Management of Collaboration
Impacts of Virtualization to Learning & Knowledge

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Abstract: The ubiquitous Internet as of today supports virtualized working spaces. But working effectively with each other, finding the right information, gaining the needed knowledge is a complex task in a virtual environment. A new approach of knowledge management through Management of Collaboration (MoC) is needed to establish a virtual Communication and Collaboration (vCC) environment. Business Services through all different platforms have to be harmonized and synchronized. The goal is building up an innovative environment where appropriate people work together effectively on a target, learning and reflecting from each other to gain knowledge.

1 INTRODUCTION

The basis of all progress is innovation and the sustainability of actions. The Internet is changing every aspect of life significantly and constant change is taking place everywhere.

The ubiquitous Internet supports globalization and is a significant driver for virtualization in society and economy. New cooperation structures arise, promoting virtual enterprises with a high flexibility and a limited co-working timeframe similar to a project setup. In a virtualized environment everything is moving closer together. There is only one click to collaborate and communicate. In the same time, where virtually everything moves together, we move away from each other, as we have less personal contacts. Therefore an extended collaboration management in distributed self-learning entities is needed to develop competencies in enhanced virtual communication.

The change also affects the working staff. After the Generation X (digitally unskilled), Y (digital immigrants) and Z (digital natives), we speak today about the Always On (AO) generation (Quitney Anderson, 2012). In addition the working conditions changes also. In the past, the master and his apprentice learn face to face, working on a work piece. In a virtual environment as of today, the working piece mutates to a knowledge artefact including the intensive use of communication and collaboration to exchange information.

The next generation workpeople are AO digital natives. They use social networks extensively and they expect a same kind of co-working environment in business. A new optimized use of digital cooperation practices has to be established, enabling new contract-, working- and management structures in spatially distributed flexible entities. These flexibility and dissolution needs also a new kind of guidance with given boundaries building a protected area. It is also necessary to ensure that all members use the same understanding of the various virtual Communication & Collaboration (vCC) tools and methods.

Applied knowledge management acts between data and competencies. Now vCC creates a new pool of shared commons between the actors and their knowledge on their entities. Harmonization and synchronization between the involved entities becomes an indicator for effectiveness and efficiency in co-working. Virtualization is anywhere.

Technical systems get virtualized to share infrastructure e.g. in a cloud. Workplaces of employees and teams get virtualized to be more powerful and flexible. Processes get virtualized to be more effective and efficient. Organizations get virtualized as an answerer to the actual globalization trend. Finally the business itself gets virtualized to utilize worldwide emerging opportunities.

2 PEOPLE AND CHANGE

Through the ubiquitous Internet vCC is becoming increasingly dominant, not only in the international arena, but also company and group wide. Any employee as of today is a learning bundle, an inseparable unit of a human with his technology interface, acting as knowledge entity, as shown in figure 1. This changes the amount of available data and information and the availability of knowledge, the speed of interaction and the access to information and knowledge significantly.
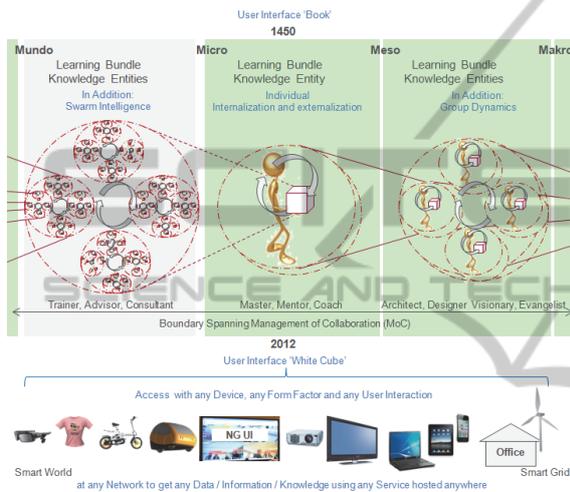

Figure 1: Human with white cube fractal in between.

On the one hand side the human being in figure 1 is in a micro, meso, macro and mundo context to other people. On the other hand side the humans technology interface connected to any network, to get any information, using any service, hosted anywhere in the world.

Equivalent to the white noise an encompassing human-machine interface device with any form factor, any user interaction, creating value between the smart world and the smart grid can be modelled as a white cube. Therefore the white cube represents the whole emerging swarm intelligence of the whole internet society. This huge amount of information and knowledge is filtered through trust and capabilities of each human in his personal surrounding, referring on the perception made in their own social networks.

The ubiquitous Internet as of today influences learning, knowledge and is embedded within ethics and sustainability. The three pillars (swim lines) of sustainability (UN World Summit 2005) are represented trough:

- Social: Development trough lifelong learning;

- Economy: Private dimensions of individual - team –organization development, processes and technology; impacts though changes in generation X Y Z and Always On;

- Ecology: Ethical boundaries.

Considering on virtualization and sustainability, People Organization On Line (POOL) and Change become a complex venture.

2.1 POOL & Change Framework

People having a tremendous impact for instance on profit, power, projects and portfolios, therefore an on-going change is initiated in communication, collaboration, crowd, cloud etc. between the different interacting entities. The entities are also varying in their economical, social and ecological expression. Explicit knowledge is codified, stored and transmitted in different media. Implicit knowledge is represented through know-how, experiences and competences to enable competitiveness between competitors.

The organization of funding, sourcing and distribution processes change from in-house fulfilment to hyper connected boundary free systems. The workbenches transform to virtual platforms. In addition to these in new online platforms trust is needed to enable syndication of unknown entities.

Seen from a systemic point of view, control from such a wicked problem (Conklin, 2007) is an illusion. The option is to simplify or to make it simple. Joint learning and service programs provides a solution: "where I think, therefore I am" (ego cogito ergo sum, Descartes 1644) changes to: "I communicate, so we are; we communicate, so am I" (communico ergo sumus, Pietschmann, 2009).

Lifelong learning with self- motivated pursuit of knowledge for either personal or professional reasons includes single loop, double loop and triple loop leaning (Argyris and Schön, 1994). Single Loop Learning (SLL) covers action and consequences. Double Loop Learning (DLL) extends the cycle with beliefs and Triple Loop Learning (TLL) with context. With the distinction of the previous statements of Descartes and Pietschmann we get a classification between

- Newton Learning with technical 'either, or' analyses within a mechanistic thinking frame and

- Schumpeter Learning with fundamental 'both, as well' analyses in a dialectic thinking frame.

The impact of Big Data (META Group, 2001), information, knowledge and competiveness are

crossed with the three swim lines of sustainability. Fast learning organizations with a high proportion to self-learning services are needed. Education shifts from specialists to generalists and the roles like trainer and trainee are taken alternately.

A framework model of People Organization On Line & Change in a generic learning and business context is shown figure 2.
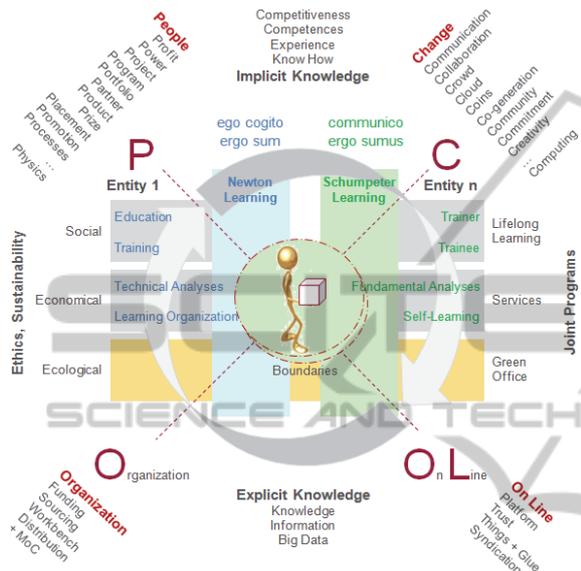

Figure 2: POOL & Change framework.

This setup requires practical solutions for vCC to exchange information, which are also suitable for small and medium-sized enterprises, which enables successful project management based on e-communication and e-collaboration (Haber, Mayr et al, 2010). But it also requires a boundary spanning Management of Collaboration (MoC) to protect against losses in the stack interaction between innovation, facilitation and execution to interact in order to optimize effectiveness and efficiency.

2.2 Management of Collaboration

Through virtualization boundaries are lost. Therefore a protected space with trust for syndication of followers is needed. This virtual ba (Japanese, a shared space for emerging relationships, Nonaka, 1998) needs through all business services harmonization and synchronization.

From its design principle, a lot of different execution platforms for crowd funding, crowd sourcing, crowd workbenches, crowd distribution exists today. Enterprises are still using software, platforms and infrastructure as a Service supporting

the execution to produce products, deliver services or generate co-creations.

The innovation facilitation MoC acts as the boundary spanning glue between the entrepreneurs with their new ideas on the one hand side and the development and delivery forces on the other hand side. Here one of the key tasks is the harmonization and synchronization of all syndicated entities. Therefore a virtual actor in the role of a MoC manager needs a lot of different competences (Franke, 2005) like:

- co-competition competence = avoidance of competitions in the cooperation

- identity competence = sequential and parallel cooperation in different teams

- innovation competence = working agile in a always changing setup

- intercultural competence = integrating of many different cultures

- media based communication competence = using ICT tools and protecting others from information overkill

- cooperation competence = interlocking working processes between networks

- customer integration competence = making open innovation possible

- management competence = adjusting strategies to dynamic requirements

- self learning competence = acquiring skills predictive to keep employability

- self management competence = working against alienation and low social embedding

- transitions competence = securing against discontinuity in earnings

- entrepreneurial action competence = acting proactive seeing chances, reducing risks

- confidence competence = building trust as the foundation of co-generation

- work-learn-life balance competence = avoiding lack of stresses and loads.

To support innovation facilitation execution as a service in addition to the described skill set a generic MoC architecture is needed taking into consideration aspects of the other swim lines in respect of the capability of the people (Curtis, 2001).

In relation to the extensive skill set the following figure 3 shows a MoC manager with different roles. Within the technical and social core processes the MoC manager has to harmonize the infrastructures and to synchronize the different activities. Therefore he plays the role of an ICT generalist, an intercultural facilitator and a learning coach. The

MoC manager has also to empower the system as a support process in the role of a visionary booster.
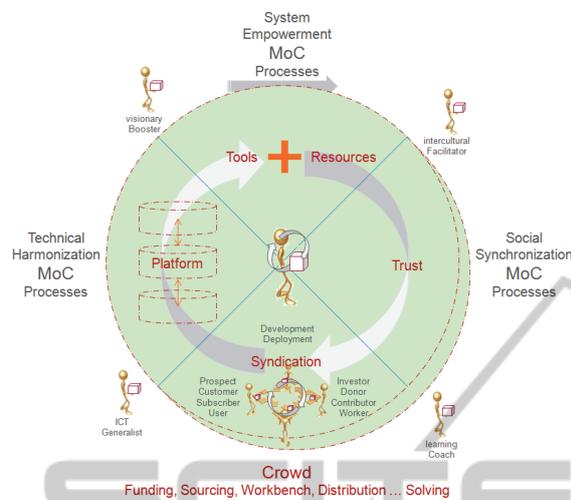

Figure 3: Boundary spanning MoC Manager.

The implemented MoC processes determine the output of the system, depending on their maturity. In relation to MoC and vCC within the different maturity levels the following characteristics are representative:

- MoC maturity level 0 = opportunistic; the SLL learning mode is dominating, there are no specific MoC processes implemented, improvements happen by random.

- MoC maturity level 1 = initial; the SLL learning mode is still dominating (are we doing things right?), there are first specific MoC processes implemented, improvements happen functional.

- MoC maturity level 2 = enabling; the SLL learning mode is extended with DLL bringing beliefs into account, MoC processes are managed to drive improvements.

- MoC maturity level 3 = contribute; the DLL learning mode is still dominating (are we doing the right things?), MoC processes are well defined to initiate improvements.

- MoC maturity level 4 = differentiate; the DLL learning mode is extended with TLL bringing contexts into considerations (how do we decide what is right?), MoC processes are predictable to forecast improvements.

- MoC maturity level 5 = transform; TLL learning mode and optimized MoC processes to handle wicked and super wicked problems.

Learning from the past and learning from emerging futures is covered within the MoC maturity model on top of the whole knowledge chain between big

data to knowledge and know how to competitiveness.

3 CONCLUSIONS

An important aspect from MoC is the human capital of any organization. The actual research focuses on the described cross functional boundary spanning MoC context using vCC to enable a self-learning organization.

Therefore competency portfolios of individual co-workers are required, in which their skills and knowledge claims are retained. For the analysis assessments in combination with real life cases in an e-collaborative environment should be used to identify and reproduce technical knowledge, management knowledge, personal knowledge and emotional knowledge of these individuals. The education level should also be continuously recorded and evaluated. The resulting competency portfolio shows the used and unused potential of an individual to develop a custom training plan.

Knowledge capacities that are strategically important in the corporate portfolio can be used effectively and immediately stepped up. In addition, expertise is elicited, which is essential for the future direction of the company. Skills and knowledge carriers can also be involved in the training process focused on the other employees. This training will be in the company ideally as a hands-on training sessions held.

A suitable instrument for this purpose is the top pre-defined e-collaborative environment that allows the staff in working with others to learn from others and themselves personally. Management of Collaboration offer companies a new approach to knowledge management in combination with lifelong learning.

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