, preferably the owner, who can prioritize the work of an individual in case of time allocation conflict and take responsibility of the consequences.

References

Alan Frost, 2010, *Introducing Organizational Knowledge.* [online] Available at <http://www.knowledge-management-tools.net/introducing-organizational-knowledge.html#ixzz4DjOtbpUA> [Accessed 18.7.2016].

Bell S, Orzen M. 2011. Lean IT: Enabling and Sustaining Your Lean Transformation. CRC Press. New York. United States.

Brown J, Duguid P. 2000. Balancing Act: How to Capture Knowledge Without Killing It. Harvard Business Review May–June 2000 issue.

Disciplined Agile 2.X, 2016, *Communities of Practice (CoPs)*. [online) Available at <http://www.disciplinedagiledelivery.com/people/communities-of-practice> [Accessed 13.7.2016].

An Encyclopædia Britannica Company, 2016, Merriam-Webster. [online] Available at <http://www.merriam-webster.com/dictionary> [Accessed 18.7.2016].

Erickson, F. 1987. Transformation and school success: The politics and culture of educational achievement. Anthropology and Education Quarterly. 18 (4) 335 – 356.

Etienne and Beverly Wenger-Trayner, 2015, *Introduction to communities of practice.* [online] Available at <http://wenger-trayner.com/introduction-to-communities-of-practice/> [Accessed 11.6.2016].

Girard J, Girard J. 2015. Defining knowledge management: Toward an applied compendium. Online Journal of Applied Knowledge Management. A Publication of the International Institute for Applied Knowledge Management. Volume 3, Issue 1, 2015.

Hislop D. 2009. Knowledge Management in Organizations, second edition. Oxford University Press. New York. United States.

Holacracy Backstory, 2016, *Holacracy Backstory.* [online] Available at <http://www.Holacracy.org/backstory> [Accessed 5.5.2016].

Holacracy Constitution, 2016, *Holacracy Constitution.* [online] Available at <http://www.Holacracy.org/constitution> [Accessed 5.5.2016].

Ind N, Watt C. 2004. Inspiration, Capturing the Creative Potential of Your Organization. Palgrave MacMillan. Hampshire. Great Britain.

Ivy Wigmore. 2015, *Holacracy.* [online] Available at <http://whatis.techtarget.com/definition/holacracy> [Accessed 4.5.2016].

Kelley B. 2010. Stoking Your Innovation Bonfire. John Wiley & Sons, Inc. New Jersey. United States.

Laakso-Manninen R, Viitala R. 2007. Competence management and human resource development. Haaga-Helia Research 1/2007. Helsinki.

Lean Enterprise Institute, Inc., 2016, *What is Lean.* [online] Available at <http://www.lean.org/WhatsLean/> [Accessed 18.7.2016].

Learning-Theories.com, 2016, *Social Learning Theory (Bandura)*. [online] Available at <http://www.learning-theories.com/social-learning-theory-bandura.html> [Accessed 18.7.2016].

Peltokorpi V, Tsuyuki E. 2006. Knowledge governance in a Japanese project-based organization. Knowledge Management Research & Practice (2006) 4, 36–45.

SAFe, 2016, *Communities of Practice abstract*. [online] Available at <http://www.scaledagileframework.com/communities-of-practice/> [Accessed 13.7.2016].

Saunders M, Lewis P, Thornhill A. 2009. Research methods for business students, fifth edition. Pearson Education. Harlow. England

Solita, 2016, *Solita Lyhyesti*, Available at < https://www.solita.fi/yritys/#solita_lyhyesti> [Accessed 27.02.2016].

WebFinance Inc, 2016, *Business Dictionary.* [online] Available at http://www.businessdictionary.com/definition/learning-organization.html [Accessed 18.7.2016].

Wenger E. 1998. Communities of Practice: Learning, Meaning, and Identity. Cambridge University Press. United States.

Wenger E, McDermott R, Snyder W. 2002. Cultivating Communities of Practice. Harvard Business School Press. Boston, Massachusetts.

Wenger E, Snyder W. 2000. Communities of Practice: The Organizational Frontier. Harvard Business Review. Jan/Feb2000, Vol. 78 Issue 1, p139-145.

Wikipedia, 2016, *Hackathon*. [online] Available at <https://en.wikipedia.org/wiki/Hackathon#cite_note-the_hackathon_is_on-1> [Accessed 26.8.2016].