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# **THE ROLE OF SOCIAL TECHNOLOGIES IN THE OPERATION OF VIRTUAL COMMUNITIES OF PRACTICE IN COMPANIES**

## **Introduction**

Modern companies are increasingly more open to grass-root initiatives. This trend is manifested, among other things, in the formation of virtual communities of practice (VCoP), as forums for integration and exchange of expert knowledge in companies. Proper use of this tool offers a range of benefits for the company, such as improved competitiveness, flexibility, effectiveness, responsiveness to environmental stimuli, and innovation. Technological support is one of the most important factors to determine the success of VCoP, with social technologies perceived as the best available method of stimulating their development. This paper analyses the impact of social technologies upon virtual communities of practice in companies, in relation to the key areas of VCoP operation.

## **The nature of virtual communities of practice in companies**

The concept of virtual communities of practice refers to informal groups of employees vitally interested in solving common problems and concerns by sharing their knowledge, expertise, opinions and skills, and by creating new knowledge. In supporting the realization of collective tasks, the VCoP offer also strong support for the company as a whole [USAI13]. Virtual communities of practice can be distinguished into two main forms [Poto12]:

- self-organizing communities,
- sponsored communities.

The self-organizing communities are informal and independent groups accessed on a voluntary basis for the purpose of reaching collective goals and pursuing common interests.

The sponsored communities are groups initiated and supported by the company, for example by means of appointing community leaders and providing resources needed for VCoP operation, but without interfering in VCoP activities [Poto12].

The virtual character of CoP is a direct result of the challenges faced by companies in an increasingly more dispersed environment, characterized by limited access to traditional, face-to-face communication (working sessions, conference meetings, discussions), by regional and networking distribution of organizational structures, and by the increased mobility of both the company executives and the employees.

Virtual communities of practice have a strong impact not only on the community members, but also on the company as a whole (see Table 1).

Table 1

The impact of a VCoP on community members and on the company

Beneficiary	Short-term impact	Long-term impact
Company	<ul style="list-style-type: none"> <li>Solves problems by providing valuable solutions</li> <li>Saves time</li> <li>Disseminates knowledge</li> <li>Provides synergy between units</li> <li>Provides the opportunity to reuse the available resources</li> </ul>	<ul style="list-style-type: none"> <li>Helps utilize the strategic potential</li> <li>Tracks current trends in the field</li> <li>Stimulates innovation</li> <li>Retains talents</li> <li>Participates in the generation of new strategies</li> </ul>
Community members	<ul style="list-style-type: none"> <li>Allows individual members to gain knowledge</li> <li>Disseminates expert knowledge</li> <li>Builds trust</li> <li>Supports the spirit of friendship and the sense of belonging</li> <li>Improves work effectiveness and productivity</li> </ul>	<ul style="list-style-type: none"> <li>Offers support for personal and professional development</li> <li>Builds employee reputation</li> <li>Helps solidify the employee's professional identity</li> <li>Forms valuable networks</li> <li>Offers means for the verification of professional competences</li> </ul>

Source: Own research based on [Comm14].

As shown in Table 1, virtual communities offer a range of benefits for both the company and the individual members of the community. It must be noted that some of the effects are similar for both groups. In the individual dimension, the benefits are observed in such areas as development of professional competences, building of organizational roles, effective motivation of employees and, most of all, wider participation of employees in company strategic decisions.

Benefits for the company are largely related to the facilitated transfer of knowledge, which helps tackle problems in a prompt and effective fashion, and has the effect of stimulating innovation. Development of professional competences helps generate and retain new talents. Virtual communities of practice can also offer strong support for the company in the phase of introducing strategic changes.

They provide a lot of benefits and create opportunities which cannot be found in traditional organizations. They make possible to develop a holistic understanding and help to increase flexibility and responsiveness [Tarn12].

The operation of VCoP in companies is determined by:

- high quality of shared content, resulting from the involvement of professional experts,
- effective communication, supported by the use of new technologies,
- employee involvement and readiness to share their knowledge,
- proper organizational culture, equipped to fully embrace the role of VCoP and utilize its effects.

Virtual communities of practice, as communication platforms and joint activity forums, are employed by many large corporations under a variety of appellations [Poto08]:

- Learning Communities – Hewlett-Packard,
- Thematic Groups – World Bank,
- Family Groups – Xerox,
- Peer Groups – British Petroleum,
- Knowledge Networks – IBM.

Regardless of the moniker, the idea behind the operation of those communities remains consistent with the VCoP concept.

### **Identification of key areas of VCoP operation**

The analysis of mechanisms involved in VCoP operation allows for differentiation of 5 fundamental areas: purpose, content, connections, conversation, and information context (Figure 1).

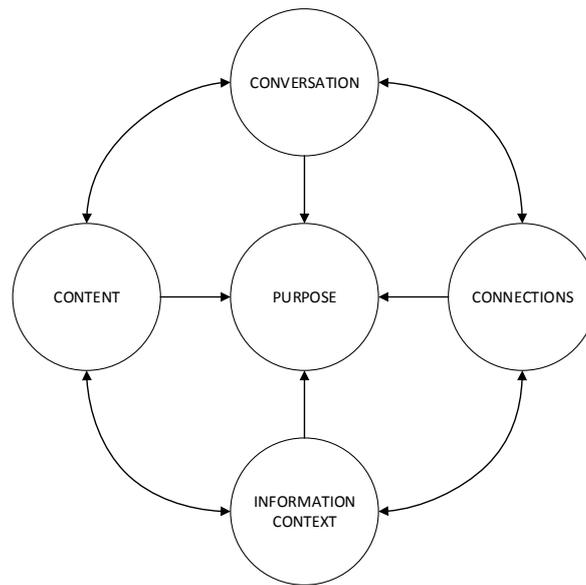


Fig. 1. Key areas of VCoP operation

Source: [HoKi05].

The quality of content transmitted within VCoP is of fundamental value for building and enhancing the collective knowledge. It is in this area that four important objectives are being addressed: stimulating the involvement of employees through instant gratification, ‘socialization’ of new members of the community through creation of content targeted to this group, formulating the basis for conversations, and collective creation of new knowledge in the field [HoKi05]. Generating high quality content is a challenge for virtual communities, since the employees are fairly reluctant to share their knowledge. This particular challenge can be largely facilitated by correlating this area with other areas of VCoP operation. For instance, expert knowledge is more readily shared in a conversation if the participants are in close social relations (connections). Another form of content generation is the use of information context associated with various discussions within the community.

Conversation is the most effective platform for dissemination of knowledge (content creation). Cooperation between employees (connections) requires communication. This, in turn, determines the future shape of interpersonal relations and, consequently, leads to creation of new forms of teamwork. Ideally, conversation provides the following benefits [BrPR09]:

- improved information flow,
- support for decision-making processes,

- support for creative problem solving,
- building the spirit of teamwork,
- strengthening the interpersonal relations between employees.

With respect to communities of practice, conversation has the effect of reducing the redundancy of information, by eliminating low utility content and focusing on meaningful exchange.

Connections – another key area of VCoP operation – helps build interpersonal relations and trust between community members. Trust, in this context, can be interpreted on three levels, namely [Krzy12]:

- defence – in relations practically devoid of trust,
- compromise – the atmosphere of trust and mutual understanding, with strong emphasis on the appropriateness of communication,
- synergy – the highest possible level of trust, offering the participants a sense of satisfaction from being part of a unique venture.

In the context of VCoP, the defence level is practically non-existent, since it obviously defies the underlying purpose and the very idea of CoP.

In this area, it seems essential to focus on feedback information and on communication based on commonly shared values and views. Through connection, the employees working in a dispersed environment are spontaneously drawn into community projects and more willing to actively participate in knowledge dissemination (content creation).

Information context, in turn, facilitates effective and efficient creation of new knowledge. Community members share common knowledge: they know its sources, the authors, the circumstances that led to its creation; they also have easy access to other bits of knowledge associated with the problem at hand (connections). This facilitates common understanding of the content [Mako12]. This context is particularly significant for virtual communities, characterized by strong dispersion of its members.

Setting transparent purposes is an important element of CoP operation. From company perspective, the most important benefits of this approach include:

- propagating the understanding of CoP potential and its utilization,
- offering organizational and technological support for knowledge dissemination,
- stimulating the spontaneous initiation of projects by building the awareness of the need to develop knowledge and by offering support in preparatory phases,
- gaining support for the community and strengthening its role,
- offering better integration between community activities and the strategy and organizational culture of the company.

Purpose is expressed in four key areas: content, conversation, connections, and information context. Each of the above elements may have a stimulating or hampering effect on the expression of purpose [HoKi05].

Thus, the success of a virtual community of practice is largely related to the appropriate selection of purpose, content, conversation, connections, and information context, since the effectiveness of VCoP is influenced by all the above areas, and by their mutual correlations.

### **Social technologies and their impact in key areas of VCoP operation**

The task of building virtual communities of practice should be supported by improved potential of technological infrastructure and by provision of tools for effective communication, cooperation, and dissemination of knowledge. This postulate is based on the reported correlation between the level of the user's technological competences and his/her readiness to share knowledge [Keye13].

Social technologies offer a good environment for VCoP, since they are – by design – focused on building and developing virtual communities. A virtual community is characterized by [KuSo09]:

- creativity and openness of its members – within the bounds of the community,
- rapid and effective generation of aggregated knowledge,
- high quality (reliability) of personal data shared on public profiles,
- uniformity, particularly in the case of services based on user profiles,
- the existence of both formal and informal networks of relations between community members.

Thus, it may be concluded that certain features of social technologies are identical with those of virtual communities of practice. Therefore, companies may utilize social technologies to help virtualize the operation of such informal employee groups. Speaking of social technologies and their utility for VCoP purposes, it seems that best potential can be found in the following solutions:

- wiki – a tool supporting cooperation between multiple users in content creation, without authorisation instruments and with potential for public access [KuSK09], based on an open information structure and a network of contextual links between individual entries,
- blog – a webpage presenting chronological entries, typically the effect of the author's individual and spontaneous reflexion, opinion or subjective interpretation of facts, subject to community discussion in the form of commentaries and cross-links to other blog sites,
- folksonomy, social bookmarking – a tag-based system offering multi-thread categorization of online content, managed by users, with potential to form contextual links between entries,

- Web syndication, RSS (Really Simple Syndication) – a mechanism designed to provide subscribers with updated content in selected streams, based on XML markup language [KuSK09],
- mashup – hybrid applications offering integration and aggregation of data from multiple sources, and presenting the output in an entirely new form [Chow09], using both private and public data repositories and a range of visualization tools supported by browser applications,
- content sharing services, offering publication, sharing and use of certain resources, with basic interaction support in the form of commentaries and grading systems,
- social network services, supporting the operation of virtual communities, multi-channel communication and social interaction, with membership based on verifiable user profiles.

The spectrum of potential applications of social technologies in the context of VCoP can be analysed in many dimensions. For the purpose of this study, the authors decided to analyse the prospects for their application in key areas of VCoP operation. This analysis was conducted on the basis of author's experiences with corporate social networking services implementations in April 2014 in Poland. The results are presented in Table 2.

Table 2

The prospects for the use of social technologies in key areas of VCoP operation

Area	Selected technologies	Key prospects for utilization
1	2	3
Content	wiki	content generated collectively and in real time, as a joint effect of collective intelligence
	blog	individualized content published for the purpose of improving its value through confronting it with the views of other community members, provides a report of daily activities
	web syndication, mashup	content enriched through aggregation of uniform data from various sources (such as RSS), or non-uniform data; the output is presented in a cohesive form, providing an entirely new value
	content sharing services	content disseminated across community, subject to social verification, improved through feedback and peer evaluation
Conversation	blog	communication via commentaries to published entries, typically uniform in context (related to the issue addressed in the entry), with potential to broaden the scope or even modify the content in response to critical argumentation, with some support for discussion through cross-links to other blogs and a system for tracking each such link (automatic – Pingback, or intentional – Trackback)

Table 2 cont.

1	2	3
	social networking services	synchronous communication through chat/IC functionality, on dedicated private or public channels; asynchronous communication via internal communication channels (private messaging) or via publicly accessed channels (commentaries, integrated discussion forums)
Connection	social networking services	the structure of relations between community members offers potential for identifying and tracking correlations between members (social graph), as well as tracking the interests of individual members (interest graph); the system can be used to track individuals based on social relations and similar interests (for instance, Facebook's Graph Search, offering identification based not on personal data, but on interests and other socio-demographic features, either expressly stated on user profiles or deduced from their on-site activities)
Information context	wiki	uninhibited creation of content structure through contextual links, based on keywords i.e. titles of the relevant wiki entries, to show the topic in a much broader context
	blog	the context of individual entries can be expressed through links to other blogs/entries
	folksonomy	with tags as a simple content metadescription instrument, users can easily track similar content, and build content maps in the form of tag clouds
	mashup	building context through aggregation of content from various sources and in various formats, offering an entirely new, broader perspective on the problem at hand
	social networking services	multi-dimensional presentation of content, in various forms and formats, with multimedia support and in a broad, relational context (origin and circumstances of the entry, social reactions to it)
Purpose	wiki	through cooperation in content creation, users may share and improve their knowledge, support other members by providing relevant content, community integration through shared purposes
	blog	recording of daily activities (an activity log of community), serving as an initiative center and tool for motivating project participants, and for presentation and promotion of the results for the purpose of gaining approval and increased support from company executives
	web syndication, mashup	support for knowledge dissemination, integration of transmitted content, and setting them in proper context, with potential to produce valuable content that can be utilized for educational purposes or for promotion of the CoP idea
	content sharing services	support for knowledge dissemination, publication and updating of educational content and promotion material which is shareable by other users
	folksonomy	building of content structures to organize knowledge produced collectively, offering support for user education by easy access to relevant content, good potential for promotion of results within a company
	social networking services	the existing network of social relations may be utilized for educational and promotional purposes; potential for knowledge dissemination and for building company organizational culture

Source: Authors' own study.

For each area authors try to find the most relevant social technologies and show their potential applications. The specific characteristics of each presented technology determines their usage in different areas of VCoP's activities: knowledge (content) building, communication, promotion of results, building stronger relationships etc. Many case studies (eg. [PoIs14]) has shown that without suitable tools and platforms, it is difficult to achieve the best feedback and benefits from VCoPs' activity. Such tools improve process of conversion of tacit knowledge and can help in the adoption of strategic change and new business processes.

Based on the above analysis, it may be concluded that social technologies determine the operation, and even the creation of virtual communities of practice. They offer the potential for generating content from collective intelligence by facilitating effective conversation between the community members. In addition, social network connections and broad information context can greatly improve the utility of CoP for companies.

## Conclusions

The dynamic expansion of social technologies in business environment has a significant impact on all business processes. Virtual communities of practice (VCoP), as instruments providing support for knowledge dissemination in companies, are by design equipped to fully exploit the potential of those tools. The authors argue that social technologies are of fundamental significance in all key areas of VCoP operation: content, conversation, connections, information context, and purposes. They especially help in collective knowledge building and strengthen personal relationships between members, what can lead to better staff integration and higher level of their identification with company objectives. It seems that their future impact will be even greater, due to the continued virtualization of many business activities and the unrelenting progress of new mobile technologies.

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## ROLA TECHNOLOGII SPOŁECZNOŚCIOWYCH W DZIAŁANIU SPOŁECZNOŚCI WIRTUALNYCH PRAKTYKI W PRZEDSIĘBIORSTWACH

### Streszczenie

W artykule autorzy analizują oddziaływanie technologii społecznościowych na społeczności wirtualne w przedsiębiorstwach w relacji do kluczowych obszarów działania wirtualnych społeczności dobrych praktyk. W pierwszej części artykułu autorzy przedstawili charakterystykę społeczności wirtualnych. W części drugiej dokonali identyfikacji kluczowych obszarów działania wirtualnych społeczności. W części trzeciej zostały przedstawione technologie społecznościowe i ich oddziaływanie na kluczowe obszary działania wirtualnych społeczności.