

Online knowledge communities: meeting places for continuing professional development

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Abstract: This paper describes the concept of Online Knowledge Communities (okc) as meeting places for continuing professional development (cpd). An okc is defined as a social network of members, who are online and are organized by making use of an online knowledge center. The okc has a particular group culture and members are involved in appropriate information processes to develop and exploit a specific knowledge domain. The author anticipates that the application of okc for cpd will have positive effects on the professionalism of the community members and on the development of knowledge assets in knowledge intensive organizations.

1. INTRODUCTION

Attractive online places for the continuing professional development of professionals, legitimate places, fully personalized, offering a wide range of knowledge services, flexible, highly interactive, and reliable - that has been the focus of our research into the development of successful online knowledge communities.

Our definition of a professional is a practitioner who possesses specialized knowledge and skills, often gained as a result of long and intensive academic preparation. They are characterized by or conform to the

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technical or ethical standards of a profession, operate with a high degree of autonomy and exhibit a courteous, conscientious, and generally businesslike manner in their workplace.

Continuing professional development (cpd) is needed for a number of reasons - the continuing development of professional competences, the rapid development of specialized knowledge and technologies and the increasingly flexible working contracts that force professionals into constant competition with fellow practitioners. The big issue for a professional is not how to become a practitioner, but rather how to stay one and develop further as a professional.

Current developments in Information and Communication Technologies (ICT), especially the developments associated with the Internet, have led to an enormous growth in online educational and training services for all educational levels, including professionals (e-learning). The main characteristic of these services is the management of courses. Educational institutions offer course management environments like Blackboard (www.blackboard.com) and WebCT (www.webct.com) to accommodate courses for a wide variety of professions. Such online courses hold great potential for the efficiency and effectiveness of online institutional-based education, mainly due to their flexible, interactive, multimedia-oriented, and personalized character. In general however, online courses still have a schedule, are time-framed, focus on a specific defined theoretical-based topic and are supply-driven.

Professionals are initiated into the traditions of communities of practitioners and the practice world they inhabit (Schön 1987). They seek just-in-time legitimate applicable knowledge, they need to reflect-in-action, to train themselves at the workplace, and be supported by social networks of fellow professionals. Clearly, online courses offered by educational institutions have a limited value for professionals. However, characteristics of online services like flexibility, interactivity, multimedia and personalization are essential for efficient and effective continuing professional development.

The concept we want to present here as an answer to cpd is 'online knowledge communities' (okc). We describe an okc as a social network of professionals aiming at the development and exploitation of a particular knowledge domain that is, to a certain extent, online (Vries et al 2001). Simply stated, we provide the communities of practitioners with electronic networked information and communication facilities and, based on these facilities, we broaden the scope to communities that develop and exploit particular knowledge. As Wenger and Snyder (2000) explain, 'a new organizational form is emerging that promises to complement existing structures and radically galvanize knowledge sharing, learning, and change'.

So, from our point of view, these networked facilities do not just support communities of practitioners but enable community forms that would not be possible without them.

2. CONTINUING PROFESSIONAL DEVELOPMENT

This concept has been around for a long time. We prefer the use of cpd in contrast to lifelong learning or continuing education because professional development occurs due to formal and informal learning in the course of practice - for instance by 'reflection-in-action' (Gardner 1978; Schön 1987). Formal and informal learning are synergistic and are vitally important for the development of professionals. So cpd is not only about learning or education - it is about a continuing process of professional development.

Cpd is in tune with 'modern' concepts like the learning organisation (Senge 1994), the knowledge creating company (Nonaka and Takeuchi 1995) and the theory that the continuing development of knowledge assets can secure the competitive advantage of organisations in the information economy (Boisot 1999). Boisot describes knowledge assets as stocks of knowledge from which services are expected to flow for a period of time, while others speak of organisation specific resources that are indispensable to create values for the organisation (Nonaka et al 2000). These authors try to concretise organisational knowledge by referring to 'stocks of knowledge' and 'specific resources' and they stress the significance of the assets for organisational success. These assets can be the professionals themselves, documents, methods and best practices. Effective cpd implies that the development of professionals secures the optimal development of knowledge assets, which in turn has a positive effect on professional services.

So, cpd is not only a must from the perspective of a professional, but it is a shared responsibility of the organisation (as the professional workplace) and the professional. We see cpd as a process of continuing development of knowledge, skills and attitudes of professionals, by means of formal and informal learning in the course of practice.

3. ONLINE KNOWLEDGE COMMUNITIES

We stated in the introduction that we consider okc as places for cpd, or to be more precise the places for continuing development of knowledge, skills and attitudes of professionals, by means of formal and informal learning in the course of practice. The question is, what are okc?

The concept of okc is based on the ideas behind virtual communities:

"Virtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace." (Rheingold 2001)

So, the essence of a community is a stable, social aggregation based on communication - in this case on online communication. Here virtual refers to 'Internet-bound' instead of 'space-bound'. We prefer to speak of online communities instead of virtual communities. Virtual implies that it does not really exist and we want to consider existing, real, active communities. In general, online communities will have a specific mission, which aggregates 'the group of people'. The mission can be grounded in marketing (online marketing communities), business (online business communities), shared experiences (communities of practice) or specific interests (online health communities).

Online communities can be characterised on a number of dimensions. These dimensions reflect specific traits that describe the online community. Examples of dimensions based on organisation studies include: formalisation - the amount of written documentation; specialisation - the degree to which community tasks are subdivided; complexity - the number of sub activities or subsystems within the organisation; goals and strategy - the overall purpose and scope of the community; community technology - the actions and techniques used to change community inputs in outputs (Daft 1995). Besides the community technology dimension that means the community functions for the greater part online, we seek to identify the community strategic goals in the continuing development and exploitation of a particular knowledge domain. We interpret knowledge here as the set of knowledge assets of an okc, which are exploited by professional services.

In our research in the development of okc, we take a social network approach (Knoke 2001). Knoke mentions three basic assumptions of this approach:

- that the social structure of any complex system consists of stable patterns of repeated interactions connecting social actors to one another;
- that these social relationships are the primary explanatory units of analysis, rather than the characteristics of the individual actors;
- that the perceptions, attitudes and actions of organisational actors are shaped by the larger structural networks within which they are embedded, and in turn their collective behaviours can change these networks' structures.

We see an okc as a social network of members, who are online and are organized via an online knowledge center. They have a satisfactory or

acceptable group culture and are involved in appropriate information processes to develop and exploit a certain knowledge domain (Figure 1).

At the heart of an okc is the professional network - chains of associations that link professionals, the members of the community, with common interests, problems and goals. In this network we distinguish various roles, which describe the expected behaviours, responsibilities and privileges of members. Examples of such roles are students, teachers, junior researchers, senior researchers and practitioners. Members may switch roles depending on the context. In Figure 1 we illustrate three examples of roles: practitioners, apprentices and experts.

The professionals in this network interact (in the sense of mutual or reciprocal action) in order to develop and exploit a particular knowledge domain and to develop and maintain social associations. Based on the work of Klein & Hirschheim (1993) who described the conceptual and philosophical foundations of information system development, we distinguish two dimensions of 'knowledge community interactions' - work and social interaction. Work represents the systematic struggle that members perform in response to inputs in order to achieve given ends, thus enabling the okc to develop and exploit knowledge and legitimatise its existence in relation to its environment. Typical work activities include experts who research, practitioners who develop themselves or coach others, and apprentices who learn or practice. Social interaction ideally involves all the relevant stakeholders of the okc. By utilising experiences and other information gained from that okc, as well as from social interaction with the environment, the stakeholders of social interaction should communicate to reach mutual understanding about the development and exploitation of knowledge and to change it accordingly. Examples of social interactions are meetings, discussions and chat sessions in which the work is discussed.

This professional network is organised, so an okc can be considered as an organisation although it may not necessarily be an organisation in the sense of a legal body. An organisation can be seen as a social entity that is goal-directed with deliberately structured activity systems and a permeable boundary (Daft 1995). An okc can be seen as an adhocracy, characterized by little formalisation, coordination by mutual adjustment, highly specialised tasks, a high level of formal education and training, a typical clan control and little hierarchy of authority in the sense of span of control.

An adequate (i.e. enough for the purpose) community culture is crucial if an adhocracy is to function. A culture can be described as the shared set of values, beliefs, behavioural expectations, and artifacts that comprise the way of life of a people (Renzetti and Curran 1998). Culture distinguishes one group of people, for instance the members of an okc, from another and gives members a sense of belonging - a feeling of 'we-ness'. The importance of a

community culture is described by Daft (1995) who refers to an organisational culture as:

"it is culture that guides day-to-day working relationships and determines how people communicate within the organisation, what behaviour is acceptable or not acceptable, and how power and status is allocated."

Renzetti & Curran describe six cultural elements: symbols, language, values, norms, technologies and artifacts. When developing an okc cultural choices will be made with respect to these elements.

As we already explained community technology is a critical dimension allowing the community to function online. The function of these technologies can range from information distribution to highly developed collaboration and support platforms. We use the concept of an online knowledge centre as the core okc technology. An online knowledge centre is seen as a place for online interaction, offers the services needed for professional development and for the development and exploitation of knowledge. Online interaction, from a system point of view, can be described in many terms - sender(s), receiver(s), (a-)synchronic, media rich, noise or media formats. Examples of services are information access, information dissemination, communication, meeting, research, support, coaching, training and study and knowledge management.

The centre has to be usable i.e. easy to learn and easy to use. It works from the technological perspective by means of the Internet. Technically it is digital, networked, hypermedia and database-driven. Digital data means that all information (files, messages, chats, archives, discussions) is digitized, so it can be easily edited, maintained, transmitted, copied, and disseminated - all at a low cost by means of computers. Networked means that tasks and activities take place through a collection of interconnected networks of computers spanning the globe and running the Internet Protocol. As a result members of the group are flexible in place and time - performing tasks and activities jointly with other members. The concept of hypermedia refers to the integration of multimedia and hypertext. Multimedia can be described as an integration of text, graphics, still and moving images, sounds and any other medium where every information object can be represented, stored, transmitted and processed digitally. Importantly these objects can be very different, for instance a multimedia document, an online video communication or an online discussion. Hypertext is a text with links to other texts. So, hypermedia can be described as pieces of multimedia information with links to others. Hypermedia is attractive and flexible in use and is a particularly effective medium due to its media richness. The last technical characteristic mentioned is database-driven, implying that data is

organised in records in one or more databases. This allows members to organise, access, and store data in a variety of formats. Members can be provided with information services that provide comprehensive information.

The last okc trait we want to mention is the appropriateness of information processes. These processes refer to the ways members carry out concrete tasks and activities. From the perspective of an okc, these tasks and activities concern the continuing development and exploitation of knowledge, skills and attitudes of professionals. Based on Boisot (1999) we distinguish three basic information processes - codification, abstraction and diffusion.

Codification is a process of giving form to phenomena or to experience. Abstraction is a process of discerning the structure that underlies the forms. Diffusion is a process of spreading information.

Boisot brings these three processes together in the I-space, which can be used to examine the flow properties of information within different agent groupings as a function of its degree of codification and abstraction. That means that it is possible to design typical information processes based on such flow properties. Examples of typical processes are to elicit, to train, to share, to inform and to publish. These typical processes have to be formalised, indicating their importance for the development and exploitation of knowledge.

We have described eleven okc traits, which are presented in Figure 1. These traits are interrelated. The social associations, the interactions and the community members represent the professional network. This network is organized as an adhocracy, has a typical community culture, and, in order to carry out concrete tasks and activities (information processes) makes use of an online knowledge centre. The strategic goals imply the development of knowledge assets exploited by professional services.

We mentioned that an okc functions for the greater part by means of the Internet. Naturally not all member activities - communication, cooperation or training - have to take place on the Internet. In many situations, if possible, face-to-face communication is preferred to online communication. This is not always possible, effective or efficient. However, the media richness of online communication will continue to develop, due to the growth in bandwidth of data.

People will become increasingly used to online communication which may exercise a positive effect on its quality. Despite these developments, a mixture of face-to-face and online communication will take place depending on member contexts.

We have described the concept of online knowledge communities, a social network of members, who are online, are organised and who make use of an online knowledge center. The okc have an adequate group culture and

are involved in appropriate information processes to develop and exploit a certain knowledge domain. Just what do we expect from the use of okc for cpd?

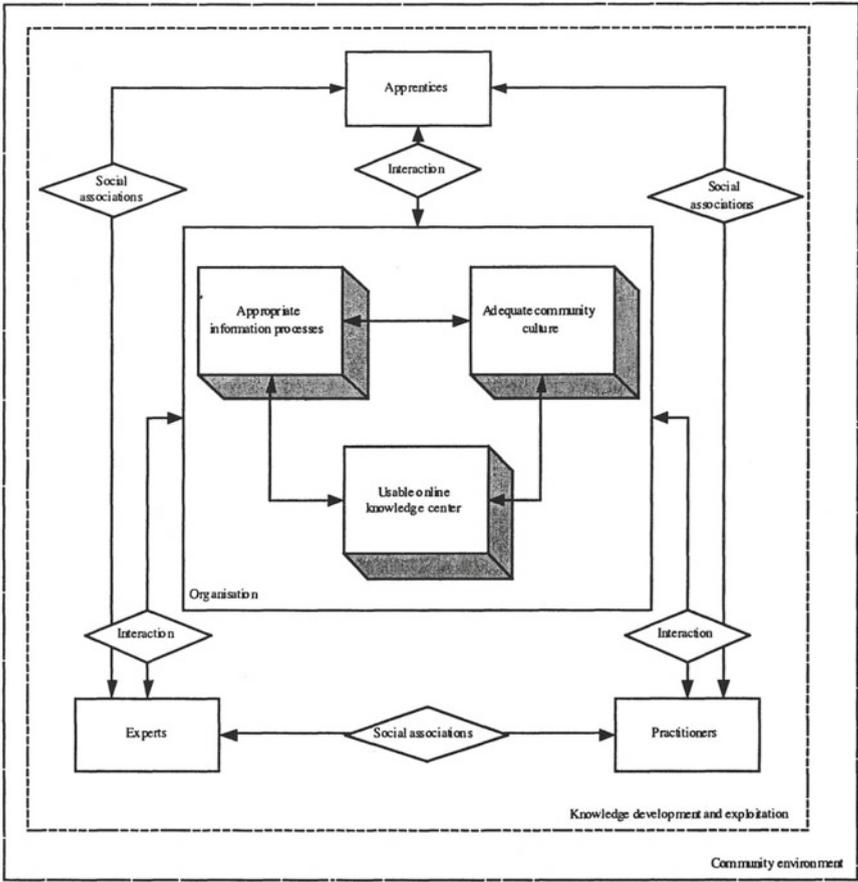


Figure 1. An online knowledge community

4. CONTINUING PROFESSIONAL DEVELOPMENT IN ONLINE KNOWLEDGE COMMUNITIES

As stated, we see cpd as a process of continuing development of knowledge, skills and attitudes of professionals, by means of formal and informal learning in the course of practice. The use of okc for cpd implies that an okc has to support this process. Becoming a member of such a community, a professional will have a place for cpd that gives:

- individualised, flexible and easy access to a coherent and actual knowledge domain;
 - a range of opportunities to interact with like-minded persons;
 - a range of opportunities to develop and exploit the knowledge domain, by for instance applying knowledge, learn from it, guide others, disseminate ideas and results or doing research;
- in a professional network.

But the question to be answered is: what do we expect from this use? Given the discussion, our premise is that the membership of professionals of an okc has positive effects on:

- the professionalization of the professionals, expressed in competences like knowledge, skills, experiences and attitude;
- the development of the knowledge assets, expressed in a growth and elaboration of the professional knowledge, applicability of knowledge, legitimacy of knowledge.

However, the organisation of the okc has to be adequate, the professional network has to be well developed and has to ensure the continuing development and exploitation of the knowledge domain. Traits of okc can be seen as factors that influence the development of the professional network in an okc.

Insight into these factors, which can be held responsible for the development of okc as meeting places for cpd, helps us to identify the critical success factors of okc's and cpd, to identify the relationships between these factors, and to intervene in the development of okc.

5. CONCLUSION

Clearly, we expect that the use of okc for cpd will have positive effects on the quality of continuing professional development. Based on our concept, a number of okc are developed, for different knowledge domains (See for instance <http://www.concourse.nl>). We will research the development based on the described development factors and the results will give us insight into the effects.

REFERENCES

- Boisot, M. H. (1999) *Knowledge Assets. Securing competitive advantage in the information economy*. Oxford University Press, Oxford.
- Daft, R. L. (1995) *Organization Theory and Design*. West Publishing Company, St. Paul.
- Gardner, R. (1978) *Policy on continuing education: A report with recommendations for action*. The York Centre, University of York, York.
- Klein, H. K., and Hirschheim, R. (1993) The application of neohumanist principles in information systems development. In *Human, organizational and social dimensions of information systems development*, D. Avison, T. E. Kendall, and J. I. DeGross (eds.), Elsevier, Amsterdam. pp. 263-280.
- Knoke, D. (2001) *Changing organizations. Business networks in the new political economy*. Westview Press, Boulder.
- Nonaka, I. and Takeuchi, H. (1995) *The Knowledge Creating Company. How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press, New York.
- Nonaka, I., Toyoma, R. and Konno, N. (2000) *SECI, BA and Leadership: A unified Model of Dynamic Knowledge Creation*. Long Range Planning, 33, 5-34.
- Renzetti, C. M. Curran, D. J. (1998). *Living Sociology*. Allyn and Bacon, Boston.
- Rheingold, H. (2001 july) Virtual community services.
[<http://www.rheingold.com>.]
- Schön, D. (1987) *Educating the reflective practitioner*. Jossey-Bass Publishers, San Francisco.
- Senge, P. M. (1994) *The fifth discipline. The art and practice of the learning organization*. Currency Doubleday, New York.
- Vries, S. A. de, Roossink, L. L. and Moonen, J. C. M. M. (2001) *De ontwikkeling van online leercommunities in het studiehuis*. NWO 411-211-04. Universiteit Twente, Enschede.
- Wenger, E. and Snyder, W. M. (2000) *Communities of practice: The organizational Frontier*. Harvard Business Review, 78(1), pp.139-145.