Proactive Review: Towards an Emerging Middle-Range Theory of Learning from Experience in the Context of Work

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Abstract. Many organizations today require continuous development and effective learning processes to meet the challenges of globalization and digitalization. In this seven-year study, we investigate a learning practice as an integrated part of work in a global IT company. Based on the empirical data, we aim to develop a middle-range theory for learning from experience in the context of work. The middle-range theory is suggested as an organizational learning spiral that considers critical ontological dimensions as well as critical starting points for how and when such an intermediate model might be applicable. We hope to contribute to research on learning in the context of work and further research is needed in order to determine the usefulness of this middle-range theory.

Keywords: Learning practice, working practice, proactive review, organizational learning spiral, longitudinal study, global IT company.

1. Introduction

Today, both organizations and technologies are undergoing fundamental changes that transform and create new challenges in the ways we work and learn. In response, researchers on organizational learning have developed theories, like expansive learning and communities of practice, in order to account for such dynamic and emerging concepts [1,2]. However, previous research and theories do not adequately address how, in practice, organizational members bring the apparently concurrent practices of working and learning together into a complementary whole new practice. There is a need for investigating organizational learning in more detail, accounting for both the fundamental premises of previous theories as well as the specifics of learning practices taking place in organizations today.

The point of departure of this study is the practice of how to initiate and maintain learning from experience in the context of work. This became the foundation for the establishment of a learning practice that we called *Proactive Review* (PR). Based on this learning practice, we explore the possibilities of an emerging middle-range theory (MRT) that we called the *organizational learning spiral* (OLS). The research question is: How does a learning practice in a global IT company become a working practice as well as a middle-range theory?

We developed and researched PR through a series of iterations from 2005 to 2012 in a global IT company. In this particular organization there existed many challenges. The company constantly introduced new markets and customers, new products and services, and new working tools. There was a need to avoid falling into the same pitfalls, avoid reinventing the wheel again, to learn from experience in order to repeat successes, and to learn "organizationally" [3]. A new learning practice was needed, one that would support the business to improve efficiency and effectiveness. Hence, the organization opted for a more prosaic driver of change: to introduce PR as a learning practice in the actual work practice.

The on going changes made it necessary to utilize a flexible research method, and the study combined mainly qualitative data types for in-depth and holistic analyses. Consequently, this part of the study may be seen as a case study [4]. The research approach was both inductive and deductive, going from theories to practice and developing new practices and theories.

The results contribute to research on organizational learning by exploring how a middle-range theory (MRT) can be used as an intermediate model between fundamentals of organizational learning and practice theories and the empirical findings from a new established learning practice at work in a global IT company. We combine and further explore the knowledge found from the learning practice of Proactive Review [5,6] along with the development of the organizational learning spiral [6] in order to present an emerging Middle-Range Theory.

2. Theoretical Foundation

The first step in forming this middle-range theory was to conduct a literature study. The main literature used for this was within learning theories [1], [5], [7,8] and practice-oriented concepts by Gherardi's work [9,10] followed by concept found in technology in practice literature, e.g. [11,12,13].

Because the theory development takes place at the middle range, multiple theoretical perspectives can be used to explore the intertwined relationship between central aspects of both working and learning practices without restriction to one single perspective. Hence, we start with our understanding of a middle-range theory.

2.1. Middle range theory

A middle-range theory has the possibilities of focusing on a subset of phenomena relevant to a specific context. In contrast to a "grand" theory, which is by nature broad in scope and more abstract, a middle-range theory is more concrete and applicable for empirical studies. Such theories might start from empirical studies and consequently generalize constructs from those. Also, a middle-range theory might play a role of bridging general theories to empirical research [14]. They draw on Weick's work [15] when arguing for having the key constructs in a theory manageable and applicable. The interplay between the grand theory and the actual empirical setting is facilitated by a middle-range context of discovery and justification. They [14] show how a middle-range theory can both formulate and interpret empirical findings, and can verify and consolidate general theories.

2.2. Learning theories

Learning in the context of work may be perceived as "an on-going social accomplishment, constituted and reconstituted in everyday practice" in which at least two perspectives are included [16, p. 252]. Firstly, social accomplishment means that learning is regarded as a social activity, secondly a practice perspective; both are foundations for learning theories developed by [2] and [17], who in turn present expansive learning as a process "in which the practitioners acquire a new way of working while designing and implementing the new practices themselves." [17, p. 30]

The expansive learning process is initiated by questioning the existing practices in order to uncover internal conflicts or contradictions. The learning process is collaborative, and the key actions are questioning, analysing, modelling, examining the model, implementing, reflecting on and evaluating the process of learning, and consolidating and generalizing the outcomes [1,18].

The spiral is a common metaphor used to describe learning as a practice-based social activity [1], [5], [7,8]. They [8] present a spiral that includes four ontological dimensions, namely individual, team, organizational and inter-organizational knowledge creation. Looking into the individual learning based on interactions with the world, while [7] presents a spiral for learning when interpreting Dewey's description of individual reflective thought and actions. Looking into team learning, [1] and [18] describe expansive learning as a spiral.

2.3. Practice theories

Collective reflections enable the development of new practices, and these collective reflections are based on interactions that take place during the activity. We create ways of learning in practice in the very process of contributing to making that practice what it is [2].

A working practice is a common way to do things, developed by practitioners. The development makes them knowledgeable practitioners who know what work to do and how to do it [10]. The development of working practices affects the practitioners' way of doing and the meaning of work. Hence, working practices are not constant. On the contrary, they develop over time, which initiates dissent and conflicts or agreement and alignment amongst the practitioners [10]. The context is important to take into consideration when new practices are required. The context includes the physical surroundings, the historical background, social aspects as relationships among people, and activities and tools [19], [1], [10,11]. Consequently the context and its relation to technology deeply affect the development of new practices.

2.4. Technology in practice

The support of various practices is a process where purpose and wanted effects must match the functionality and features provided [12,13]. Consequently there is a need to look into how the technology affects the practice, in this case how the technology affects the learning practice.

In this study we want to show how the technology use evolved over time, and how it was transformed into a new practice, i.e. a learning practice called Proactive Review. According to [11] and [16], technology is an intertwined process derived

from both the purpose of the actual design and the effect of use. Rather than choosing a technology and letting actors examine its appropriateness and embodied structures, She [16] argues for an enactment process where an examination of the technology enacts emergent properties through recurrent use and interaction with the technology at hand.

When employees are geographically dispersed they utilize technology for cooperation, i.e. for maintaining and developing working practices [20], [10], [21]. When the practitioners rarely meet and they cooperate online, the technology frames the collaboration [20].

3. The Need for a Middle-Range Theory

The literature review revealed that theories related to organizational learning (where practice and technology take a central part) did not provide an applicable theory for learning from experience in the context of work [22,23]:

> *An important aspect of organizational learning and knowledge sharing studies has been based on the idea that through knowledge sharing between individuals Organizational learning will occur. However, clear explanation of the process is not available* [23].

We saw an opportunity to fill out this gap with a middle-range theory to assess and refine. In a middle-range theory it is also possible to focus on a subset of properties and to integrate a combination of aspects relevant for the particular purpose. This study will be based on a spiral as a metaphor for learning, and an awareness of three ontological dimensions in a learning practice, namely individual learning, team learning, and organizational learning.

4. Methodology

This study includes the interplay between phenomena of organizational learning in one organization and general theories of learning and practices in organizations. The goal is to generate proposals for establishing new learning practices as well as a middle-range theory. Thus, we aimed for a construction of middle-range theory from both empirical evidence and current literature. Consequently, we applied inductive and deductive reasoning in an iterative process.

During the empirical study, we seek to understand a process, taking place over 7 years, where many variables and nuanced descriptions were of deepest interest rather than individual measuring points. Accordingly, a case study was the suitable methodology [4]. In such an approach we relied on multiple sources of data.

One of the authors had the role of Manager of Organizational Learning in the global IT company from 2005 to 2012, with the responsibility of developing and implementing a new practice for learning from experience; the result was PR. Her role enabled her to engage in PR from the very beginning of the development of a learning practice through a number of development iterations over 7 years. She had access to internal data that would not be accessible to an outside researcher [24]. Additionally, this author left the global IT company in 2012, so she is now an

independent researcher [25]. The other author was introduced later in the research process. She acted as a reflective facilitator in order to qualify what to further explore, analyze and reflect upon. The many years between the data collection and the use of data in this study reduces bias.

4.1. Empirical setting

The researched company was a global IT business to business company delivering hardware, middleware, and software to market leaders of banking, transportation, healthcare etc. [3]. In this paper the real name is anonymized and the company is called 'the global IT company'. In 2011, the company had about 108,000 employees and revenue of 36.7 billion US dollars over 12 months. The same year, the IT company in EMEA had approximately 30,000 employees in more than 40 countries. From 2005 to 2011, the strategy of the global IT company changed from being a multinational company with local organizational entities in the countries to being a global company with global lines of business, where the employees worked in teams with members from more countries, managed online. During the same period, more than 60 companies were merged into the IT company, including a vast number of new employees, as well as new products and services. The aim of this organizational development was to increase the company's market share. This organizational development made it increasingly important to collaborate online, to learn from experience, and to collaboratively learn online; Proactive Review was developed accordingly.

4.2. Data collection

Over the years primarily qualitative methods were utilized, but quantitative data became also available. In the beginning the focus was on qualitative data for receiving feedback on the immature learning practice; later there was also access to quantitative data to follow up on objectives in annual reports.

Table 1. Data collection from the 7 years of development of Proactive Reviews.

Qualitative	Year->	2005	2006	2007	2008	2009	2010	2011	2012	Sum
	Diaries	2								2
	Future workshop				1	3	1	1	1	7
	KM Leads chat		4	4						8
	Unsolicited feedback		3	8	4	2	2	5	5	29
	Manager interview	2	2	1	1	4	9	13	22	54
	Facilitator interview	3	2	4	2	1	2	26	4	54
	Participant interview	2	1	1		1	2	5	2	14
	Proactive Review	4	5	4	6	5	7	3	2	36
	PR-community call	2	9	10	6	4	4	5	3	43
Quantitative										
	Annual reports				1	1	1	1	1	
Facilitators	F2f course		9	12	9	4	4	5	2	45
	Online course						5	6	6	17
	Community members		78	183	221	343	120	143	174	
Proactive Reviews	Number of countries	4	8	21	24	31	37	39	43	
	Reported PRs	2	4	89	-	-	49	67	87	
	Mng. challenges								28	

Table 1 shows the scope of Proactive Review and its usage. In addition to these figures, the interviews with facilitators, middle managers, and top managers revealed

further information about how PR had become an integrated part of the company internally, as well as part of their customer network.

5. Proactive Review as a Learning Practice

The point of departure for this middle-range theory to be developed was an organizational development process that took place in a global IT company. New requirements for organizing the work as well as new challenges for keeping competitive advantages initiated a development process of acting more proactively. The development of Proactive Review started as an iterative and ongoing process of experimentation and refinement. Iterations were tested in practice in order to explore suggestions for further refinement. The learning practice was built up by facilitation of resources and roles in order to answer questions and share experiences for improvements of business.

5.1. Iterations in the development of Proactive Review

As our aim is to understand how the learning practice was shaped and changed over time in order to be an established working practice, we looked into the iterations in the development process. Table 2 gives an overview of the most influential iterations of the development of Proactive Review from 2005 to 2012.

Table 2. The most influential iterations in the development of Proactive Reviews

Year	Iterations of development	Initiator	Technology
2005	From AAR to PR, Pilot	Top management	Face to face
2005	Training facilitators	Manager org. learning	Face to face e-mails
2006	Establishing the PR facilitator community	Manager org. learning	PR web site accessible for facilitators Web conferences
2006	Part of internal Knowledge Management web site	Manager org. learning	Web site; accessible for all employees in the global IT company
2006	PR-Blog	Manager org. learning	Blog with PR related stories, questions and comments. New stories every second week.
2007	Sponsor responsibilities	Manager org. learning	Web conferences Cross collaboration definition Blog story
2008	PR application	Top management	Requirement specification, Database, access limitations, report generator
2008	Management challenges	Top manager	New application for proactive review including repository for action and communication plans, management

			challenges, access limitations
2009	Online PR	Facilitators	Social media (facebook groups, instant polls, online questionnaires, chats etc), web and video conference
2009	Online facilitator training	Manager org. learning	Discussion forums, chats, polls, facebook group
2010	New internal PR webpage	Manager org. learning	Included all materials of Proactive Review meetings and preparation, PR-triggers, material for training courses, activity calendar for the PR community, and links to PR Blog, facebook – group and relevant external web sites
2010	Online connection between sponsors and facilitators	Managers	Facebook group
2010	PR triggers When to run PRs?	External Audit	Criteria for when to run PR in all lines of business. Mainly developed on the basis of phone interviews. Placed on the PR web site, and the web site of the line of business.
2011	PR competence PR e-card PR recognition - stamp	Facilitators	Competence profile definition in the competence system, e-card for e-mails, recognition stamp in the internal online phonebook.
2011	Inter-organizational PR	Manager org. learning	Inter-organizational learning, including customers and partners utilizing the same tools as online PR
2012	PR light for sales	Sales manager	

From the above table we have summarised the 7-year story of iterations into four clusters to be described empirically, in more detail. In the following four clusters we accounted for concrete experiences and general reflections: a) From AAR to PR; b) The facilitator community; c) New requirements for Proactive Review; The facilitator community; and d) Internal communication about Proactive Review. Finally we end our empirical description with the final format of the Proactive Review, i.e. the learning practice

a) From AAR to PR, a pilot project

The top management initiated the development of a learning practice by asking the Manager of Organizational Learning to develop a process to learn from experience in order to avoid repeating failures and mistakes and to support innovation and repeating successes. The organizational learning team then launched a pilot using AAR (After Action Review), which was utilized by the US Army to learn from combat situations [26]. As the team was geographically dispersed, they utilized e-mail, phone, web conferences, and online file sharing for collaboration.

An After Action Review consists of four questions: 1) What did we set out to do? 2) What actually happened? 3) Why did it happen? 4) What are we going to do next time? [27].

The visible results of the pilot were three-fold: first, the After Action Review was changed to the format of a Proactive Review; second, a training course for facilitators was developed; and third, two series of Proactive Reviews were recorded in the annual report. The invisible results include the need of trained facilitators, approval from top management to continue the implementation of Proactive Reviews, and raised awareness of this learning practice in the global IT company.

Based on the rich feedback from the participants in the pilot project, the questions in the Proactive Review became:

1. What was our goal?
2. What happened and why?
3. What should we do next time?
    a. Continue
    b. Stop
    c. Start
4. What should we report, to whom, when, and how?

The new name indicates a contradiction: a forward look into the future (Proactive) based on a backwards look into the past (Review). The pilot project provided a process of involving colleagues who did not attend the Proactive Review (the last question).

The participants in the pilot welcomed this learning practice, which shows that the management and the employees agreed on the requirement for learning from experience. The revised format of Proactive Reviews enabled individuals who had solved a task to reflect on the experience and to share these reflections with other members in the team. Furthermore the team members shared their experience and by doing so they created new insights, i.e. new knowledge, which led to the collaborative creation of solutions to the identified problems.

In order to meet the need for trained facilitators, the global IT company started to train facilitators.

b) The facilitator community

After a 2-day training course, facilitators became members of a community called *The facilitator community*. Over the years more than 300 facilitators were trained, and the community had around 175 active members from 2007 to 2012. The interest in the interaction was to learn from experience and to know the newest development of the learning practice they shared.

From 2005 to 2007, the facilitators met once a month in a web conference hosted by the Manager of Organizational Learning. In addition, they had access to a website including materials for conducting PRs as well as a blog about PRs featuring interviews with facilitators, participants, middle managers, and top managers about their experiences with or requirements for PRs. The occurrence of social media in 2007-2008 enabled the facilitator community to interact independent of time and

space, and they started to meet in discussion forums, chat sessions, and discussions on the blog. Hence the frequency of the web conferences was reduced to only once a quarter, and from 2010 the web conference was changed into a video conference.

From this point of time, the data show a change in the interaction between the facilitators. More facilitators contributed to the on going discussions in chats and discussion forums on dedicated topics, more questions were asked, and more considerations were addressed.

More than 300 facilitators had been trained over the years, but it was hard for many of them to utilize their competences because of a lack of manager recognition. Therefore, procedures were developed for making the competences and the benefit of facilitating PRs more visible. One part was an update of the internal competence system, in which the trained facilitators could update their profile. Second, a facilitator e-card was designed so that the e-card showed the facilitation skills every time the facilitator sent an e-mail. Third, a “recognition stamp” was developed and given for outstanding facilitation performance. The recognition stamp became a part of the facilitator’s profile in the internal online phonebook, and the receivers were recognised in internal online newspapers, at the PR web site, and on the PR blog.

The facilitators were eager to participating in community meetings, future workshops, task forces, and other developmental activities even though facilitation was not a part of their work, but an extra task on top of their everyday job.

c) New requirements for Proactive Review

Within the first year of the implementation of PR the facilitators discussed the importance of a caring atmosphere throughout the PRs. Very often the participants were anxious when they met, and sometimes the PR ended up in a tense atmosphere which felt wrong. The solution was to add meta-reflection to the questions in the final question “What was your personal highlight from this Proactive Review?”

As the PR started up as a bottom up approach, where new trained facilitators initiated PRs in their working area, it mainly involved members from the actual work practice of their organization. The downside of this approach was a lack of interest and commitment from the middle managers. Consequently, another requirement was needed: the middle managers’ role was defined and communicated more clearly. Middle managers were supposed to support PRs. In order to do so they needed a tangible outcome of the PR. Hence a new question was added, namely “What should we report from this Proactive Review?” resulting in an action and communication plan that was delivered to the middle manager who then was called the Sponsor of the PR.

The learning practice took off, and more and more PRs were run in an increasing number of countries. Results were presented in internal newspapers, summits, and conferences, which raised awareness by the top management who asked for more insights in problems raised by the "grassroots," i.e. any level in the global IT company practice. This requirement was met by the Manager of Organizational Learning who started a "future workshop" for further development of the PR. A small group of very experienced facilitators met in this workshop in order to create a common understanding of the requirements. Then they worked collaboratively online for 3

months, utilizing discussion forums, chats, web conferences, shared files, etc. The result was an additional question in the format of PR: "What management challenges might be addressed from this Proactive Review?"

Another key requirement was increased online collaboration as the global IT company changed from a multinational to a global organization, where employees worked across country borders. During 2006 to 2008, the strategy changed from organic growth to growth through acquisitions, which included a vast number of new employees, new products and services, and new customers. It became increasingly important to learn and to learn fast, and more PRs were run. But the employees did not have the opportunity to meet face to face as they had before. Consequently, PR needed to be run online. The Manager of Organizational Learning invited very experienced facilitators to a taskforce that delivered recommendations for online PRs in which some of the conversation changed from being oral to written, and the conversation took place in web conferences and chats (synchronous) as well as in discussion forums (asynchronous). The appearance of social media made this development possible; many types of media were tried out, and recommendations were launched. Consequently, the format was never fixed to one particular technology as new tools should be explored when available.

Most countries trained a rather small group of facilitators, who could not be available at any time as they did the facilitation on the top of their everyday job. Hence the sponsors required a “marketplace” where they could meet available facilitators. This marketplace was established as an online group, very much like a Facebook group where the sponsors expressed their need and the facilitators replied with its availability.

The increased utilization of PRs from 2006 to 2008 made top management ask for statistics on the number of PRs. During the same period, the facilitators and middle managers asked for an online place to stock and find the action and communication plans that were a tangible outcome of the PR. These requirements led to the development and implementation of a so called PR-application.

In 2010 PR had spread to all lines of business in almost all countries in EMEA (Europe, Middle East, and Africa), and internal audit required principles for *when* to run a PR in the global IT company. The Manager of Organizational Learning collaborated with a small taskforce and top management to identify situations to *when* PRs were necessary. These situations were called *triggers* because they triggered/started up a PR. The triggers included mostly successful situations that should be repeated and some negative situations that should be avoided. Within a year, *PR*-triggers were identified and communicated for all lines of business. The creation of the triggers was based only on online cooperation between the Manager of Organizational Learning and top managers.

Furthermore, the rapid growth of the company raised another requirement: the need for closer technology-enabled cooperation between the global IT company and its customers and partners. Amongst others a new initiative was to test on PRs with external partners. The technology in use was the same as other online PRs, namely video or web conferences, social media polls, chat, and discussions in Facebook groups.

d) Internal communication about Proactive Reviews

When the implementation succeeded, the PR became an internal program that needed attention in all lines of business and at all levels. In other words, PR needed to be properly communicated.

In the beginning the internal communication was concentrated on incoming and trained facilitators who mainly received e-mails. But after a few months, PR became a topic on the internal Knowledge Management website which was accessible for all employees in the global IT company.

When blogging became available in 2006, the Manager of Organizational Learning took the opportunity to utilize this new technology for presenting stories from sponsors, facilitators, and participants to let them share experience and to make non-users aware of this new learning practice. New inventions, such as the additional questions, the PR-application, or recommendations for online PRs, were launched in the blog as well as in internal newsletters, on summits, and at internal conferences.

The new technology, the new requirements for online PR, and online facilitator training raised the need for a new platform for the PR practice, and a new website was developed. The PR web site included all training material, links to the blog, online training, the PR-marketplace, recorded PR community meetings, etc.

By the end of 2012 PR was a well-known learning practice that was utilized in the global IT company in most lines of business across more than 40 countries in Europe, Middle East, and Africa. Below we present the final format of this learning practice.

5.2. The final format of Proactive Review

As we have described above, the learning practice of PR was developed and changed over 7 years. The four questions after the pilot project were increased to seven questions 3 years later. The additional questions were added according to new requirements as well as more experience with the learning practice. By 2008, the format of PR was formalised into seven open questions asked in a specific sequence and answered by a group of people who have solved a task together [5,6].

Table 3. Proactive Review – the seven open questions, [6].

The seven questions are:	Intangible &Tangible Outcomes
1. What is the purpose of this Proactive Review?	The question enables the participants to think in the same direction
2. What was our goal?	Agreement or disagreement on the goal they meant to achieve
3. What happened and why? a. Enablers b. Obstacles	Creating common ground
4. What should we do next time? a. Continue b. Stop c. Start	Inventions being Solutions and Innovations

5. What should we report, to whom, when, and how?	Action and Communication Plan
6. What management challenges might be addressed from this Proactive Review?	Management Challenges
7. What was your personal highlight from this Proactive Review?	Meta-reflection

Anyone in an organization may initiate a PR that may be run on results or experiences perceived as positive or negative. The PR triggers frame when PRs are appropriate. A manager is responsible for applying the required resources, and s/he formulates the purpose of the Proactive Review; this role is called the Sponsor. A trained facilitator conducts the seven questions.

The first question is defined by the sponsor and this question enables the participants to think in the same direction. The second question uncovers whether the participants have lost their common goal during the time they worked upon the task. The third question creates common understanding of the past, which makes common ground for creating the preferred present or the favoured future in question four. The innovations and solutions are concretized in the fifth question, which includes the development of the action and communication plan. Sometimes the participants uncover challenges they are not able to solve, because the challenge needs more organizational power. Such a challenge is called a management challenge. To finish off the PR, the seventh question allows the participants to reflect upon the personal outcome of their participation in PR.

6. Analysis

In this section we analyse empirical data from table 1 Data Collection, table 2 Most Influential Iterations, and the cluster descriptions, namely the pilot, the facilitator community, new requirements and internal communication from the theoretical perspectives described above.

6.1. Middle-range theory

PR has shown applicable for empirical studies and this study bridges general theories on learning, practice, and technology in practice to the empirical research. The interplay between these theories and the actual empirical setting in a global IT company is facilitated and justified by data included in the descriptions of the iterations. Based on the final format of Proactive Reviews, we will in the next section present an emerging middle-range theory on how this learning practice affects various ontological dimensions in the organization.

6.2. Learning theory

This study exemplifies iterations in the creation of Proactive Reviews and the alignment of the format to organizational and technological development. This study has not exemplified iterations in learning processes in specific Proactive Reviews, as

our aim is to learn how this learning practice became a working practice at a general level.

The starting point for learning in Proactive Reviews may be defined by anyone in the organization who initiates the learning practice. Of the PR triggers that describe when PR is appropriate, there are more with positive than with negative starting points. This is in opposition to [1] who points out contradictions as the starting point, whereas [10] claims that conflicts and dissents or agreement and alignment amongst the practitioners may initiate the learning process.

The Proactive Review itself enables individual employees to learn from experience, which may be seen as one ontological dimension of learning, namely individual learning according to [8]. The PR is based on mutual dialogues between peers who share their experiences in order to solve challenges or problems they have identified. This process ensures learning on a second ontological dimension, namely team learning. The action and communication plan and the management challenge ensure that colleagues who did not attend the Proactive Review learn from the PR. The action and communication plan ensures learning on a third ontological dimension, namely organizational learning.

6.3. Practice theory

Working practices develop over time and so did the application of PR in this organization. Thus, the learning practice was affected and changed according to organizational requirements and needs as well as to technological opportunities. The data show that the facilitator community played an active role in this development.

Collective reflections in the future workshop enabled experienced facilitators to create an additional question that identified management challenges and a process for addressing these challenges, so that the top management could learn from the "grassroots." And experimentation and collective reflections in a taskforce enabled experienced facilitators to present recommendations for conducting Proactive Reviews online. In both cases the collaborative reflections were based on interactions that took place during the activity of development, and both cases changed the learning practice to become what it is. The developments made the facilitators knowledgeable practitioners who knew what to do and how to do it.

The facilitators were eager to participating in the facilitator community, future workshops, and task forces, and they facilitated on a voluntary basis on the top of their everyday job. This voluntary work affected the meaning of facilitation so that it became important to be recognized for the extra efforts. The development of the e-card and recognition stamp made their contributions more visible as knowledgeable practitioners.

Proactive Reviews proved sustainability with regard to the number of years we saw them flourish in the global IT company and with regard to their penetration into all lines of business. The number of PRs in table 1 might be misleading, as from other sources we know that many more PRs were run. In some cases the facilitators just forgot to fill in the action and communication plan in the PR application, but in other cases this action was to “overdo” the habit of running Proactive Review as the format of lessons learned.

From the above analysis, we argue that Proactive Review can be perceived not only as a learning practice but also as a working practice. Proactive Review was developed by practitioners who developed common ways to facilitate. We saw that the development of the Proactive Reviews over the years affected the facilitators' methods and the meaning of facilitating, and the training and the participation in the facilitator community made them knowledgeable about how and what to do when facilitating Proactive Reviews, face-to-face or online. [2],[10], [11]

6.4. The role of technology

The globalisation of the company from 2007 urged a distributed nature of technology support where online as well as offline functionality was demanded. It became necessary to revise and expand the original PR process. With the emergence of web 2.0 technologies, the global IT company was very eager to try out new and unexplored tools for various purposes. The emerging technology developed rapidly and the facilitators experimented continuously, discussing with and receiving feedback from participants and peers. Consequently the online PR never went into a fixed format, but developed as ongoing experiments that allowed facilitators and participants to try out new technology in parallel with the development of recommendations for running online Proactive Reviews.

The development of online PRs showed that the new technology was examined to match the learning practice, and the technology affected this learning practice so that parts of the interactions changed. They went from oral to written communication, and interactions changed from being synchronous to being asynchronous. The data reveal that new technologies were tested to frame the collaboration. This experimentation made the participants question their habitual way of acting so that they developed new practices to support the learning practice [13].

7. An Emerging Middle-Range Theory: the Organizational Learning Spiral

In this section we argue that learning may be perceived as a spiral and we present an emerging middle-range theory called "the organizational learning spiral".

Through several iterations of the development of Proactive Review, an organizational learning spiral was created. The spiral accounted for three ontological dimensions of learning that enabled individual, team, and global learning in the organization.

The starting point of the organizational learning spiral may be a successful or a problematic result in achieving a work task. The starting point may be defined by the PR-triggers or it may be initiated by anybody in the organization. The spiral requires a "power" to move the individual or the group from the starting point and upwards in the spiral. This power explains what enables the group or the individuals in the group learn. The power or activities that enable learning are the seven questions in the Proactive Review. These questions are open, and no one knows the answer before the Proactive Review has delivered an action and communication plan and quite often a management challenge as well.

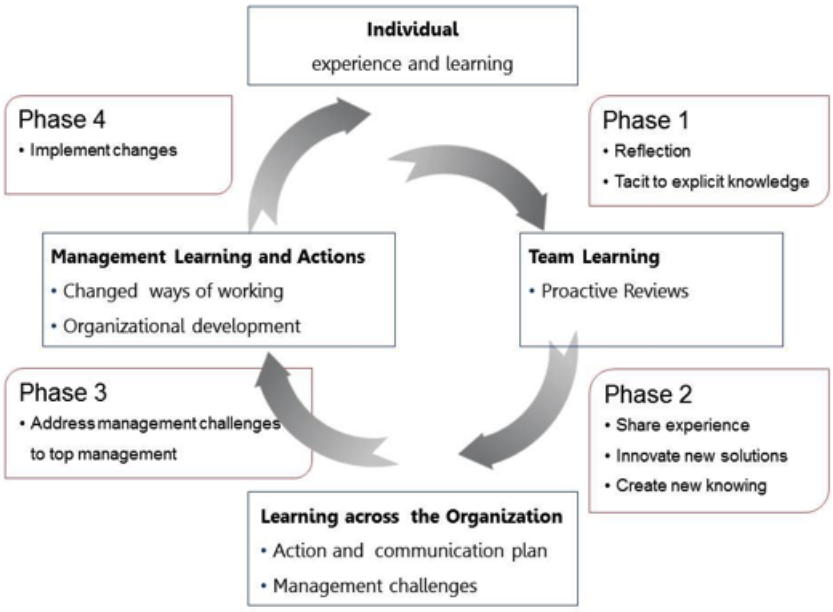

Figure 1. The Organizational Learning Spiral [6].

The organizational learning spiral consists of four phases describing the actions that lead to learning, which are displayed in the boxes in Figure 1. The starting point for the organizational learning spiral is an experience, which is gained from solving a task. The learning process begins with an individual's experience and learning from work situation(s), as shown in the top box.

Phase 1 illustrates the reflections that occur when the participants formulate the obstacles and enablers for doing the job successfully. These reflections are initiated by the invitation to the Proactive Review that includes the purpose of the Proactive Review. The purpose of the Proactive Review should be formulated as an open question, which is to be answered by the participants in the Proactive Review.

Phase 2 includes the Proactive Review itself that takes the historical background and social aspects into account and enables the participants to collaboratively form hypotheses and/or to come up with solutions to the obstacles they identified. Going through the learning spiral, the participants create knowing.

Phase 3 is initiated by one of the tangible outcomes from the Proactive Review, namely the action and communication plan that enables new knowing and the solutions to be spread horizontally across the organization when the participants implement the solutions for close colleagues and the manager provides the solutions to relevant peers.

Phase 4 is initiated by the addressed management challenge that enables vertical organizational learning as the top management learns from all levels in the organization no matter the hierarchical structure. When the top management initiates and implements changes to work practices or organizational development according to the addressed management challenge, employees adapt to these changes and everybody moves along the spiral. The management challenge enables employees at all levels to have direct access to top management with no interference from the organizational hierarchy.

The tangible outcomes of a Proactive Review are *inventions*. The first tangible outcome is the *action and communication plan* that ensures horizontal organizational learning. The second tangible outcome is the *management challenge* that ensures vertical organizational learning. The spiral shows that the group or the individual passes the same point, when they go through the spiral again; this next time the learner(s) pass the point at a higher level. In other words, the spiral shows that learning includes iterations as the learner(s) move up the spiral.

8. Conclusions and Implications

Below we will summarize answers to the research question being: How does a learning practice in a global IT company become a working practice as well as a middle-range theory?

We have presented our position with regard to middle-range theory and our perception of learning based in practice theory. The emerging middle-range theory is tested and developed through several iterations within a global IT company, which is our empirical setting.

The results show the learning practice was collaborative and facilitated by a community of facilitators. The learning practice developed in this global IT company was called Proactive Review; it consisted of seven open questions asked in a specific sequence by a neutral facilitator. PR is based on a mutual dialogue between the participants, and the seven questions allow a collaborative learning process in which the key actions are questioning, analysing, modelling, examining the model, implementing, reflecting on and evaluating the process of learning, consolidating, and generalizing the outcomes.

Proactive Reviews proved sustainability with regard to the number of years they flourished in the global IT company and with regard to the numbers of PRs in almost all lines of business conducted by an increasing number of trained facilitators. The facilitators as well as the participants became knowledgeable practitioners who knew why and how to do PRs, whether they were run face-to-face or online. We will argue that Proactive Review integrated a learning practice to become a work practice.

The organizational learning spiral may be perceived as an emerging middle-range theory as it has proved relevant in a specific context and applicable for empirical studies. The explanation of the organizational learning spiral includes interpretations of empirical findings and consolidated general theories that suggest a spiral as a metaphor for learning. The organizational learning spiral verified and combined general learning theories as well as practice theory presented above. The spiral accounted for three ontological dimensions of learning that was crucial in order to

verify its learning outcome globally in the organization. This study exemplifies how technology may support global collaboration and learning. Furthermore, the emerging middle-range theory called the *organizational learning spiral* shows how to ensure horizontal as well as vertical organizational learning.

In developing an agenda for further research, the middle-range theory needs more validation and verification for its applicability and scope. First, theoretically, the challenge of globalization and digitalization requires research where learning models need to be an integrated part of working practice. Second, practically, we hope that organization learning will take place in today's and tomorrow's organizational practices.

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