ORGANIZATIONAL LEARNING IN A NETWORKED WORLD: CO-RESEARCH AND CO-DESIGN WITH CUSTOMERS

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Abstract

In today's connected world, the view of innovation as the domain of expert researchers is challenged. In the virtual space, everybody can innovate. Businesses therefore, shift from focusing on developing own innovation capabilities towards learning how to *participate* in the innovation. Philips Design Co-Creation Experience "Sustainable Habitat 2020" in Second Life is a case where a community of researchers-designers entered the virtual world to invite its inhabitants to co-design future products. The paper evaluates the potential of such a platform for learning, working and innovating, as well as the benefits of, and obstacles to, learning in virtual world communities of practice.

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1. INTRODUCTION

Informed, networked, empowered, and active consumers are increasingly co-creating value with the firm. The interaction between the firm and the consumer is becoming the locus of value creation and value extraction. As value shifts to experiences, the market is becoming a forum for conversation and interactions between consumers, consumer communities, and firms (Prahalad & Ramaswamy, 2004; K. Weick & Sutcliffe, 2001). Complementary to this pull for solution and application is the understanding of companies that they can create more value, faster if they move beyond the traditional over-the-wall design of products to actually co-creating them with the customers.

In this paper I describe the case of an organization that not only collects and processes information about its environment and utilizes this knowledge for product and service innovation, but that also co-researches and co-designs with it.

In the case of Philips Design Co-Creation Experience "Sustainable Habitat 2020" in Second Life, a corporate community of researchers-designers entered the virtual world of Second Life to learn about its inhabitants and invite them to design future products. The virtual world, Second Life, is a platform for experimentation and interface with subjects of study. Philips Design conducts "meetings" and "gatherings" in their virtual research environment on Second Life to discuss new ideas and concepts, brainstorm about possible future solutions (design probes) and explore potential for future co-design and co-creation.

I present the case from the practitioner's point of view and base the account on an interview with the lead researcher as well as materials communicated in published works and presented in the 2008 EFQM conference (Kozlov, 2008).

In the analysis I explore the following questions: How does the virtual world enable learning, working and innovating in this case? How can virtual communities of practice be used for innovation? What organizational conditions facilitate learning in virtual CoPs? I also evaluate the benefits and the potential business value of innovation through co-creation as well as the obstacles to learning in communities of practice in a virtual world.

Through the lens of the theory of communities of practice I explain that learning amongst communities in a virtual space follows the process of legitimate peripheral participation. The discussion confirms Brown and Duguid's thesis that innovation can be seen as at base a function of changes in community values and views (1991). My findings pinpoint the changing of identity as a consequence of learning.

The case of Philips Design in Second Life illustrates that learning from other communities in virtual space gives rise to new knowledge creation. In a connected world, this process is carried out more and more frequently across diverse communities of practice and clashing cultures and realities. The volume and speed of such learning experiences businesses face today necessitates a change of attitude to the boundary-crossing and identity-changing aspects of social learning among communities of practice. In a networked world, innovation is happening "out there". It is no longer restricted to R&D departments nor lead user communities. The case here presented is a story of how an enterprise created for themselves a chance to participate in this process.

My purpose in this article is to encourage connecting of communities through boundary-crossing, learning process, and to contribute to the question of how learning happens in a networked world.

2. THE THEORY

In his 2002 paper, Mark Easterby-Smith et al. note the broadening of perspective in the early debate on organizational learning from individual and the organization to incorporate the group level. The social constructionist perspective provides a challenge to the traditional idea that learning takes place within the heads of individuals or in organizational systems and structures. It starts from the assumption that learning occurs, and knowledge is created, mainly through conversations and interactions between people (Brown & Duguid, 1991; Easterby-Smith, Crossan, & Nicolini, 2000).

This revolution in the perception of the learning process overturned the previously dominant model which implicitly conceptualized learners as individual actors processing information or modifying their mental structures, and substituted it with an image of learners as social beings who construct their understanding and learn from social interaction within specific socio-cultural and material settings (Bruner, 1997).

2.1. Social Learning Theory and Legitimate Peripheral Participation

Lave and Wenger (1991) have rejected transfer models, which isolate knowledge from practice, and developed a view of learning as social construction, putting knowledge back into the contexts in which it has meaning.

Learning a practice involves active participation in a set of activities with concrete individuals who recognize this participation as competence. Learning in practice involves the ability of behaving as a competent member in a discursive community. Learners learn to function in a community through the process of legitimate peripheral participation (LPP). Learning, from this point of view, essentially involves becoming an "insider". In the process learners acquire that particular community's subjective viewpoint and learn to speak its language. Participating within a given cultural practice depends upon mastering the kinds of discourses that shape and organize that practice. One key form of discourse supporting practice is the use of stories as situated knowledge resources (Ibid).

As a primary tenant of LPP, based on lived experience, individuals are part of or participants in a community engaged in the process of changing from peripheral to full participation and membership in the community. Wenger and Lave (1991) contend that a key aspect of this process is that it is dynamic or founded on change and development of what might be considered the individual as well as the community as a part of the social world. Learning is therefore intimately interwoven in a social, cultural and historical context with the individual.

In this process Legitimation is informal and comes about by members earning their status in the community, through common problems, and common pursuit of solutions. Peripherality describes location and identity in the social world, whereas Participation does not imply co-presence, identifiable group or socially visible boundaries (Wenger & Lave, 1991).

2.2. Communities of Practice

Lave and Wenger (1998) specify that a community of practice involves 3 conditions: (1) the Domain – an identity defined by a shared domain of interest, namely a shared competence that distinguishes members from other people; (2) the Community – members engage in joint activities and discussions, help each other, and share information, they build relationships to enable them to learn from each other; and (3) the Practice – members of a community of practice are practitioners, they develop a shared repertoire of resources, experiences, stories, tools, and ways of addressing recurring problems.

Wenger (1998) asserts that the generation of knowledge in communities of practice occurs when people participate in problem solving and share the knowledge necessary to solve the problems. Learning consists of adopting a new identity in the community of practice, and the "knowing" is located in the relationships between the identities, the artifacts, and the social organization of the community of practice.

In a seminal paper Brown and Duguid (1991) propose that an organization can essentially be viewed as a community-of-communities, and conclude that working, learning and innovating can thrive collectively only when the three are linked together in theory and practice. That is because, according to social learning theory, "learning in working" best represents the fluid evolution of learning through practice. A consequence of this thesis is that innovation can be seen as at base a function of changes in community values and views.

3. THE STUDY OF TRENDS

3.1. Communities of Practice

The emergence of practice as a new unit of analysis opened the door for potential new research (Easterby-Smith *et al.*, 2000) which flows still with a vibrant stream because understanding how learning happens in the workplace may help devise new ways of sustaining and fostering learning processes. Nowadays, most businesses are convinced of the fact that communities of practice can drive strategy, generate new lines of business, solve problems, promote the spread of best practices, develop people's professional skills, and help companies recruit and retain talent (Wenger & Snyder, 2000: 140).

However, the very characteristic that make communities of practice a good fit for stewarding knowledge – autonomy, practitioner-orientation, informality, crossing boundaries – are also characteristics that make them a challenge for traditional hierarchical organizations.

The organic, spontaneous and informal nature of communities of practice makes them resistant to supervision and interference (Ibid), which poses problems in practice. Is it then possible to *design* a community of practice?

3.2. Customer Communities of Practice

Many companies, particularly those in the technology industry, have established user groups and customer advisory boards which are arguably a precursor of Customer Communities of Practice (CCoPs). However, many of these are not true communities, focusing little or not at all on cross-member learning or collective development of a domain

of knowledge. Instead they are merely marketing PR – customer representatives brought together periodically to provide input to company's product / service development, but whose activities yield no collective betterment of membership (Paul Hildreth & Kimble, 2004).

The bonds of a true customer community of practice membership should be as much about the participants learning and benefiting from the experience and problem-solving with one another as they are about the business value derived by the sponsoring company (ibid, 2004).

3.3. Virtual Communities of Practice

Research has been done on communities of practice that use virtual means of communication (for example, P Hildreth, Kimble, & Wright, 2000). The term "Distributed Community of Practice" refers to such a community, meaning a group of geographically distributed individuals who are informally bound together by shared expertise and shared interests or work (Etzioni & Etzioni, 1999; Murillo, 2008). Key features of DCoPs include: shared interests, common identity, shared information and knowledge, voluntary participation, autonomy in setting goals, awareness of social protocols and goals, awareness in membership and effective means of communication. Additionally, the important undertone that drives the entire community is collaboration. Collaboration allows for the active exchange of ideas, and helps to promote interest in being a part of the community (Couros, 2003).

Online virtual worlds, electronic environments where people can work and interact in a somewhat realistic manner, have great potential as sites for research in the social, behavioral, and economic sciences, as well as in human-centered computer science (Bainbridge, 2007).

In a business context, virtual worlds as a virtual platform go beyond enhancing work practices and increased efficiency, to providing new ways of socializing and entertainment. They also create new learning spaces, communication spaces, as well as economic spaces. As a medium, they stimulate the use of imagination and fantasy, the capacity to produce and enjoy the narratives using multi-voiced story telling (Kozlov & Reinhold, 2008).

There is an obvious and large cultural gap between corporate worlds and virtual worlds. To bridge this gap and to be able to begin *legitimate* peripheral participation in the virtual community, companies have to translate their presence in a virtual world into a set of meaningful and sense-making activities for the participants – even if it means that they have to change their corporate culture and way of working in some ways. In the case presented, this process leads to the development of a new identity through a learning experience.

3.4. Using Customer Communities of Practice for Innovation

User networks are vital sites of innovation (Kimble & Hildreth, 2004). Because Customer Communities of Practice foster inter and intra-company relationships, they can create different and deeper bonds between company and customers. They also provide a larger umbrella of learning that surrounds membership in the customer community.

The organization being examined in this paper uses the methodology of participatory design, among many other methods, to explore tacit knowledge of the users of solutions (products) and to cooperatively prototype innovations. In this practice the researcher-designers see themselves as facilitators who attempt to empower users in making their own decisions (Spinuzzi, 2005).

This case shows that interaction with such communities provides good illustration for creating an understanding of how innovation, work and learning are interrelated in a connected world.

4. THE STUDY OF IMPLICATIONS

4.1. Organizational Boundaries

Digital interconnections have enabled the existence of globalized decentered organizations. Consequently, it is difficult to think of an 'organization' as a stable entity with defined boundaries. We can appreciate them more as the enduring and yet contingent outcome of collective efforts; that is, as the result of an intense activity of assemblage, boundary-making and identity-preserving, which takes place at the intersection of practices and networks of interest (Easterby-Smith *et al.*, 2000, 791). Identity-preserving efforts however, may need to be hindered in the process of learning.

Social learning theory, initially developed to describe individuals' learning process, implies a change of identity as the learner becomes part of the community of practice. In organizational studies and organizational learning, it is not uncommon to apply the theory of individual behavior to the behavior of organizations, such as in the behavioral theory of the firm (Cyert & March, 1992; Simon, 1996), or in cognitive approaches to knowledge management (L. Argote, Ingram, Levine, & Moreland, 2000), and organizational learning (Sitkin, Sutliffe, Weick, & Dorf, 1998), using for example, the concept of organizational memory (K. E. Weick & Roberts, 1993). My argument is that organizations' identity changes as they learn from other communities.

Learning and the consequent continuous redefinition of identity is desirable. As Brown and Duguid (1991) noted, an organization is a community-of-communities that needs to acknowledge the presence of various communities whose cultural dimensions, such as language, values, as well as domain and practice, differ. To foster working, learning and innovating, the diversity of their practice should be supported (Ibid).

Still, the risk of blurred identity and blurred organizational boundaries remains high when the communities reach outside of the corporate walls for the mix of working, learning and innovating practices. What does this mean for the already fluid boundaries of a corporation? I postulate that reaching beyond the boundaries of an established organizational culture in order to co-create does change organizational identity but it may be a healthy practice.

4.2. Dialog Creates a Discursive Community

Learning is generated by experience. Linda Argote defines learning as change in the organization that occurs as a function of experience (Linda Argote & Todorova, 2007). Organizational learning processes translate experience into knowledge. When two different communities come together to participate in Brown and Duguid's working in learning / innovating experience, learning happens through the process of legitimate peripheral participation. If the experience is novel to both communities, and the participation is based on equality, it must give rise to a change of identity of both. This experience then, becomes the uniting factor with which both communities can associate. My argument is that when the experience is repeated and becomes practice, next to changing the identity of either of the communities, a third identity is created. The combined identity is developed through dialog, which Gherardi and Nicolini (2002)describe as discursive practice.

Discourse among communities is a specific practice whose aim is not only to reach understanding and / or produce collective action, but also to foster learning by comparison with the perspectives of all the co-participants in a practice. Groups of people with various organizational and cultural backgrounds, who meet for a period of time in order to analyze a problem or to draw up a project, create a discursive community. This generates a situated discursive identity which enables them to compare different perspectives, but which also makes them realize that they may remain isolated, juxtaposed, non-communicating, and even conflictual. Discourse of this kind involves 'positioning' of individuals (i.e. a statement of identity, and an involvement of power relations).

Discursive dialog about practice puts the community on-stage, producing it culturally and symbolically. Consequently, participating in a discursive community means being able to *relate to* the discourses on practice of other communities (Ibid).

5. THE STUDY DESIGN

The case of co-research and co-design with customers at Philips Design that was presented in the EFQM conference organized by Philips in June 2008. I support it with own observation, and insights about the background of the organization and from interviews with key practitioners. The data analysis is based on the interview with Slava Kozlov, the key Future Researcher leading the Philips Design community's presence in web 2.0 spaces. In the interview I sought answers to the following questions:

- How does the virtual world enable learning, working and innovating in this case?
- What are the obstacles to learning from virtual communities of practice using web 2.0?
- What organizational conditions facilitate learning in virtual Customer Communities of Practice?
- What are the benefits and the potential business value of innovation through co-creation?

The following data analysis presents insights delivered by the interview. All quotations are marked in italics throughout the following sections.

6. DATA ANALYSIS

6.1. Introducing Philips Design researchers

6.1.1. The Domain

Philips Design (PD) unites various professionals: product designers, visual communications designers, video designers, interaction designers as well as sociologists and anthropologists, psychologists and human factor specialists. One of the main areas of activity of the organization is future studies. The researchers use various methods, such as ethnographic studies and participatory design research, to study people, their values and future trends.

6.1.2. The Community

As an organization, Philips Design works towards solutions that are integrated in business, multi disciplinary, research-based and people focused. The organization is fairly flat and flexible, and most work is project-based consulting for which small multidisciplinary teams are set up. For the initiative "Habitat" in Second Life (Design)a dedicated core team of 5 people and many 'sympathizers' who were aware of the activities but hardly ever present in the virtual world, was arranged.

6.1.3. The Practice

Similar to social learning theory, participatory design, one of the methods used by PD, is theoretically founded on constructivism. Participants' knowledge is valorized rather than deprecated, and their perspectives therefore become invaluable when researching their activity and designing new ways to enact that activity (Spinuzzi, 2005). Innovation is created in the process of participatory design research, when tacit knowledge is not only explored, it is in many cases made materials.

Participatory design uses the notion of the *language game* for bridging the worlds of researcher-designers and users by finding a common "language" or mode of interaction with which both parties feel comfortable.

Researchers at Philips Design research the future and make 'design probes' which are tangible products that embody a possible future solution. They are meant to provoke a discussion; they are not necessarily future products. The researchers learn a lot from how people react to such concepts. That is why they seek continuous feedback from their environment. And the feedback loop in virtual worlds is almost instantaneous.

We tried many initiatives to co-create with users, Second Life isn't the first one. We used forums, blogs, and many other. The idea is to innovate with users, with people. The problem is, it's easier said than done, to enter Second Life and use it for co-creation (Kozlov, 2009).
Philips Design considers the potential of virtual worlds such as Second Life to be greater than the mere support and reinforcement of existing business processes. They see Second

Life as a platform – both a place and a way – to better understand evolving culture, languages, and codes of behaviors (Kozlov & Reinhold, 2008).

6.2. Introducing Second Life

6.2.1. The Domain

Second Life (SL) is a virtual world developed by Linden Lab that launched on June 23, 2003 and is accessible via the Internet. A free client program called the Second Life Viewer enables its users, called *Residents*, to interact with each other through *avatars*. Residents can explore, meet other residents, socialize, participate in individual and group activities, and create and trade virtual property and services with one another, or travel throughout the world, which residents refer to as *the grid*. The Second Life Terms of Service ensure that users retain copyright for any content they create, and the server and client provide simple digital rights management functions.

Second Life has an internal currency, the Linden dollar (L$). L$ can be used to buy, sell, rent or trade land or goods and services with other users. Services include "camping", wage labor, business management, entertainment and custom content creation.

Second Life's internal economy generates monthly internal economic activity passing US$1 million at current L$ to US$ exchange rates. The opportunity to earn real-world profits was enabled when third party sites connected *Second Life*'s L$ to US$. Some companies generate US dollar earnings from services provided in Second Life. Examples are Languagelife.com, Rivers Run Red and Beta Technologies. This opportunity is extending to normal residents and non-Second Life users via affiliate programs (Wikipedia, 2009).

6.2.2. The Community

Henry Jenkins (2006) points to participatory nature of web-based communication and observes the emergence of new cultural practices in these online worlds, which have a whole set of their own distinctive qualities (exploring, trying out, making mistakes and 'experiencing' rather than merely 'achieving results').

Resident-run events within *Second Life* are a common way to meet large numbers of other residents. They also can have economic motivations, as many give out prize money or are used to generate higher dwell awards. Events of all types exist. Costume parties, trivia contests, themed chat, open houses and game shows are quite common (Ondrejka, 2004).

In the virtual world, communication is open and interaction between participants is playful in nature. The quality of lesser control and the freedom to explore helps many people to construct "temporary spaces as platforms of possibility" which enable new learning and unlearning (Manu, 2007 in: Barclay, 2009) .

For many people their online activities are experimental and experiental by nature. The situation of experimental flow in turn opens the gate to self-reflexivity of the participants.

This reflexivity is partly achieved via instant and multiple feedback loops, which are provided by other participants and by the 'worlds' themselves. (Kozlov & Reinhold, 2008: 4).

Virtual CoPs have their own culture built around the practice (P Hildreth *et al.*, 2000). In this case, we can observe how the medium became the message: the virtual world as a platform contributed to the creation of the culture of its "Residents". The culture of SL is distinctive in its language, rituals and social norms of behavior such as role playing (frequent switching roles from "author" to "listener"), accepted ways of working (participatory in nature), attitude of "playfulness" and identity of participants that precipitates through the co-creative production of multi-voiced polyphonic story telling.

6.2.3. The Practice

Members are practitioners, not mere 'users'. Second Life is used as a platform for education by many institutions, such as colleges, universities, libraries and government entities. There are over one hundred regions used for educational purposes. Research has uncovered development, teaching and/or learning activities which use Second Life in over 80 percent of UK universities. At least 300 universities around the world teach courses or conduct research in SL (Wikipedia, 2009).

Info Islands uses library programming sponsored by the Illinois' Alliance Library System and OPAL currently offered online to librarians and library users within Second Life. Another virtual continent called <u>*SciLands*</u> is devoted to science and technology education. Second Life has also been adopted for foreign language training as early as 2005. Other applications include religious activities, live music, art exhibitions, theater and gaming.

Educational events, where residents teach new users about the best ways to accomplish various tasks within *Second Life*, are also extremely popular. Residents who entered *Second Life* without any formal programming training now teach hundreds of people how best to create airplanes, weapons, and other scripted objects (Ondrejka, 2004).

6.3. The Learning Process: Legitimate Peripheral Participation

6.3.1. Establishing Legitimacy

Typical reasons why business comes to Second Life is to create intimate relationships with customers, occupy and engage their minds, to create proprietary insights through co-design, testing and participative events, and to create new channels and new business models. Most companies, like for example Coca-Cola, entered with the sole purpose of making a marketing campaign. Residents didn't show up to the event, and Coca-Cola gave up concluding it is a bad world (Kozlov, 2009).

When first entering Second Life, Philips Design decided to build a long-lasting community rather than a one-off project. This intention was communicated to the Residents. PD did not make a specific commitment for how long they will be present, but left it open ended. It was an investment of time and human resources to build their presence in SL.

The status of the establishment was "we do it together"– a co-creation community. In this initiative, the Residents have a chance to suggest their topics. There was no fixed agenda of topics, no pre-assumed list of business objectives. *Our aim was to explore and learn about Second Life and its people. Our attitude was to understand and learn, not to sell, because people can smell it when it is otherwise.*

It is important to note that the relationship between communities in virtual world is that of partnership on equal rights. Events are communal, and anyone can initiate a co-creation experience. At first people, the Residents of Second Life, were skeptical and suspicious. *We are a corporation. Even though Philips brand does not bring the worst associations, it's still a corporation.*
A natural concern about information disclosure, Residents being anxious about revealing private information, was one of the first steps towards building trust in this phase

PD's initial attitude was that it was a privilege to partake in the innovation process for which the initiative was set-up, assuming the position of "experts" in this practice. *We assumed that actually, we can innovate without the people.*
But paradoxically, soon they discovered the relationship was quite the opposite: *We had to win their trust to learn from them and do it together. It was very difficult for people* [researchers] *to understand this equation, this switch of roles.*

This initial discrepancy of expectations was a feeling the research team interpreted as being an outsider: *We weren't a member of the club, we came to a party not dressed properly and so we had to work hard to get access and be accepted by the party.*

The big learning for PD was to earn trust of the SL community first. *Fortunately, we didn't enter with the grand thrust of corporate castles, but instead, we based our relationship with the inhabitants on equality. We introduced ourselves: Our deliverable is learning about the future and what we produce is insights about it.*

6.3.2. Being a Novice

Learning through legitimate peripheral participation involves acquiring the language of the community. PD's first steps were to try to adapt to the Second Life's cultural environment by exploring and living in this world, rather than by executing a pre-defined list of business processes.

The team needed to learn the scripting language, the social etiquette, the local slang. They spent several months living in SL to learn and become comfortable with the virtual reality. Kozlov summarizes the learning at this stage: *By welcoming Residents to make meetings and workshops in our community, we realized we are a member, but we don't own the community. That helped keep our virtual community growing.*

The PD team did have research questions prepared for the Residents, but allowed them to ask their own research questions. For example, people were interested in role playing, which was a topic the team hadn't considered.

Many participants often explicitly mention "a very characteristic 'joyfulness' and 'lightness' of their experience in these worlds as well as the open and playful nature of communication and interactions with other people. (Kozlov & Reinhold, 2008),This affects the spirit of activities conducted in this medium and is reflected in the specific way of working, business processes, as well as the naming of these activities. For example, organizing a discussion around a design probe on the topic of sustainable living ("The Habitat") was arranged in the form of a game and named "Ideation Quest".

Another finding at this stage was that there is a self-selection process in co-creation events with people: the team was open to let anybody come, knowing that not everybody will be wiling to engage in the experience as planned. But people who come are usually willing to do it, therefore the group of participants is self-selected.
You have to adopt the attitude "I am wiling to welcome anyone who will come". This will keep the community organically evolving.

6.3.3. Moving From Novice to Full Participant

During the project, the team discovered that Second Life is not an optimal platform to co-create. People like to type, so blogs and classical internet forums were platforms used to complement the SL initiative.

Second Life space is like a business center with flexible work spaces. At a certain stage, after several months from the start of the initiative, Residents began coming to have meetings in PD's virtual space, on their piece of land. *Can you imagine people coming to your office to have meetings? It's impossible to imagine, they wouldn't even get through the gates.* This act was indicative of being regarded as full member.

Another consequence of being recognized as a full member of SL community was when PD began forming connections with new communities through the participants of the co-creation experience, and their friends' communities in an exponentially growing sequence. As a consequence, new projects were beginning to emerge.
It doesn't happen linearly, it grows organically out of the network dynamics in the hyper-connected space. This is something you couldn't expect or calculate linearly in your plan.

6.3.4. Becoming an Expert?

Finally, a blurring of boundaries between communities was notable when the PD team, who initially came to discuss their design probes, were invited by some inhabitants to review their own probes. The Residents started inviting the researchers to their communities, and to their innovation workshops.

Discourses on practice between SL and PD created a third identity, the discursive community, to which both communities could relate. That was the moment when the researchers, surprised, asked the question "Who is the participant in whose community?". The team came to the realization that *We are the participants in their design.*

Another remarkable fact was the speed with which the News about the PD virtual community spread within the virtual world. *At the peak of our activity in SL, I knew I could go there, tell the news, and it would immediately spread to the larger audience. By larger*

audience I mean several thousand people. However, the researcher also points that it takes effort to maintain this high level of participation.

6.4. Results

Opening up to unexpected instant experiences did not immediately impact the profits of PD, but did bring potential business value of learning experiences which later were transformed into knowledge in the form of research reports and solution proposals. According to Argote's framework of organizational learning, knowledge created from experience was thus embedded in organizational memory. Furthermore, this new knowledge affects the organizational context and subsequent units of experience, which could lead to deeper learning.

Kozlov evaluates that having constructed the network of awareness and understanding of PD's concepts and activities in SL, *increases our asset in social capital. In the virtual world, the news spreads very fast and this can be measured by the number of people we are connected to.* Such an assessment is measurable by for example, observing how many people read a press release placed in the virtual space.

Secondly, the initiative impacts how people perceive the Philips brand and affects brand loyalty: *If you make a mistake, people will forgive you and will still come back. This trust does not exist in the relationship between the anonymous corporation and the consumer.*

In terms of tangible results, in-depth ethnographic and participatory research studies were conducted on various topics with inhabitants through which the researchers learned what is appropriate and meaningful for them in Second Life (Kozlov & Reinhold, 2008). Some ideas were developed into probes. Rich ethnographic materials have been collected. Ideas for future areas for innovation were noted. Meta-learning and insights about the experience were numerous.

One set of lessons was delivered by feedback by potential users. It turns out, their verification is often very different from management concerns about a new product concept.

The learning experience in the virtual world was by no means comparable to real life because experimentation and making mistakes in virtual reality is very easy, mistakes are quick to correct and not as costly as in physical reality.

7. FINDINGS

- How does the virtual world enable learning, working and innovating in this case?

Web 2.0 has enabled learning in a physically boundary-less space: mistakes do not cost much and it is possible to learn from other communities of practice.

- What organizational conditions facilitate learning in virtual CoPs?

Learning between communities in the virtual world implies changing identity and requires turning of the organizational boundaries into a membrane. In this case, the researcher becomes the learner. The learner does not hold the sole ownership of the lesson. Using the organic metaphor of a cell, an organization or community of practice has to open to let other ideas, and people through the boundary. The community needs to first open to allow more channels of communication, be ready to absorb new flows of experience from which organizational learning will result.

- What are the benefits and the potential business value of innovation through co-creation?

Opening the doors brings a lot of new knowledge, but it means to expect the unexpected. Co-creation with virtual communities is based on equal rights of participation and an organization must be ready to reconsider its work practices, its expectations as to the outcome of the learning experience and the format of the outcome, as well as the business processes around it. Emergent business benefits may come in the form of novel cooperation projects. For example the PD team were invited to a Swiss architecture company's co-creation probe and actually started cooperation and met in real life.

- What are the obstacles to learning from virtual communities of practice using web 2.0?

Obstacles are cultural and attitudinal. Paradoxically, preserving organizational boundaries, which I can refer to as territoriality, is an obstacle to learning. At the same time, the open-endedness implying no clear expectations as to the outcome of the learning experience is unacceptable for a rational investment decision. It may be met with doubt and anxiety of the management who are typically risk-averse and taught to avoid uncertainty.

Furthermore, obscurity of the rules of the game is an obstacles. In a relationship based on equal rights, proprietary issues are inevitable. These include business modeling – the distribution of the benefits, ownership of profits, legal, financial property sharing, and copyrights. Similar confusion rests on the side of the project output – what do the parties co-own? The ownership of ideas is not an issue because ideas in such co-creation initiatives don't have an owner. They are part of the playful experience people create for enjoyment and for common good. The question should rather refer to what one does with the ideas, with how they are later utilized,.

Another set of obstacles relates to the operational aspect. Results of the learning experience, which could be a concept of an innovative solution or a research report, come in the form of tags, pictures, blogs and links instead of the widely accepted powerpoint slides. For example, Kozlov's research report was a set of "Delicious" hyperlinks. Such format does not fit the traditional way of working in most organizations and may lead to process inefficiencies.

Furthermore, using virtual reality requires powerful hardware and software, especially graphics and RAM, that is a cost that should not be underestimated. Lastly, the human affinity with technology cannot be excluded as a potential obstacle: while some people are pro-digital, some will never adopt it.

8. DISCUSSION AND FUTURE RESEARCH DIRECTIONS

8.1. Innovation

The source of innovation lies on the interface between an organization and its environment (Brown & Duguid, 1991). That is in contrast to the traditional view on innovation where it is viewed as disruptive process carried out by experts. Innovation is viewed as change in which the individual actually becomes a different person through the learning process.

The case of Philips Design's Co-Creation Experience in Second Life is a confirmation of Brown and Duguid's thesis that innovation can be seen as at base a function of changes in community values and views (1991). In the case presented, the change was introduced through participation in a novel learning experience in which the participants engaged in discursive dialog with another community of practice.

The important interplay of separate communities with independent (though interrelated) worldviews is in part embraced in von Hippel's (1988) account of the sources of innovation and other descriptions of the innovative nature of business alliances. Von Hippel argues that sources of innovation can lie outside an organization among its customers and suppliers. But while von Hippel found that lead users are the main source of innovation, the case here presented differs from the examples of Customer Communities of Practice found in the literature (Paul Hildreth & Kimble, 2004). In today's connected world, innovation happens 'out there', which challenges the popular view in which perfecting the capability to innovate is the goal companies should pursue. Rather, it hints at the shift towards strategies to *participate* in the innovation through, for example, co-creation.

8.2. Learning Experience in CoPs Implies a Change of Identity

In the case of Philips Design co-creation experience, learning took place between two communities of practice through participation in a novel experience. My argument is that when the experience is repeated and becomes practice, next to changing the identity of both of the communities, a third identity is created. In this case, that of the participants of the Philips Design co-creation experience in Second Life. Further research is needed to verify the outcomes of the learning experience for the Residents of Second Life, as well as the longevity of the "Philips Design in Second Life" community of practice.

8.3. The Role of Emergence in the Learning Experience

As experienced by the Researchers in the case, innovation with other communities requires openness to change of identity. There is also a characteristic phenomenon that comes about when clear expectations and pre-defined goals are resigned upon: Emergence. *It's like a plant: you might put a seed into the soil, you pour water on it, but you cannot control how it will grow. You have to let it happen and welcome the results, whatever they might be, and something will definitely happen.* This process does not allow either party in the innovative experience to have a plan with strict expectations or even clearly defined goals. There will be results, but they are not predictable as such.

This phenomenon, still too complex for businesses to make full use of, is natural in all organic complex adaptive systems. Kozlov summarizes it as follows: *You can start with a vision in your mind, but be ready that the final version may be significantly different from what you imagined. And this was also a learning for us: we were happy to see the community emerging, happy to see people's willingness to co-create.*

In the study of organizations as complex adaptive systems, learning can be expressed as information flow which gives rise to the phenomenon of emergence. Learning, viewed as a change of identity, can be thus analogous to the process of adaptation in an organization. The case of learning between communities of practice on the virtual platform supplies many arguments to support this analogy. In this paper, however, my intention is not to explain the learning behavior of an organization but rather to pose questions and provoke a discussion towards an integration of the social learning theory at an organizational level with complex systems view of human organizations.

8.4. Further Research Directions

In the initiative, what was evaluated as the biggest challenge to organizational learning was how to bring these lessons from experience, about the new way of working, about co-creation and the ease of connecting, inside the larger organization more quickly. More research is needed to observe what conditions facilitate the formation of communities of practice and mingling of diverse communities for learning and for business value. What are the best platforms for such interaction? To what extent can this process be designed or projected and which items should be left out to the phenomenon of 'emergence'?

9. IMPLICATIONS FOR PRACTITIONERS

In a connected, networked world, we are dealing with more and more complex relationships that do not fit linear thinking. Most leaders have difficulty understanding the value of Communities of Practice, for example. For one thing, the effects of communities of practice are often delayed. For another, the results usually appear in the work of teams and business units, not in the communities themselves. And it's often hard to determine whether a great idea that surfaced during a community meeting would have bubbled up anyway in a different setting. Such complexity makes it very difficult for managers to assess the value of communities (Wenger & Snyder, 2000).

It is difficult to even talk about the phenomena of organizational learning in network dynamics in business because the vocabulary of adaptive systems is hardly known to business practitioners. Key performance indicators need to be changed to accommodate the value of learning experiences of a community. Their value cannot be estimated upfront because in the estimation there is no room for items that are not easy to measure, such as assets in social capital or the number of connections in the network of virtual communities. Furthermore, the estimate cannot account well for the value of emergent findings that could generate unexpected benefits.

Perhaps change is needed to conquer the perception of lack of control and command as bad, as opposed to the perception of predictability as good. It is also necessary to educate

business leaders on the dynamics of human complex adaptive systems and learning in their context. This will help them to acknowledge that emergence is not noise but the source of innovation.

In today's connected world, innovation happens 'out there' which challenges the popular view in which perfecting the capability to innovate is the goal companies should pursue. Rather, it hints at the shift towards strategies to *participate* in the innovation through, for example, co-creation.

Virtual worlds can be used to that aim of challenging existing norms and practices, experimenting and enabling changes of business culture. At the same time, virtual world is a context quite different from the real world and transplanting onto it practices from the real world does not bring the desired effect. It is desirable to withhold business objectives and own assumptions to learn about the new space, its people and culture, before undertaking any business activity.

Virtual worlds also offer good research potential (Bainbridge, 2007), which I encourage the research community to use to better understand the network dynamics and learning in human complex adaptive systems. I encourage the research community to try to engage in discursive practice with their subjects of study and allow their identity to change for the sake of learning and innovation.

REFERENCES

Argote, L., Ingram, P., Levine, J. M., & Moreland, R. L. (2000). Knowledge Transfer in Organizations: Learning from the Experience of Others. *Organizational Behavior and Human Decision Processes*, 1-8.

Argote, L., & Todorova, G. (2007). Organizational learning. In *Hodgkinson, G. & Ford, K. J. (Eds) International Review of Industrial and Organizational Psychology* (Vol. 22, pp. 193-234).

Bainbridge, W. S. (2007). The Scientific Research Potential of Virtual Worlds. *Science, 317*(5837), 472-476.

Barclay, L. A. (2009). The Imagination Challenge: Strategic Foresight and Innovation in the Global Economy: By Alexander Manu. *Business Communication Quarterly*.

Brown, J. S., & Duguid, P. (1991). Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. *Organization Science, 2*(1), 40-57.

Bruner, J. (1997). *The Culture of Education*: Harvard University Press.

Couros, A. (2003). *Communities of Practice: A Literature Review*. Available at: http://www.tcd.ie/CAPSL/academic_practice/pdfdocs/Couros_2003.pdf

Cyert, R., & March, J. (1992). *Behavioral Theory of the Firm*: Wiley-Blackwell.

Philips Design, *Off the Grid: Sustainable Habitat 2020*. Retrieved 11 March, 2009 Website: http://www.design.philips.com/probes/projects/sustainable_habitat_2020/index.page

Duguid, J. S. B. P. (1991). Organizational Learning and Communities-of-Practice: toward a Unified View of Working, Learning and Innovation. *Organization Science, 2*(1), 40-57.

Easterby-Smith, M., Crossan, M., & Nicolini, D. (2000). Organizational Learning: Debates Past, Present And Future. *Journal of Management Studies, 37*, 783-796.

Etzioni, A., & Etzioni, O. (1999). Face-to-Face and Computer-Mediated Communities, A Comparative Analysis. *The Information Society, 15*(4), 8.

Gherardi, S., & Nicolini, D. (2002). Learning In a Constellation of Interconnected Practices: Canon or Dissonance? *Journal of Management Studies, 39*(4), 18.

Hildreth, P., & Kimble, C. (2004). *Knowledge Networks: Innovation Through Communities of Practice*: IGI Publishing.

Hildreth, P., Kimble, C., & Wright, P. (2000). Communities of practice in the distributed international environment, *Journal of Knowledge Management*, *4*(1), 27 - 37.

Jenkins, H. (2006). *Fans, bloggers, and gamers : exploring participatory culture*. New York: New York University Press.

Kimble, C., & Hildreth, P. (2004). *Communities of Practice: Going One Step Too Far?* London: Idea Group Publishing.

Kozlov, S. (2008). From co-research to co-creation: Using virtual platforms to engage with people, *European Foundation for Quality Management Learning Edge Conference*. Eindhoven.

Kozlov, S. (2009). "How does an organization learn from co-creation with virtual communities?" In Miendlarzewska, E. (Ed.). Eindhoven.

Kozlov, S., & Reinhold, N. (2008). To Play or Not to Play? Can companies learn to be n00bs, LFG, and lvl-up? (pp. 1-14).

Manu, A. (2007). *The Imagination Challenge: Strategic Foresight and Innovation in the Global Economy*. Berkeley, CA, USA: Peachpit Press.

Murillo, E. (2008). Searching Usenet for virtual communities of practice: using mixed methods to identify the constructs of Wenger's theory. *Information Research, 13*(4).

Ondrejka, C. R. (2004). *Aviators, Moguls, Fashionistas and Barons: Economics and Ownership in Second Life*: SSRN. Available at: http://ssrn.com/paper=614663

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing, 18*(3), 5-14.

Simon, H. (1996). *The Sciences of the Artificial - 3rd Edition*: The MIT Press.

Sitkin, S. B., Sutcliffe, K. M., Weick, K. E., & Dorf, R. (1998). Organizational learning, *The technology management handbook*: CRC Press.

Spinuzzi, C. (2005). The Methodology of Participatory Design. *Technical Communication Washington, 52*, 163-174.

Von Hippel, E. A. (1988). *The sources of innovation*. New York u.a: Oxford Univ. Pr.

Weick, K., & Sutcliffe, K. (2001). *Managing the Unexpected: Assuring High Performance in an Age of Complexity*: Jossey-Bass.

Weick, K. E., & Roberts, H. (1993). Collective mind in organizations: heedful interrelating on the flight deck. *Administrative Science Quarterly, 38*(3).

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*: Cambridge University Press.

Wenger, E., & Lave, J. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

Wenger, E., & Snyder, W. (2000). Communities of Practice: The Organizational Frontier. *Harvard Business Review*(January - February).

Wikipedia. (2009, 05/03/2009). *wikipedia entry: Second Life* Retrieved 07/03, 2009 Website: http://en.wikipedia.org/wiki/Second_Life