Designing and Operating Communities of Practice for Managing Knowledge: Lessons from a Comprehensive Global Knowledge Management Survey

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Introduction

The most difficult task of managing knowledge in organizations is the management of tacit knowledge—the uncodified knowledge that resides in the minds of employees and is very difficult, or too dynamic, to be codified to be usable. Employees acquire it through experimentation, experience, and erudition. And the latter is the only means by which it is disseminated. Organizations have always found it difficult to manage, but even more difficult has been its transference from one knowledge worker to another. Nevertheless, history tells us that humans, through social processes, have successfully engaged in transference of tacit knowledge for as long as they have operated in groups. Going back, examples of such groups or communities, in concept, without bearing the name communities of practice, appear in records of classical Greece and the Middle Ages (Wenger 2006). Such groups dominated the societies of their times and controlled power. Most recently, during the 1970s, the Japanese attempted the management and transference of tacit knowledge by employing *quality circles.*

In essence, a community of practice (more commonly referred to as CoP) came to the business world mainly during the last decade. Just like the communities of the ancient times described above, and the quality circles of the 1970s, communities of practice (CoPs) become a forum for interaction to create and disseminate knowledge among members of a community pulled together by their interest in knowledge

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common among them. As we will describe in later sections of this chapter, organizations use CoPs for different goals and name them differently. One type of CoP described by Wenger et al. (2002) for bringing together people with common problems, concern, and/or passion is named *organizational communities of practice.* While in operation, any CoP may appear to be like another version of a *quality circle;* in its formation and function, it is quite different and the CoP system is relatively new. The major defining point of a CoP, according to Wenger and Snyder (2000), is that it operates within the realm of an organization. The basic aim of operating a CoP is to be able to get enhanced performance and innovation from knowledge workers (Brown and Duguid 1991). Because of the importance of innovation from communities of practice, Coakes et al. (2011) emphasize a special form of CoP named the community of innovation (CoInv).

Defining CoP

The most commonly accepted definition of a CoP is that of Wenger's (2006) whereby a community of practice is a group formed by those who engage in collective learning in a domain of human endeavor that is shared by all in the group. It is a group of people with common interests coming together to learn more about their interests by engaging in regular interaction to share their ideas. Although Wenger (2006) does not specify, however, it is implied that CoPs, in addition to learning, also involve teaching.

Wenger (2006) gives three characteristics identifying a community of practice: (1) A CoP is not a collection of random people. These people share a *domain* of similar interests and a desire to learn and develop their knowledge base of these interests. (2) The second characteristic of a CoP is *community,* which means that members of a CoP identify themselves with their community of practice and want to develop relationships with other members of their CoPs. (3) The third characteristic of a CoP is *practice,* conveying emphasis on practice of the knowledge they learn and impart in the CoP. They are considered practitioners of the knowledge of their CoP. They share practice in approaching and solving problems that come up at their community of practice.

All members of a CoP have to take an important role in the functioning of their CoP. Members not taking an active role in their CoP could make the CoP irrelevant which will eventually cease to exist. According to Wenger and Snyder (2000), CoPs are informal in operation. Communities of practice organize themselves, set their agenda themselves, and decide their leader(s) themselves. Membership of a CoP is voluntary. Only those who find the utility of a CoP to them should join. CoPs should not be formed by the management. Management should neither encourage nor discourage CoPs. CoPs should come up naturally at the initiative of those who see benefit coming to them from forming, operating, and belonging to it. The members should set the CoP parameters to assure that only what interests them remains

What technology or other tools are used to manage explicit knowledge in your organization?

- Intranet
  - Source of information
  - Every one in touch
  - Learn about the company (business, policies, strategy, goals)
  - Learn about competitors
  - HR (feedback, employee benefits, training, development)
  - Internal knowledge repository with update info and standards
- Blogs
  - Employees discussions
- Chat
  - Flexibility
  - Share ideas virtually
- Online courses / live seminars / webinars / videos
  - Development of professional skills
- Human instinct – human interaction, such as communities of practice

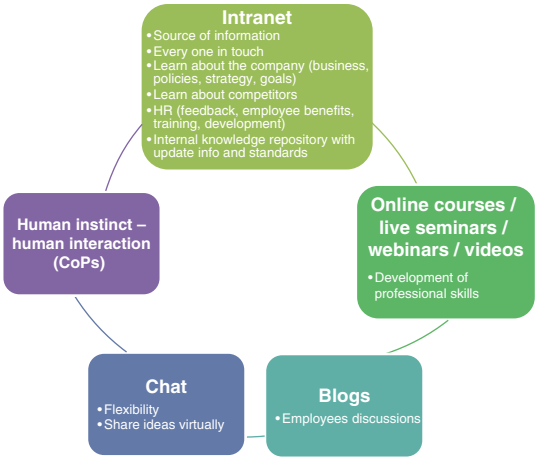

Fig. 1 Tools used to manage knowledge in organizations

relevant in the CoP; however, group members must come together and relate to each other through personal interaction.

In contrast to many tools used in managing knowledge, such as intranet, blogs, chat, webinars, human instinct is a required element of communities of practice. Figure 1 provides all these tools.

Forming and Operating Communities of Practice

There is a growing interest in organizations globally in understanding how to employ communities of practice to enhance learning and organizational performance (Kirkman et al. 2011). However, with the introduction of communities of practice being new in organizations, an obvious question managers ask is how to design and run these CoPs to make them useful to their organization. Finding an answer to this question is the main objective of this research: We want to find some guidelines about forming and operating successful communities of practice. Since practice is one of the main themes of CoPs, we decided to engage in survey research covering knowledge workers, managers, and senior executives in many industries. Furthermore, recognizing the expanding role of knowledge in all operations in almost all organizations (small and large) in all countries (developed and developing) around the world, we also decided to make this survey global, representing as many countries as possible.

When designing this survey-based research, we found that it was vital to be aware of the following five things: (a) the hypotheses addressed; (b) the questions coming out of the hypotheses; (c) the unit of analysis of responses; (d) the logic that would link the data to the hypotheses; and (e) the criteria for interpreting the findings. Each hypothesis must direct attention to at least something—in the form of questions—to be examined within the scope of study. Each piece of data collected should also match to the hypotheses, taking into consideration that a real-world situation, which is what was being considered in this study, is inevitably complex and multidimensional, and thus, any hypotheses, it can be argued, can be matched to more than one type of data.

Recognizing the gaps in understanding, discussed in the above section, the authors undertook a very large, comprehensive knowledge management study through cooperation between two universities, one in the USA and the other in the UK, which had respondents from 76 countries, all continents and many small island states, such as East Timor, Trinidad and Tobago, and American Samoa. A section of this global study was intended to learn about designing and operating CoPs for knowledge management. It lasted more than four years, from July 17, 2007, to November 14, 2011. It has had over 1,034 participants with a 69.5% completion rate (note that many questions are optional so this will be indicated by the final completion rate).

The Survey Design

The authors developed a comprehensive set of ten hypotheses for this survey to consider the formation and management of communities of practice. Table 1 lists these hypotheses in the first column, which were tested through a number of Likert-ranked statements in the survey. The second column of this table includes the questions that were devised to test the corresponding hypotheses of the first column. Table 2 provides a list of the major questions of this comprehensive survey that pertain to the study of communities of practice.

To assure that the participants were not just answering questions without reading and considering, some random negative statements were added. Additional questions were added to other sections to investigate other phenomena related to knowledge management (KM) such as the ideal knowledge leader based on the work by Cavaleri and Seifert (2005), questions relating to how communities of practice were operating, and some additional open questions.

This survey was undertaken through the communicative approach to research which investigates questions that relate to attitudes, motivations, intentions, and expectations and thus could be undertaken through a web-based survey. To overcome a weakness of this approach, i.e., the willingness of people to participate and then to tell the truth, the survey allowed respondents anonymity unless they

Table 1 Hypotheses and ensuing questions used to learn formation and operation of communities of practice

The organizational type and sector will have an influence on how knowledge management is shared within itself (Q3, Q4)	
1. Will influence whether or not there is knowledge sharing with external entities such as partners that occurs	Q33 We are proactive in analyzing and reporting on what is happening outside our organization and how we might be affected by these external developments Q34 We enhance our own organization's knowledge through involvement in collaborative working with other organizations Q54 Our CoPs partner CoPs in our allied/ partner companies Q55 We share the development of new products or processes with CoPs in our partner organizations
2. (a) Whether or not CoPs occur at all	Q38 We normally work together in CoPs
(b) Whether or not CoPs are formally or informally set up (the level of formality for CoPs)	Q39 CoPs are used to support the development of new working practices
(c) The level of resources for CoPs	Q40 Working in a CoP is expected practice in my organization Q47 The organization has allowed us to set up our own CoPs Q48 We would like to be able to set up our own CoPs but are not permitted to do so Q49 CoPs are formal structures in our organization set up by management Q50 We are supported with resources for our CoPs Q59 CoPs are used to develop new organizational knowledge
3. (a) Whether rewards are offered for knowledge sharing	Q31 We have a range of different rewards in this organization to motivate us to contribute our personal knowledge to the collective repository
(b) Whether targets may be set in return for resources	Q40 Working in a CoP is expected practice in my organization
(c) Whether or not they assist in developing strategy (Organizational type/sector affects expectations of CoP outcomes)	Q44 We do not expect targets to be set for our CoPs Q56 We can bid for resources for our CoPs but have to achieve targets in return Q57 Our management expects our CoPs to produce outcomes Q58 Our management has no expectation from our CoPs other than the sharing of knowledge

(continued)

Table 1 (continued)

	Q93 Internal competition for promotion has decreased due to knowledge sharing
	Q95 In my organization, there is a policy in place that links the ability and willingness to share knowledge with rewards
4. Whether creativity is enhanced or decreased with ease of knowledge access, e.g., through CoPs	Q91 The ability to easily access other people's knowledge has made me less creative
	Q92 As I cannot easily locate the knowledge I require, I have become more creative
5. Whether there is more or less technology to support knowledge sharing and CoPs. Less technology = more sharing; more technology = less sharing	Q14 There is a formal system in my organization for the purpose of capturing the knowledge aspects of our business experiences
	Q15 My organization does not employ any specific technology for the purpose of managing collective knowledge (normalize)
	Q30 Our intranet is the primary channel of internal communication for exchanging ideas, information, and knowledge
6. Organizational makeup: large size = more CoPs	Q5 Approximately how many people are employed at your location?
7. Organizational culture affects knowledge sharing and the creation of CoPs:	Q2 Please state in which country your organization's headquarters are located
(a) The amount of change is sector related—fast versus slow—and thus, there will be a culture more or less able to cope with change. The more change there is, the more likely there are to be CoPs	Q11 My organization has clearly stated values, which guide the way we work here
(b) The country of the organization will affect willingness to create and use CoPs (national cultures)	Q12 There are key beliefs in our organization, which are shared by all of those working here
(c) Will also affect clearly understood values and beliefs	Q28 The culture in my organization supports knowledge management
(d) Will affect the Development of trust	Q45 Change is normal in our organization and our CoPs support new ways of working
	Q46 Managers run our CoPs
	Q96 My organization has a culture of mentoring new staff and sharing knowledge with them
	Q97 The organizational culture is suspicious of knowledge sharing
	Q100 We regularly work within multidisciplinary teams, and thus, knowledge sharing within these teams is normal practice

(continued)

Table 1 (continued)

	Q101 We never or rarely work within multidisciplinary teams, and thus, it is difficult to know people outside my department
	Q102 I do not trust people in my organization until I have met them face to face
	Q105 We do not have a clear knowledge-sharing training policy and events
8. Organizational type/sector affects whether CoPs develop innovation—new products, services, business processes:	Q51 CoPs support the development of innovation in our organization
(a) Fast = more innovation	Q52 New ideas for products come from our CoPs
(b) Slow = less innovation	Q53 Our CoPs develop new working processes
(c) Innovatory knowledge is more or less shared more widely throughout the organization	
9. Organizational type/sector impacts on empowerment and self-realization (a) impacts on whether or not working in CoPs is permissive/normal practice/demanded	Q29 My organization does not encourage self-development
	Q32 A feature of my organization is that we are empowered to achieve our performance objectives
	Q41 We use CoPs to enhance our individual knowledge
	Q43 We choose to work in CoPs as a matter of normal practice
(b) Whether or not CoPs have helped develop knowledge taxonomies and languages	Q18 We use a particular knowledge management language between ourselves that enables us to exploit knowledge in my organization
	Q42 Our CoPs have developed their own working language
If the Participant is younger, with higher education, their gender, and their experience of KM will affect their ideas relating to knowledge sharing and CoPs working	Q61 Gender
	Q62 Age range
	Q63 Final academic qualification
	Q7 If yes, please state how long have you been involved with KM: year

expressed a willingness to participate in a follow-up in-depth study. Views of many of these respondents as well as the follow-up interviews are included in the discussions in this chapter.

Since participants can interpret questions differently from how intended, the authors used questions that tested some areas of response in different ways in an attempt to cross-check and to increase the reliability of this survey. Several questions were also included where answers could be worded by the respondents as they wished—in free-form text—to permit their explanation of the topic under inquiry. This permitted the inclusion of their views.

Table 2 Major questions used to test hypotheses on forming and operating communities of practice

Q13: There is a clear, well-understood knowledge management strategy in my organization that guides us with the knowledge aspects of our business experiences.
Q16: We did not normally work in teams, but the introduction of the knowledge management program has resulted in people working together in teams.
Q17: In my organization, the knowledge management program has resulted in people working together in communities of practice.
Q19: Our knowledge is clearly structured, making it easy to add to and draw from it.
Q20: My organization does not have a policy requiring that its knowledge is centrally managed.
Q21: Responsibility for my organization's collective knowledge is given to one designated person.
Q22: There are clearly defined processes and rules, which specify how knowledge must be managed.
Q23: My organization selectively disseminates knowledge.
Q24: My organization encourages knowledge exploitation.
Q25: As individuals, we share our knowledge through collaboration.
Q27: Our business strategy is developed out of what we learn from sharing knowledge.
Q35: We do not have a formal structure to assist us with knowledge management; we are left on our own to practice and learn.
Q86: Do you feel that you have a good overview of organizational knowledge and where it is located in your organization?
Q87: What is the most common route you take for you to find out where knowledge is located and who owns this knowledge?
Q90: What are the major organizational barriers that you encounter in locating this knowledge? (open question)
Q98: Many people in my organization believe that knowledge equals power.
Q99: I am happy to share my knowledge within my department but not outside of it.
Q104: Our organization has a clear map of where knowledge is located and who holds it.

The Sample

We surveyed 1,034 participants, from July 17, 2007, to November 4, 2011, from 76 countries, and while the responses are predominantly from the USA and the UK (71%)—an expected result due to the nature of the topic being discussed and the likelihood of such activities being performed—the third most responses, however, come from India, closely followed by Australia and China. There is a representation of many countries that are atypical in such surveys or are from small developing countries, such as East Timor, Trinidad and Tobago, and American Samoa. Our sample includes even the Vatican as they use and manage knowledge like many other organizations. Note that this survey is extremely large[1] and covers more countries than any other KM survey. Additionally, this survey covers all sectors and sizes of organizations. This, therefore, qualifies to be the largest global knowledge management survey and the only one to include countries outside the expected norm. A complete breakdown of all participants in this study is represented in Fig. 2.

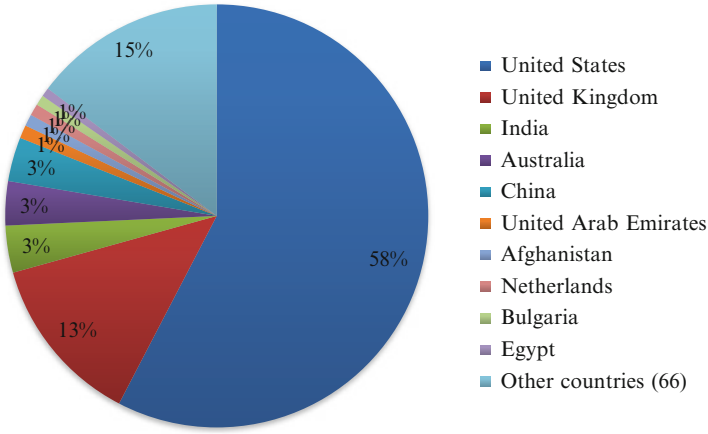

Fig. 2 Country share of respondents in the study

The participants in our survey come from all levels of managing knowledge in organizations of all kinds. They represent all sizes and kinds of businesses including the third sector and SMEs and organizations that one may not have thought of before as being knowledge based. The survey includes not just the senior managers responsible for KM decision-making and those who carry out the KM function but also those who use knowledge—the knowledge workers. Table 1 gives the demographics of our survey sample including those who participated in the follow-up interviews. The respondents included 92 who either owned (9) or were CEO (20) or were a director in their organization. Some 177 were managers of various departments; 140 were technicians or engineers or information and communication technology (ICT) employees; but also one respondent was involved in nuclear power plant design, several were scientists for governmental agencies, and one was a Senior Chyron Operator. Health practitioners of various types, as knowledge workers, were also represented in our sample including a pharmacovigilance specialist and a clinical safety associate; 4 respondents were chaplains or involved in pastoral work; 1 was involved in preserving, perpetuating, and making publicly accessible the legacy of a preeminent American visual artist; 19 or more were involved in consulting; and there were a number of academics who responded to our survey including a dean and director of curriculum and ten faculty members of universities. This breadth of survey participation gave us a unique insight into how knowledge is managed in numerous areas of organizations as well as for numerous purposes (Tables 3 and 4).

Table 3 Demographic information of sample

Industry	Frequency	Percentage (%)
Services (e.g., banking)	313	30
Education	167	16
Health Care	144	14
Manufacturing	142	14
Consultancy	94	9
Retailing	78	8
Government (local)	67	6
Government (not for profit e.g., C)	28	3
Scope		
Multinational	140	14
International	416	40
National	407	39
Sole trader	70	7
Number of employees		
1–50	190	18
50–100	93	9
100–250	134	13
250–500	111	11
500–1,000	86	8
1,000 plus	419	41
Organizational role		
Managers and senior officials	198	24
Professional occupations	337	41
Associate professional and technical occupations	227	27
Administrative and secretarial occupations	46	6
Skilled trade occupations	1	0
Sales and customer service occupations	10	1
Elementary occupations	1	0
Students	7	1

Analysis and Testing

The responses to the survey's 7-part Likert questions were analyzed using SPSS through standard statistical testing for reliability—the result being Cronbach's alpha = 0.937, ($N = 85$)—and validity, as well as their support for the hypotheses.

As this survey data was difficult to generalize across times, etc., this analysis was mainly concerned with internal data validity, tested through content—the extent to which the data provides adequate coverage of the investigative questions that guide the study (Blumberg et al. 2008). Significance through nonparametric means was clear—this was not a standard bell curve of data distribution, and therefore use of the chi-square test was indicated for nominal data. In Table 1, we see the percentage and rating average level of agreement for each of the questions testing our strategic hypotheses where 1 was "strongly agree" and 7 was "strongly disagree," with 4 as "no view."

Table 4 Responses description per section

Section	Number of questions	Type of data	Responses	Missing data (%)	MCAR test (sig.)	Observations
1: Organizational background	5	Nominal	1,034	6	NA	
2: About you	7	Nominal	930	28	NA	One optional question
3: Organizational practices	26	Scalar	806	1	.911	
4: Communities of practice CoPs	22	Scalar	146	1	.514	
5: Leadership	24	Scalar Nominal	189	9.1	.980	Gender and nationality questions
6: Additional Organizational details	20	Scalar Open	149	7.2	.601	Two open questions
Total survey	104		1,034			

How to Form and Operate Communities of Practice (CoPS)

In this section, we provide a summary of our findings that managers can use in managing knowledge in their organizations by using CoPs. Every finding reported is based on correlations significant at 0.01 level (2 tailed).

The Knowledge Management Function

Our survey results show that for the knowledge management function to work quite satisfactorily, the organization has to have a clear map of where the knowledge is located and who holds it. The organization must have a policy in place that links the ability and willingness to share knowledge with reward. Working in CoPs should be an expected practice in the organization, and it should use CoPs to enhance individual knowledge. Change should be normal in such organizations, and CoPs should support new ways of working.

The knowledge management function has to work satisfactorily in the organization for employees to work and work together in CoPs as a matter of normal practice and support the development of new working practices. This will also give the organization a clear map of where knowledge is located and who holds it. A knowledge management program results in people working together in communities of practice (CoPs) that operate as described in the section on CoPs to follow.

Types of Communities of Practice

Manager-Run Formal CoPs

Manager-run CoPs are formal structures in organizations set up by management. In this case, the employees are happy to share their knowledge within their department but not outside of it, and they convey that the ability to easily access other people's knowledge has made them less creative. Manager-run CoPs can bid for resources for CoPs but have to achieve targets in return.

CoPs for New Product Ideas

To have new product ideas come from their CoPs, organizations use them to develop new organizational knowledge and expect them to produce outcomes. They allow their CoPs to develop new working processes, partner with CoPs in their allied/partner companies, and share the development of new products or processes with CoPs in their partner organizations.

CoPs for Innovation (CoInv)

CoPs support the development of innovation in their organizations by developing new working processes, giving new ideas for products, developing new knowledge, and giving their management the expectance of producing outcomes. They support the development of innovation by partnering with CoPs in their allied/partner companies and sharing the development of new products or processes with CoPs in their partner organizations. Their support for innovation in their organization comes because they can bid for resources for their CoPs but have to achieve targets in return.

CoPs for New Working Practices

CoPs to support the development of new working practice are used when employees use CoPs to enhance their individual knowledge, working in CoPs is expected practice in the organization, and employees set up their own CoPs and choose to work in CoPs as a matter of normal practice and develop their own working language. These CoPs support the development of innovation in our organization. Change becomes normal in such organizations, and they support new ways of working. These CoPs support the development of new organizational knowledge and innovation and new ways of working by making change normal in these organizations. They develop new working processes and bring new ideas for products. Management expects these CoPs to produce outcomes and supports them with resources and has

a policy in place that links the ability and willingness to share knowledge with rewards.

These CoPs partner with CoPs in their allied/partner companies and share the development of new products or processes with CoPs in their partner organizations.

Setting up CoPs

Based on the results of our survey, with a 99% confidence interval, the participants state the following will set up successful CoPs:

CoPs Will Develop Innovation if Change Is Normal in Organization

When change is normal in their organization and their CoP supports new ways of working, then CoPs allow employees to set up support for the development of innovation through developing new working process and new organizational knowledge; and come up with new ideas for products by partnering with CoPs in their allied/partner companies; and sharing the development of new products or processes with the CoPs in their partner organizations. Management expects these CoPs to produce outcomes and supports them with resources and allows them to bid for resources, but they have to achieve targets in return.

Make Working in a CoP an Expected Practice

When working in CoPs becomes an expected practice in an organization, then its employees choose to work in CoPs as a matter of normal practice and use CoPs to enhance their individual knowledge; additionally, the management expects CoPs to produce outcomes. Employees are allowed to set up their own CoPs and work normally together in them, and then they use CoPs to enhance their individual knowledge. While management expects CoPs to produce outcomes, CoPs can partner with allied/partner companies. Change in these organizations becomes normal, and CoPs support new ways of working. These organizations have a policy in place that links the ability and willingness to share with rewards. Employees bid for resources for their CoPs but have to achieve targets in return. CoPs are used by these organizations to develop new knowledge. CoPs support the development of innovation in the organization, develop new working processes, and come up with new product ideas. These organizations share the development of new products and processes with CoPs in their partner organizations. These CoPs develop their own working language.

Let Employees Set Up Their Own CoPs

When organizations allow employees to set up their own CoPs, CoPs develop new working processes; support the development of innovation in the organization; and develop new organizational knowledge; and new ideas for products come from these CoPs.

Make Working in CoP a Normal Practice

Organizations can create working in CoPs as a matter of normal practice by allowing employees to set up their own CoPs; allowing them to partner with CoPs in allied/partner organizations; supporting CoPs with resources; and having a policy in place that links the ability and willingness of employees to share knowledge with rewards; and permits employees to bid for resources for their CoPs in return for achieving targets. They can share the development of new products or processes with CoPs in partner organizations. These CoPs develop new organizational knowledge and develop new working processes, as change is normal in these organizations. They support the development of innovation in their organizations which expect their CoPs to produce outcomes.

Management Set CoPs Work Against CoP Goals

Our survey finds that when employees want to set up their CoPs but are not permitted to do so or when CoPs are formed as formal structures set up by management, the employees never or rarely work in multidisciplinary teams and find it difficult to know people outside their departments; and often the rate of employee turnover is too high for any comprehensive mapping and structuring of knowledge to take place. By implication, such CoPs will be less likely to bring innovation.

Set Expectations for CoPs

Employees do not expect targets to be set for their CoPs when management has no expectation from their CoPs other than the sharing of knowledge, and also when the organizational culture is suspicious of knowledge sharing.

Expect CoPs to Enhance Individual Knowledge

When CoPs are used to enhance individual knowledge, employees choose to work in CoPs as a matter of normal practice, and CoPs develop new organizational knowledge and support new ways of working. Change becomes normal in these organizations.

Link Sharing of Knowledge with Rewards

When organizations have a policy that links the ability and willingness to share knowledge with rewards, then employees share the development of new products or processes with CoPs in their partner organizations; CoPs are used to develop new organizational knowledge; and employees must bid for resources but have to achieve targets in return. Management expects them to produce outcomes.

Have a Policy That Rewards Knowledge Sharing

If management expects CoPs to produce outcomes, then the organization must have a policy in place that links the ability and willingness to share knowledge with rewards and then the CoPs will develop new organizational knowledge.

Have Knowledge-Sharing Training and Events

If an organization does not have a clear knowledge-sharing training policy and events, then management should not have any expectation from CoPs other than the sharing of knowledge. However, the employees may read it as the organizational culture being suspicious of knowledge sharing.

Offer a Range of Rewards

When organizations have a range of different rewards to motivate employees to contribute there is personal knowledge to the collective repository, then employees understand that there is a policy in place that links the ability and willingness to share knowledge with rewards. The employees will normally work together and choose to work in CoPs as a matter of normal practice, and the knowledge management function works quite satisfactorily.

Provide a Formal KM Structure to Assist CoPs

When employees do not have a formal structure to assist them with knowledge management and they are left on their own to practice and learn, they do not have a clear knowledge-sharing training coming from policy and events.

Support CoPs with Resources

Organizational support for CoPs with resources results in their partnering with CoPs in their allied/partner organizations and supporting the development of innovation in their organizations. They are used to develop new organizational knowledge, and their management expects them to produce outcomes. They produce new working

processes. They can bid for resources for themselves but have to achieve targets in return. New ideas come from these CoPs.

Let Employees Bid for Resources for Their CoPs

Organizations that let employees bid for resources for their CoPs in return for achieved targets expect CoPs to produce outcomes. They have policy in place that links the ability and willingness to share knowledge with rewards.

Allow Collaboration with Other Organizations

When employees enhance their own organization's knowledge through involvement in collaborative working with other organizations, CoPs are used to support the development of new working practice, and they use CoPs to enhance their individual knowledge.

Operational Recommendations

Let CoPs Partner

Allowing CoPs to partner with allied/partner companies amounts to letting them share the development of new products or processes with CoPs in these partner organizations. This is how management can expect CoPs to produce outcomes, and CoPs are used to develop new organizational knowledge. Allow these CoPs to bid for resources for targets to be achieved.

Let CoPs Develop a Working Language

Letting CoPs develop their own working language results in CoPs developing new working processes and enables their managers to run their CoPs to develop new organizational knowledge. This is how change becomes normal in the organization: CoPs support new ways of working; partner with CoPs and share the development of new products or processes with their partner organizations, and so management can expect the CoPs to produce outcomes.

Formal CoPs

When CoPs are formal structures in organizations set up by management, they bid for resources for themselves but have to achieve targets in return and share the development of new products or processes with CoPs in their partner organizations. Such CoPs have limited contributions.

Conclusion

Contemporary organizations depend on knowledge for their success in the marketplace. Knowledge and its management are not just a concern of KM professionals but all employees. This redefines knowledge management for the purpose of organizing and managing the experiences of employees to ensure that they have the necessary knowledge when required. Thus, the KM function extends to efficiently and expeditiously creating, locating, capturing, refining, and sharing knowledge. In its new role, KM becomes a task for each employee, and those tasked with managing organizational knowledge become facilitators for this process, creating an environment that makes these employees creative and innovative. Voluntary groups for sharing knowledge, called communities of practice (CoPs), are created in organizations and become an answer to the above.

Based on a global survey conducted on 1,034 knowledge workers, managers, and senior executives from 76 countries, over a period longer than 4 years, we learned that CoPs can be good agents of change in all four forms we identify: manager-run formal CoPs, CoPs for new product ideas, CoPs for innovation (CoInv), and CoPs for working practices.

We find 15 guidelines for setting up CoPs. These guidelines cover the forming and setting rewards, sharing knowledge, partnering inside and outside the organization, resource allocations, management expectations, and training and training policy. We also provide recommendations for operating CoPs.

This new understanding on CoPs should help managers integrate workers who use knowledge into the function of knowledge management, as the role of knowledge management and managing knowledge workers (Amar 2002) are intertwined. One cannot look at one without looking at the other. Respondents of our survey tell us that through CoPs, they can contribute to the organization's knowledge management by bringing to use the knowledge they find in many places for their organization to exploit. Basic principles of CoPs suggests that employees at all levels of their organizations possess usable knowledge and the will to put it to work. The organization has to manage this knowledge in a new way and provide a suitable environment, through creating communities of practice, thus enabling employees to exploit this knowledge for the organization.

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Wenger EC, McDermott R, Snyder WC (2002) A guide to managing knowledge: cultivating communities of practice. Harvard Business School Press, Boston1 Only one known survey has more respondents, and that survey was not specifically a KM survey but had only a few KM questions included in it