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Why communities of practice succeed and why they fail

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KEYWORDS

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Summary A specific form of intra-organizational networks – a community of practice (COP) – is increasingly regarded as an important structure within organizations. This network structure is well suited for the development and sharing of knowledge and practices across divisions. Our research explores the most salient reasons for the success and failure of such networks. An investigation of 57 COPs from major European and US companies led to the discovery of 10 “commandments” that lead to the successful development and sharing of best practices. It also identified five main reasons for failure.

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Introduction

Managers currently face the daily major challenge of sharing employee know-how throughout their organizations. In response, a specific and institutionalized type of intra-organizational network – a community of practice (COP) – has been developing steadily within many organizations. This networked structure has in fact developed into a platform for individuals to develop and share best practices across organizational units (McDermott, 1999). More precisely, a community of practice is a group of individuals who shares their interests and problems with a specific topic, and gains a greater degree of knowledge of and expertise on a topic through their regular interaction (Wenger et al., 2002).

As highlighted by Wenger et al. (2002), COPs differ from other types of intra-organizational networks, namely “project teams”, “operational teams”, and “purely informal networks”. First of all, a COP differs from a project team in that the participants’ roles are not assigned formally and are not defined with respect to the COP task. Moreover, the delineations of member roles are not clear – as would be the case in a project team. The COP’s progress is not measured by a succession of stages in the realization of a predetermined objective; it is measured by the quantity of practices developed and exchanged within the COP, enabling the organization to improve its performance. In contrast with a project team, a COP does not cease existing once it has achieved its initial objectives.

Secondly, a COP differs from an operational team in that no specifications, or any other type of contractual formality determines the role and responsibilities of each participant in achieving a series of operational objectives over time.

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In addition, whereas the delineation of the members' participation and roles are clear in an operational team, this is not the case in a COP.

Thirdly, COP members share a common interest in developing practices in a specific field, whereas a purely informal network only lasts as long as its members continue to find it beneficial for the cultivation of business relations that meet their professional needs. Contrary to a COP, a purely informal network passes on information on a multitude of independent topics and does not focus on improving members' know-how on one specific domain.

COPs help foster an environment in which knowledge can be created and shared to improve the effectiveness of existing practices used in organizations (Lesser and Everest, 2001). At Siemens, for instance, engineers from different units exchange technical know-how on how to build improved automotive systems. At Oracle, software developers discuss and share data processing in order to build better performing databases. The exchange of know-how across organizational borders is intrinsically related to a common impetus to learn together. These communities are important arenas for innovation in which practitioners constantly improvise and adapt their behaviors in order to traverse the limitations of canonical practice (Brown and Duguid, 1991). Furthermore, COPs provide the context for an easier reuse of knowledge, allow fast responses to customer requests, and reduce learning curves for new employees (Lesser and Storck, 2001; Dubé et al., 2005). At IBM, for example, consultants in 'supply chain management solutions' regroup in a COP to exchange documented solutions in procurement, enterprise planning and execution, and logistics and fulfillment. This enables the consultants to build better solutions based on proven and reliable solutions. This "non reinvention of the wheel" approach accelerates the rate at which these consultants can provide IBM clients with solutions. Owing to COPs' potential to realize strategic advantage, organizations have shifted their attention to the role that institutional support mechanisms can play in steering these informal structures (Thompson, 2005; Dubé et al., 2005). Consequently, through COPs, organizations can exploit human capital more fully and develop better practices (Lesser and Everest, 2001). Adequate measures must thus be taken to stimulate continuous collaboration within these intra-organizational networks and to actively guide them.

The few existing studies on how to guide communities of practice demonstrate a lack of specific governance mechanisms to steer COPs (Dubé et al., 2005, 2006). Our present research on COPs aims to bridge part of the literature gap on guiding these intra-organizational networks. It also identifies the main reasons for their failure — defined as a lack of ongoing development and sharing of knowledge and best practices (McDermott, 2004).

We conducted an investigation based on a questionnaire survey of 57 COP leaders. The results revealed ten governance mechanisms linked to strategic objectives, an active collaboration between a "sponsor" from top management and a COP "leader", networking routines, a risk-free environment, and the measurement of a COP's success. The results also revealed a number of reasons for failure: absence of a core group, weak one-to-one connections between members, rigidity of competences, lack of identification with the network, and practice intangibility.

Intra-organizational networks

In an intra-organizational network, employees share a social and organizational context, establishing informal personal bonds that support the exchange of knowledge between business units (Tsai, 2000). The academic debate on the transfer of intra-organizational knowledge through a network approach has to date mainly centered on the understanding of three fundamental issues. The first is the improving of organizational unit efficiency by reusing and improving existing knowledge and best practices in the organization (Davenport and Probst, 2002). The second is the encouraging of innovation growth in units by increasing the sharing and merging/combining of knowledge within the organization (Tsai and Ghoshal, 1998) and thus achieving greater flexibility in responding to changes in the environment (Prahalad and Doz, 1987). The third issue is the increasing of employee satisfaction, because employees view participation in a network as an opportunity to improve the competencies within their unit (Büchel and Raub, 2002).

Nevertheless, the research that has been carried out on intra-organizational transfers of knowledge remains limited and lacks convincing empirical evidence (Berthon, 2003). Additional research is required to better grasp the mechanisms of coordination that enable multiple units of an organization to access their respective knowledge (Tsai, 2000, 2001).

Since the sharing of best practices throughout the organization appears to be a major challenge facing managers (Probst et al., 1999), communities of practice (COPs) have developed as active know-how platforms across organizational units (Josserand and de Saint Leger, 2004). Although a COP mostly extends across the units of a single organization, it can, in certain cases, be comprised of members of separate organizations (Wenger and Snyder, 2000).

A best practice is a practice that has shown to produce superior results, has been systematically selected, has been judged better than other practices, and whose success has been proved (American Productivity & Quality Centre, 1999).

Towards successful community of practice (COP) guidance

An increasing number of studies have debated whether organizations can play an active role in constructing and supporting COPs. Initially, COPs were presented as spontaneous, self-organizing, and fluid processes that management cannot intentionally establish (Brown and Duguid, 1991; Lave and Wenger, 1991; Orr, 1990, 1996). Later works, however, suggest that COPs are amenable to manipulation and thus must receive institutional support for strategic advantage (Lesser and Everest, 2001; Wenger, 2000; Wenger and Snyder, 2000). These studies have caused a growing tension in the literature regarding COP's manageability. Critics argue that the concept of a COP as a self-regulating process is clearly in opposition to the prescriptive ambition to manage COPs for improved performance (Fox, 2000; Contu and Willmott, 2000). Responding to this criticism, more recent studies suggest that while organizations need to foster and participate in COPs to leverage their full potential, they cannot fully own or control them (Anand et al., 2007; Brown and Duguid, 2001; Swan et al., 2002; Wenger et al., 2002).

While there seems to be consensus that management plays an active role in supporting communities of practice, *how* organizations address the managerial paradox inherent in COPs remains undecided (Contu and Willmott, 2003; Handley et al., 2006; O'Mahoney and Ferraro, 2007; Thompson, 2005). According to Dubé et al. (2005, 2006), COP literature has highlighted only a limited number of broad fields related to guidance, neglecting to identify specific and detailed governance mechanisms to manage communities of practice.

Our research's central question is: through which specific governance mechanisms are COPs successfully guided? A COP is defined as successful when its members exchange specific knowledge, practices and/or experiences that contribute to developing a practice (know-how) in a specific field (McDermott, 2004).

Methodology

We conducted our research with 57 COP leaders from organizations such as Siemens, Oracle, IBM, Daimler, Holcim, Mitsubishi, Mazda, Pioneer, Bearing Point, PriceWaterhouseCoopers, Degussa, SwissRe, the World Bank, the World Health Organization, the United Nations, and CERN.² The sampling method was based on maximum variation sampling (Miles and Huberman, 1994, p. 28).

This method aims at generating maximum meaningful heterogeneity within the study's chosen sample. We chose a heterogeneous sample of COPs to yield similarities and differences between the cases investigated (Miles and Huberman, 1994). A number of COPs in different fields were deliberately selected to focus the investigation on just one specific phenomenon (Stake, 1994): the dynamics that lead COPs to develop and share best practices successfully (success). It should be noted that this sampling method prepares the ground for interpretive research, as it meets a number of Marshall and Rossman's (1999, p. 69) proposed criteria: A great mix of participants; the presence of structures of interest and differences between their interests; a variety of programs and methods (practices) used; and the opportunity to cultivate trusting relations with the participants (Patton, 1990).

We started with a perception analysis (Miles and Huberman, 1994; Seale, 1999) of COP leaders, using the "elite interviewing" technique (Marshall and Rossman, 1995, p. 83) to collect data. This method is aimed at collecting data and perspectives from individuals who are the most informed about and experienced with the phenomenon under investigation. COP leaders were therefore the most obvious "elite" choice, since it is presumed that they have the best knowledge of their networks' dynamics (McDermott, 2001; Gongla and Rizzuto, 2001; Wenger et al., 2002).

Data collection

Data collection was carried out between February 2007 and May 2007.

In a first phase, the 57 leaders received a qualitative questionnaire. Through qualitative data, this questionnaire enabled us to evaluate whether a COP was successful at

developing a practice (know-how) in a specific field. The 57 collected questionnaires yielded 45 successful COPs. At this stage, we isolated the 12 "unsuccessful" COPs from the 45 remaining "successful" ones.

The success of a particular COP was assessed by having the leaders describe whether: (1) "proven" or "best" practices were regularly posted on the community's shared database; (2) members regularly posted their feedback on the database after having used one of these practices in their organizational unit; and (3) the leader (through his interactions with members) reported that members regularly jointly develop common insights and create common approaches, and benchmark (compare) the practices that they use in their respective organizational units.

There are, however, some limitations to our perception analysis, since it could be argued that the respondents are "locked" into, or are biased (Marshall and Rossman, 1995, p. 148) by their COP members' perception. This may have led them to be over enthusiastic or over optimistic about their COP's degree of activity. Consequently, their assessment of "success" may contain some degree of subjectivity. To have limited subjectivity as far as possible, we would have had to select multiple informants within each COP to mitigate subject biases (Yin, 2003), to provide a broader range of perspectives on the subject (Guba and Lincoln, 1989), and to reach theoretical saturation (Glaser and Strauss, 1967).

In a second phase, we conducted semi-directed interviews with the 45 leaders of successful COPs, which generally lasted up to two hours. During the interview, we asked theory-driven questions related to the positive impact that governance might have on best practice development and sharing within the COP. The leaders had to support their evaluations with concrete facts from their COP.

In a third phase, we conducted semi-directed interviews with the 12 leaders of unsuccessful COPs. During these conversations, which also lasted two hours, we asked the leaders to discuss the reasons for their COP's possible failure elements.

Each interview was tape-recorded and transcribed (Yin, 2003), which enabled us to interpret each leader's elite opinion (Miles and Huberman, 1994; Patton, 1990; Seale, 1999).

Data analysis

The qualitative data collected from the 45 successful COPs by means of the questionnaires and interviews were displayed in a "conceptually clustered matrix" (Miles and Huberman, 1994, p. 127) the interactivity between the data displayed and data reduction gave rise to a multitude of aspects (Marshall and Rossman, 1999, p. 154) of governance in respect of each COP case. These aspects were the *links* established between the governance and best practice development and sharing (success) in respect of each investigated COP. These aspects were extracted from the notes that had been made when checking every questionnaire and listening to the recordings of the interviews. Concretely, each aspect was formulated in a concise sentence, followed by a detailed explanation of how it had a positive impact on best practice development and/or sharing.

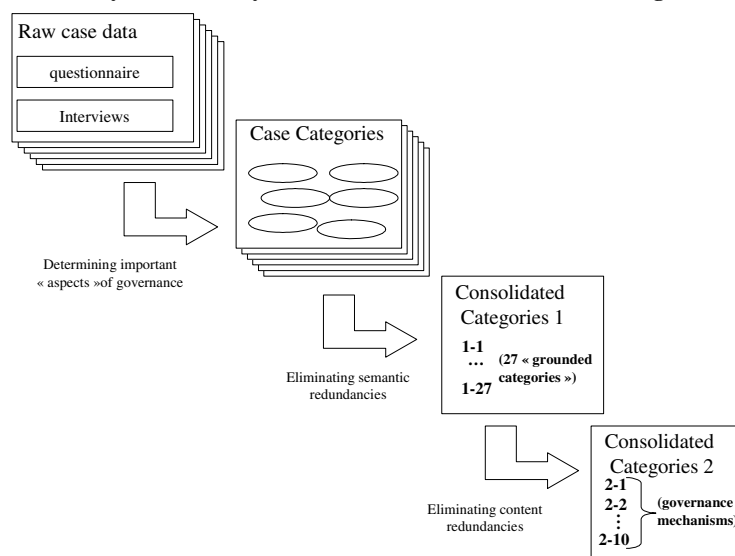
² European Organization for Nuclear Research.

The following step was to group these *aspects* into *categories* (Marshall and Rossman, 1999, p. 154). To achieve this, the following approach was followed: first, these *aspects* were labeled as closely to the original wording as possible, which created a set of *categories* (Dey, 1993, p. 94) for each of the 45 successful CoPs. Each category was then captured in a short descriptive sentence. Second, a *consolidation* was done of the 45 sets of semantically identical categories, which resulted in a single set of 27 *grounded categories*. In the process, Marshall and Rossman's (1999, p. 154) goal of data analysis in qualitative research was followed very accurately. According to these authors, the goal is not to search for mutually exclusive and exhaustive categories in a statistical sense, but to identify "the salient grounded categories of meaning held by participants in the setting." From the questionnaires and the interviews, the salient character of the identified 27 *grounded categories* was evident. However,

the *grounded categories* still contained a number of redundancies related to content, as well as cross-category overlaps. In accordance with Glaser and Strauss's (1967) iterative approach to qualitative research, each *grounded category* was consequently analyzed and then compared to the others to eliminate content redundancies. If redundancies were found, the similar *grounded categories* were merged (Dey, 1993, p. 129). The final result was a set of 10 *non-redundant categories*. These *non-redundant categories* were labeled "governance mechanisms".

The qualitative data collected from the 12 unsuccessful CoPs were analyzed following the same pattern: a *consolidation* was done of the 12 sets of semantically identical categories, which resulted in one single set of 8 *grounded categories*. After content redundancies were eliminated, the result was a set of 5 non-redundant categories – labeled "reasons for failure".

Summary of Data analysis: from raw data to consolidated categories



Summary of methodology

Sample of investigation	57 leaders from a heterogeneous sample of 57 COPs ("maximum variation sampling", Miles and Huberman, 1994).
Purpose of the investigation	Study leaders' perception of: <ul style="list-style-type: none"> • the specific governance mechanisms that guide COPs successfully • reasons for COP failure
Investigation method	Questionnaire and interviews with the elites (leaders) of COPs (Marshall and Rossman, 1995, p. 83)
Data collection	<p><i>Phase 1:</i> Qualitative questionnaire distributed to the 57 leaders to evaluate the success of their COP. The answers showed that 45 COPs were successful, with 12 COPs being unsuccessful.</p> <p><i>Phase 2:</i> Semi-directive interviews with the leaders of the 45 successful COPs to assess the importance of governance for success and to fully understand how each COP is managed.</p> <p><i>Phase 3:</i> Semi-directive interviews with the leaders of the 12 unsuccessful COPs to discover the main reasons of failure.</p>
Data analysis	Semantic interpretation of all 57 leaders' discourse (Miles and Huberman, 1994; Seale, 1999).
Field of investigation	Siemens, Daimler, Oracle, IBM, PriceWaterhouseCoopers, Bearing Point, SwissRe, Pioneer, Mazda, Mitsubishi, Holcim, Degussa, World Bank, CERN (European Organization for Nuclear Research), United Nations, World Food Program, World Health Organization, International Labor Office, Knowledge Management for Development (KM4Dev), Aguasan, Aidswokers, Alpha Medical Network, Pictet Bank, Lombard Odier Darier Hentsch Bank, Pro Concept.

Research findings

Ten “successful” governance mechanisms to steer COPs and five main reasons for failure

We discovered ten governance mechanisms, all of which yield success in the development and sharing of best practices. We called these mechanisms the “Ten Commandments of COP governance.” We also identified five reasons that explain why COP members fail to develop and share best practices. Each commandment is illustrated by a practical example, and applies to the majority of the 45 successful COPs that we investigated.

The 10 commandments of COP governance

Stick to strategic objectives

Our results show that the COPs’ objectives indicate a clear mission to develop and share practices that will contribute to lower costs/increase revenues for the organization once they have been deployed and multiplied across the organization. We found evidence that setting clear and measurable objectives provides COP members with a concrete direction to follow. Such quantifiable objectives limit COP members to specific metrics (% of cost reduction, % of revenue increase, % of time reduction, increase in customer satisfaction, etc.) that must be respected when they participate in the process of developing and sharing best practices with other members. Furthermore, setting objectives explicitly linked to cost reduction and/or an increase in organizational revenue clearly points to COPs’ strategic relevance for their members.

Consequently, members – especially core members – participate more actively in the process of best practice development and sharing, because they can clearly perceive the financial benefit of using such practices in their own organizational unit, and of multiplying such practices throughout their organization. In addition, if the use of best practices provides members in their respective organizational units with superior results, it can bring them recognition from middle and/or top management.

Example: The Daimler Case

At Daimler – the giant automobile manufacturer – COPs of 20–30 engineers and technicians from different car lines working on different platforms, develop and share assembling practices. The strategic objective of these COPs is to develop and share the most efficient assembling techniques with engineers and technicians across the entire production platform. This saves Daimler thousands of hours/years of labor, which translates into lower production costs for its many models. It furthermore reduces the time-to-market of its vehicles, which translates into rapidly earned revenues for the company. In addition, technicians participate more actively in the process of developing and sharing more efficient assembling practices, because they can clearly perceive the time-saving benefits of using such practices.

Divide objectives into sub-topics

Evidence also suggests that classifying objectives into sub-topics gives COP members absolute clarity regarding the

goals that a COP must achieve. A taxonomy of objectives gives them a precise orientation to follow by proposing different areas in which they must develop and share best practices.

Classifying objectives into sub-topics clarifies the precise fields on which COP members are expected to concentrate their efforts to develop and share best practices. Thus, this classification is a pragmatic and illustrative way of promoting the realization of these objectives. It therefore enables a more targeted development and sharing of best practices between members, who know precisely what outputs the organization expects from the COP’s activity.

Example: The Mitsubishi Case

At Mitsubishi – the Japanese car manufacturer – approximately 150 car engineers, who work on different models, collaborate in an “engine high performance” COP. Although the COP’s main objective is to develop and share technical knowledge to build more reliable and better performing engines, sub-objectives are built on the complexity of the car engine. Each sub-objective is aimed at building and exchanging technical knowledge on the following parts of the engine: internal combustion, valves, cooling systems, starting systems, lubrication, and electrical systems. This mapping of objectives provides the COP with a stronger knowledge-focused approach.

Form governance committees with sponsors and COP leaders

Our findings indicate that sponsors and leaders who are active in the same functional area (e.g. logistic processes, production and maintenance processes) meet regularly to form a “governance committee”. This committee discusses and assesses the overall activity of the various COPs in their specific functional area of the organization. The committee regularly assesses whether each COP’s activity makes strategic sense for the organization, and how these activities can be presented to the top management to obtain additional financial support.

There are several positive impacts that governance committees have on best practices if they are developed regularly:

Opportunity for inter-COP sharing of a best practice

During committee sessions, a practice that has shown superior results could be identified within one of the COPs by means of the sponsors and COP leaders’ joint expertise. Potentially, this best practice could be adapted and extended to a larger number of COPs that are represented in the governance committee. The possibility of applying that specific best practice to several COPs enables the organization to save costs, and/or to increase its revenues on a larger scale.

Opportunity to merge COPs

Within governance committees, the sponsors and COP leaders may decide that the primary activities of certain COPs overlap. In such cases, governance committees may merge two or three COPs. This merging provides an opportunity for fresh interconnections between members.

Opportunities to benchmark activities across COPs

Via governance committees, sponsors and COP leaders

have the possibility of benchmarking their COP's activity to that of other COPs. This provides new ideas for strategic directions that could then be followed. Consequently, this might have an impact on the type of practices that will be developed and shared within the COP.

Example: The Siemens case

At Siemens, the electrical engineering and electronics giant, the "Process Council" unites sponsors and leaders of three different COPs, respectively focused on supply chain management, product lifecycle management, and support management. Each quarter, the Council reviews the processes that each COP has developed. The COP leaders contribute to the Council by providing an operational view of what takes place in their COP in terms of the greatest time saving and the number of shared processes. In turn, the sponsors have discussions on which of these processes are the most promising in terms of cost savings for the company. They also benchmark these internal processes. The sponsors jointly assess the different COPs' fit in the organization's strategy and discuss how these COPs can be best presented to the top management to obtain additional financial support. In addition, the "Process Council" provides the COP leaders with an opportunity to benchmark their respective COP management practices against one another.

Have a sponsor and a COP leader who are "best practice control agents"

Results also suggest that both the sponsor and the COP leader fulfill the task of controlling whether or not the COP effectively develops and shares best practices over a pre-determined time. In some extreme cases, they may even assign a minimum number of best practices that have to be developed and shared. Our findings lead us to believe that they should then assess whether this number has been reached after a decided-upon period (e.g. every trimester). Our data reveal that in successful COPs the sponsor stays in regular contact with the leader to obtain access to these best developed and shared practices.

In some extreme cases, we found that the sponsor pressurizes the COP leader to evolve the COP towards the ongoing development of best practices. By imposing the ongoing constraint of presenting practice-related results at the end of a period, the sponsor stimulates the COP leader to activate core members to boost the intensity of the knowledge exchanges within the COP. If the leader is able to activate the connections between members, it is more likely that the knowledge flows' density will increase. However, this alone does not ensure the development of best practices, because it does not guarantee the relevancy of the knowledge contained in these flows. Nor does an increased knowledge flow density ensure that the members will make good use of the knowledge that they receive, which is why the sponsor also controls the practice's performance criteria.

These extreme cases demonstrate that the sponsor not only puts the COP on trial by controlling the number of developed best practices, but challenges the leader to justify these best practices' performance. Typically, the sponsor assesses a best practice according to:

- punctuality (does it allow time saving?)
- quality (does it deliver better output or lead to higher revenues?)
- cost (does it enable the organization to save costs?).

To assess practices' performance correctly and to estimate whether they make sense for the organization from a strategic point of view, the sponsor needs to be an expert. Consequently, the leader and core members have the responsibility of filtering the set of identified best practices. Through this filtering, the practices that sufficiently fulfill the performance criteria are chosen and presented to the sponsor at the end of the period. This way the sponsor can promote the benefits of the COP under his supervision to the organization's upper levels. Recognition from the top management leads to increased financial support for the COP.

Example: The Degussa Case

Degussa – the German multinational company in the specialty chemicals industry – has a COP of approximately 50 managers who share tools and methodologies used in project management (in the areas of plastics, pharmaceutical, and paint and coating). Both the sponsor and the leader of this COP are very involved in the network's activity. The leader constantly checks that successful project tools and methodologies have been shared with the network's members. He then informs the sponsor of the best tools and methodologies for mapping out the processes in greater detail, based on the following criteria: punctuality (do they allow time saving?), quality (do they deliver better output or lead to higher revenues?), and cost (do they enable the organization to save costs?). As both the leader and the sponsor are experts in project management, they are able to assess the project tool and methodology performance and accurately estimate whether these are strategic for the organization. Furthermore, the sponsor promotes the COP under his supervision by informing the top management of outstanding and innovative practices. Recognition from the top management leads to increased financial support. Such control procedures are required because the "project management" COP is recognized as a formal organizational structure.

Regularly feed the COP with external expertise

Our data suggest that knowledge related to the COP's practice is regularly imported from experts outside the COP. These experts can be from other organizations, or be part of the organization to which the COP belongs. They can either be practitioners or academics from universities and research centers. These external experts are invited to regular or *ad hoc* COP meetings, where they are requested to share their ideas, insights, experience in the field, knowledge of the COP's practice, as well as best practices *per se*.

We found two ways in which external expertise has a positive impact on best practice development and sharing:

Specialization in specific parts of the practice

External experts give detailed presentations on a specific aspect of the COP's practice. For instance, a COP invites several external experts, each of them specialized in one

specific sequence of a manufacturing process, to share their knowledge of a manufacturing practice (i.e. a process, a methodology). The advantage of this approach is that experts produce focused technical approaches, and usually provide a rich knowledge content of a practice's specific sequence (i.e. process, methodology). This proves useful for COP members, allowing them to significantly improve their existing best practices.

Maintain excitement within the COP

Organizing regular and *ad hoc* meetings with external experts around new exciting topics may bring an increasing number of motivated members to meetings. These interactions between motivated people stimulate creativity, generating new perceptions and ideas for developing innovative practices.

Example: The Swiss Hospital Case

At a Swiss state hospital, a COP of 10 cardiologists and 20 heart surgeons holds informal meetings every second week. Well-respected heart specialists from Swiss and foreign hospitals are invited, as well as professors from prestigious medical schools. These external experts provide new perspectives for solving the many and unforeseen cardio-vascular problems that occur during and after heart operations. These external perspectives prevent the doctors in the COP from overwhelming one another with the rigid mental schemes that are usually characteristic of the medical unit to which they belong. Usually, these invited specialists and professors give a detailed presentation on a specific part of the human heart. This focused approach provides the COP members with new and specific sets of surgical techniques.

Promote access to other intra- and interorganizational networks

Our results indicate that the COP leader promotes the access to *intra- or interorganizational networks*³ through their COP. This increases members' active participation. Through other COP members, they obtain access to practice-related experts outside the COP's boundaries.

The experts assist COP members in improving the practices they use in their organizational unit through internal benchmarking with their own best practices by helping them adhere to the practice performance's key indicators. Through a benchmarking process, a member either adopts the expert's best practice in its integral form, or only adopts elements thereof that he needs to integrate into his organizational unit in order to make it a "better" practice or a best practice.

Members may use each other as "swiveling platforms" to re-orient themselves towards practice-related experts in other organizations. Interaction with an external expert creates an opportunity for COP members to enter a process of external benchmarking. External benchmarking conducted with these external experts leads to improvements in the existing practices' elements by helping them adhere to the key indicators.

In both *internal* and *external* benchmarking, we found that two scenarios are likely during practice adoption:

- (1) The revealed practice fits technically into the COP members' field of operations. The revealed practice can then be directly adopted by the COP members, with few or no technical adaptations.
- (2) The exposed practice is not directly applicable to the COP's field of operations, but its process or methodology's general design provides the COP members with a new perspective, and could inspire the remodeling of an existing best practice within the COP, thus turning it into an even-better practice, or the creation of a new practice in the field of the COP's operations. In these two cases, COP members break the external practice down into parts, allowing some parts to be used to improve an existing best practice, or create a new practice.

Example: The IBM Case

At IBM, the 200 engineers and software programmers of the "electronics" COP are encouraged by the 4 COP leaders to use one another as "swiveling platforms" directed towards experts in electronics located elsewhere in or outside the company. Contact with experts within IBM's boundaries enables COP members to internally benchmark innovative solutions for designing electronic circuits for IBM's engineering and technology services. Contact with external experts at partner firms, such as Intel or AMD (Advanced Micro Devices), enables external benchmarking of microprocessor and computing solutions.

The COP leader must have a driver and promoter role

Our findings show that the leader increases the COP's attractiveness by distinctly structuring it into different sub-topics and coordinating the COP as a whole, with each sub-COP managing and indexing best practices relative to a specific part of the COP's general practice. With such a clustering, members have the impression that they are entering different "hubs" each time they search for a best practice related to a specific COP knowledge area.

Our data reveal that if a sub-division of the COP is perceived as a convenience for the members, the latter more willingly and regularly visit "hubs" to search for best practices. The sharing of best practices is therefore stimulated, as members are more willing to access best practices from a platform that clearly announces what it offers. Members also post and share best practices more enthusiastically on a platform where they know their practices will match other members' demands.

We also found that sub-COPs attract potential members if the COP leader publicizes their advantages throughout the organization. Potential members are valuable assets for the COP, since they can be holders of strategic knowledge and best practices that are useful for the rest of the COP.

Example: The Oracle Case

At Oracle – the American software giant – a COP of "optimal database usage" brings together some 200

³ Interorganizational networks extend beyond the organization's boundaries.

employees from the Europe/Middle East/Africa areas. Through this COP, users exchange technical processes and data-processing shortcuts that allow them to keep their knowledge of constantly evolving electronic databases up to date. In order to facilitate interactions between the COP's members, the leader has assumed a true coordinating role. As such, he has appointed 10 "country coordinators" from among the COP's most active members. They are in charge of bringing together COP members in various countries. The leader has also divided the COP into "sub-COPs," each focused on a narrow technical field within the area of databases. For each sub-COP, he has named one expert supervisor to assist with requests from the COP users. Consequently, users are directed more quickly when they want answers with regard to a specific part of the databases.

Overcome hierarchy-related pressures

We found evidence that within the COP's boundaries, members are no longer regarded as being under their direct superiors' orders, since a COP is a hierarchy-free, learning zone. Our data demonstrate that in the COP, the leader reminds members that they will not be judged and/or sanctioned by their direct superiors if they make mistakes, ask naïve questions, or admit that they have gaps in their knowledge. Group discussions on how to solve practice-related problems and develop practices flourish when there is no hierarchy-related pressure.

The first consequence of such a lack of hierarchy-related pressure is that the COP members do not fear losing their jobs or positions in the organization if they admit ignorance of certain practice-related topics. Furthermore, they develop a sense of having total freedom to criticize the practices that they encounter in their or other organizational units and to openly propose concrete solutions to improve these practices. Our data shows, however, that successful CoP leaders remind members that any suggestions aimed at modifying existing practices should impact organizational performance positively.

Evidence suggests that this "zero sanction", or "risk-free" atmosphere must, however, be coupled with a focus on the fulfillment of business goals, so that the members can seriously and rigorously engage in an ongoing dialogue of effective best practice development and sharing.

Example: The World Bank Case

At the World Bank, a COP of 20 active members develops and shares knowledge on "social funds allocation". Its objective is to develop knowledge about the many parameters that have to be taken into account when providing grants for developing poor and vulnerable Third World local communities. Even though the COP consists of employees from the same departments (but with different hierarchical positions), it is emphasized that they should develop a sense of total freedom to criticize the social funding allocation policies that they encounter within their department, or other departments of the World Bank. The rule is that they can openly propose better allocation parameters to improve the repartition of funds to Third World local communities. Even though COP members share knowledge across the boundaries

of their respective departments, barriers that make the sharing process more difficult sometimes remain because departments compete for budget attribution. To avoid reinforcement of these barriers, the top management continuously encourages the COP to fully legitimize the process of best practice sharing across departments. Top management executives convey their support directly to the COP's sponsor as the COP mediator.

Provide the sponsor with measurable performance

The COP's initial objectives are measured and the quantitative benefits for the organization are publicized in terms of the sponsor. The quantitative benefits intrinsically linked to best practices are, for instance, cost reduction, revenue increase, higher effectiveness, and speed of operations.

Technically, the sponsor ensures that quantitative data (adopting performance measures and reporting of achieved operational COP objectives) relating to the COP's tangible outcomes are reported at quarterly (or annual) COP meetings. The sponsor is thus provided with quantitative evidence that the COP is fulfilling its strategic operational objectives so that the top management can maintain, or increase, its investments in the COP. This approach most effectively illustrates that the COP contributes to the fulfillment of business results through the sponsor.

Example: The Bearing Point Case

At Bearing Point, consultants in the energy industry measure how many days they save in delivering a solution to a client when using existing solutions from their "energy industry solutions" COP. The number of days saved translates into reduction in time-to-delivery to the client, which means rapidly earned revenues for the company. The sponsor of this COP provides tangible evidence that the COP is helping Bearing Point generate revenues faster by providing proof that the COP is of strategic relevance for the company. In turn, top management invests more money in its IT platform and travel expenses for COP events, and even suggested extending the COP to other knowledge areas that are strategic for Bearing Point.

Illustrate results for COP members

Our results demonstrate that COP members are encouraged to post their written experiences with a best practice on an electronic scorecard reporting system. In these "stories," the COP members explain the entire process of how they implemented a practice in their organizational unit, how they used it, and even how they were able to improve it. More specifically, they relate, in an illustrative manner, how they could quantitatively measure the results that were generated through the use of a specific practice.

The aim of regularly illustrating the COP's success stories is to positively influence the COP members' motivation to participate in the COP by providing them with quantitative or qualitative evidence that their network has a positive impact on their organization's business results. In addition, such success stories provide the sponsor with quantitative and qualitative evidence that the COP is fulfilling its strategic objectives, allowing him to persuade top management to maintain, or increase, its investments in the COP.

Example: The PriceWaterhouseCoopers Case

At PriceWaterhouseCoopers, the global audit firm, 30 auditors take part in a "financial performance attribution" COP to share complex mathematical models that calculate the impact of financial assets on a company's performance. Auditors of this COP use "story telling" (or anecdotal evidence) to relate how they applied these different models to the financial reports that they deliver to clients. More precisely, they relate how each model (which they obtained by participating in the COP) helped them produce a better financial report in terms of client satisfaction. They also relate how much time these models enabled them to save in producing a report, and how much precisely (in %) they enabled them to calculate the performance attribution of each financial asset. A particular story even revealed how this COP was able to save 60 days/year of trial-and-error for the auditors by simply sharing past errors made with these mathematical models. This type of anecdotal evidence provides members with quantitative and qualitative evidence that their network has a positive impact on their day-to-day work.

The main reasons for failure of cops

The analysis of the interviews with the leaders of the 12 unsuccessful COPs clearly indicated five major reasons for failure common to the 12 COPs.

Lack of a core group

These COPs lack a group of core members actively engaged in its activities, such as regular participation in meetings, the inflow of fresh ideas, and support provided to other members on problem solving. Such a group usually emerges at an early stage of the COP and should remain stable thereafter.

Due to the pressure of the work load in a global consulting firm, the 8 members who initiated the "energy and chemicals" COP did not have sufficient time to regularly meet and discuss critical issues. Therefore, these consultants failed to develop into a solid core group dedicated to being a coordinating driving force and a point of reference for the 70 other COP members seeking support.

Low level of one-to-one interaction between members

These COPs lack one-to-one interaction between members (face-to-face, telephone, e-mail etc.). Specifically, members rarely contact one another regarding practices that they use in their respective units, or to help one another solve common problems.

Within an international organization, the "humanitarian projects" COP witnessed a drastic decrease in the communication between members when top management withdrew its allocated budget for *funding* (for quarterly face-to-face meetings) and *nurturing* (e-communication tools, IT support). This resulted in the members showing no enthusiasm to maintain their collaboration in the

COP, which gradually led to a great decrease in the personal communications between the members.

Rigidity of competences

Members tend to primarily trust their own competences, and are therefore less willing to integrate practices originating from other COP members into their daily work. Consequently, reluctance to learn from others impedes members' capacity to absorb new competences. Practice transfers between members of the COP are therefore rare.

Rigidity of competences occurred in an international organization where top management encouraged departments to compete for budget allocation rather than promoting a culture of knowledge sharing across organizational units. The "process" COP that was set up by a group of employees interested in streamlining the sharing of logistic practices between departments failed. Since potential users of the COP belonged to "competing" departments, they were very reluctant to share their most efficient practices with one another. The COP died a "natural death," as it was perceived as a platform for "trading" practices to the advantage of one department and, consequently, to the disadvantage of another.

Lack of identification with the COP

Members do not view participation in their COP as meaningful for their daily work. They thus do not perceive other members as peers who can assist them with useful knowledge and practices. Often, members cannot identify with the COP's practice, simply because the practice is not made explicit enough for external viewers.

An automobile company formed a COP of operators around "plant operations". Unfortunately, the domain was so wide that the various members were only interested in specific, small parts. The community was therefore not able to hold the members' interest, as there was no mutual interest in these various small parts of the production process. For the members to identify with the COP, the community would have had to narrow its scope to the various specific parts of the production process.

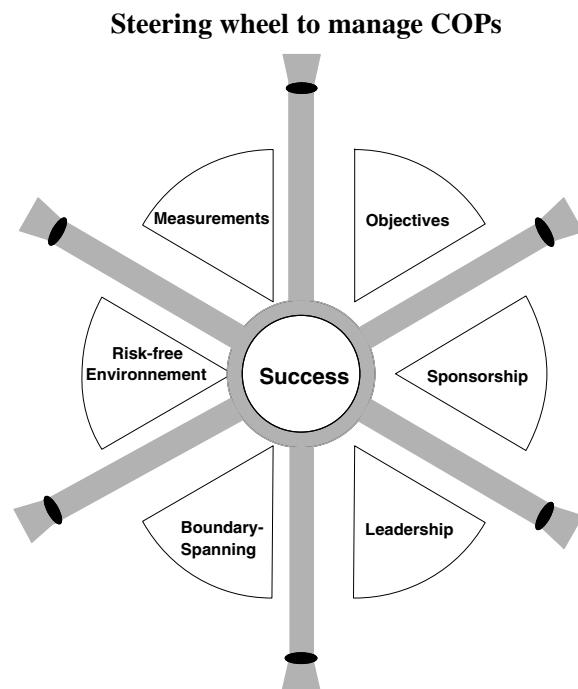
Practice intangibility

Practice intangibility occurs when members fail to engage with one another in a way that allows them to illustrate the practice to make it concrete enough for other members to understand and visualize its function. The 12 unsuccessful COPs all used inappropriate tools (e.g. imprecise documentation and visual supports) to illustrate their practices.

In a "well-digging" COP (in a large non-governmental organization), the engineers exchanged printed instructions on how to dig, instead of meeting at different digging sites to actually observe the digging techniques (or sending each other video films of digging at various sites). This resulted in poor learning for the members, who gradually dropped out of the COP.

A cop governance model

In light of our results, we propose a COP governance model, which we present as a normative tool that encapsulates issues raised by the literature on governance and our empirical results:



First, evidence from our data suggests that clear *objectives* provides members with responsibilities and motivates them to contribute more actively (McDermott, 2003; Wenger, 2000). Second, senior executives need to provide *sponsorship* to help communities reach their full potential (Büchel and Raub, 2002; Lesser and Everest, 2001; Wenger and Snyder, 2000). Through ongoing collaboration with COP leaders (i.e. governance committees), sponsors keep track of the development and sharing of practices. Third, organizations can designate *leadership* roles to motivate community members to collaborate (Lesser and Everest, 2001; Thompson, 2005; Wenger et al., 2002). Effective leaders make the COP as attractive as possible for the members by distinctly structuring it into different sub-topics, and by coordinating the COP as a whole. Fourth, organizations can establish links beyond the community's *boundaries* that enable knowledge to be shared both throughout the organization (Wenger, 2000) and outside the organization (Wenger et al., 2002). *Boundary spanning* enables members to engage in internal and external benchmarking of practices. Fifth, COPs should be used as an especially valuable opportunity to express and test ideas in an informal and *risk-free environment*, thus requiring a strong degree of safety and intimacy between members (Edmondson, 1999; Breu and Hemingway, 2002; McDermott, 1999). Finally, empirical evidence suggests the use of *measurements* to assess the value of communities of practice (McDermott, 2002; Wenger and Snyder, 2000). Measurements should be presented to management on a regular basis to allow the COP to continue receiving institutional support.

Discussion

Some of the issues discussed as being important for successful COPs are very similar to those mentioned in change management literature. Change management, like COPs, also requires the exploitation of existing knowledge and the exploration of new knowledge (Floyd and Lane, 2000). Furthermore, organizational change, like COPs, is about learning (Beer et al., 1990). However, the following findings explain the similarities and differences between the two disciplines in more detail:

First, our finding "stick to strategic objectives" is analogous to what various authors have stressed as crucial for top management to instigate a change process in an organization: "set strategic direction" (Mintzberg, 1983), "create a vision" (Kotter, 1995), "articulate strategic intent" (Hamel and Prahalad, 1989), and "goal setting" (Beer and Nohria, 2000). The difference, however, is that in COPs these strategic objectives are set by members – top management only ratifies and recognizes these objectives through governance committees in which sponsors participate.

Second, the governance mechanism "divide objectives into sub-topics", is analogous to the recommendations in the change management literature to streamline change processes: "categorize issues" (Dutton and Jackson, 1987), and "synthesizing" goals into different headings (Floyd and Lane, 2000), thus providing people with a clear path to follow.

Third, our findings "governance committees with sponsors and COP leaders" and "have a sponsor and a COP leader who are best practice control agents" are analogue to the "guiding coalitions" (Kotter, 1995) that are used in managing organizational change to steer and evaluate the change effort. Similar to the way that top management's role is to recognize the strategic potential of a change (Burgelman, 1991; Floyd and Lane, 2000), COP "governance committees" role is to recognize areas of knowledge on which COPs can focus their future efforts to develop and share knowledge and practices. Kotter (1995) has also stressed the role of top management in "planning for and creating short-term wins" during a change process by planning for visible performance improvements. This is in line with the "best practice control agents" role played by COP sponsors and leaders when they control whether or not a COP effectively develops and shares best practices over a pre-determined time.

Fourth, the *driver* role of COP leaders in coordinating the COP as a whole resembles the leadership skills required to drive change in organizations: motivate and inspire (Hart, 1992), coach (Quinn, 1980), and facilitate learning (Chakravarthy, 1982).

Fifth, the final step of a successful change management process requires top management: (1) to take cognizance of the relationships between the changes and corporate success (Kotter, 1995; Beer and Nohria, 2000) and (2) publicize the benefits of change to employees to motivate them and to "refreeze" the organization after the change process (Lewin, 1951). In an analogous way, successfully managed COPs: (1) provide their sponsor with a measurable performance to obtain additional support (funding, nurturing), and (2) provide their members with quantitative measures

to prove that the activity of best practice development and sharing within the COP has a positive impact on the organization's performance.

Guiding COPs and steering a change process differ significantly on one point, however: the level of formal authority that top management exerts over the entire process. To implement incremental and radical change processes in an organization, senior managers set demanding standards for all operations and then hold change agents accountable for the application of these standards (Beer et al., 1990; Beer and Nohria, 2000; Ansoff, 1987; Floyd and Lane, 2000; Kotter, 1995). Successful COPs, in contrast, set their own objectives by conforming to corporate strategy, and in return are supported by top management in the form of funding and nurturing. Top management therefore exerts *indirect* control to ensure that the "risk-free" environment in COPs (no hierarchy-related pressures) is not breached and to maintain the "spontaneous" or "self-developing" character of COPs (Wenger and Snyder, 2000; Lave and Wenger, 1991).

Conclusion

Successful COPs are well-balanced systems that oscillate between exploring new practices and exploiting existing ones. Although COPs mostly self-organize spontaneously through the needs expressed by their potential members (Wenger and Snyder, 2000), these structures have to be guided by strategic objectives. These objectives, which are quantitative/qualitative and operational, must be aligned with the organization's activity (exploitation) and adaptable to the COP members' specific needs with regard to changes in their organizational units (exploration). Guiding a COP successfully mainly requires the constant presence of a sponsor who must liaise between the management and the COP, and ensure that the COP sets objectives that conform to the organization's strategy. This type of "monitored" guidance requires close and continuous cooperation between the sponsor and the COP's leader to best manage the link between the management's strategic area and the COP's operational one. The sponsor should report a COP's most efficient/effective practices and tangible results to top management to allow the network to receive resources and publicity throughout the organization. COPs' top-down guidance also requires the management to monitor, through the sponsor, their realization of measurable targets. Successfully managed COPs also have a leader, or several leaders, who structure the network in a way that optimizes best practice transfer. Guiding a COP to success essentially requires a highly experienced and strongly coordinating leader who is able to continually keep abreast of other network members' competencies.

Successful COPs are found in an organizational context in which experts enjoy total freedom with regard to network collaboration across their respective units. In such a context, top management must strongly encourage intra-organizational collaboration, and COP interaction must take place at a pace and rhythm chosen by its members.

Wenger and Snyder (2000) claim that the sponsor should take on a supervisory and control function by requiring COP participants to complete one knowledge development pro-

ject per year, such as documenting a best practice, in order to remain in the community. The authors, however, do not provide any further explanation regarding the procedures that should be undertaken, how this control should be pursued, and who the actors should be. Our investigation explored this issue in depth. Our research finding of the "sponsor as a control agent" is a new in COP literature; it explains how the sponsor should involve the COP leader in the control process, and how he should require the leader to provide him with a specified number of best practices developed within the COP within specified time intervals. Furthermore, the finding specifies that the sponsor should only accept such best practices if they fulfill specific performance (or "innovative") criteria – which requires the sponsor to have some expertise in the COP field. This finding has potential for further empirical research to identify the best measures that sponsors could use to control such practices' quantity and quality (also linked to the innovation of practices).

As far as sponsors are concerned, Wenger (2004) claims their role is to assess whether COPs deliver value for the organization. However, past research has not yet suggested regrouping sponsors and COP leaders into committees so that the former can obtain a complete overview of the value that the different COPs generate for the organization. Thus, our finding "form governance committees with sponsors and COP leaders" is unique in COP literature. This finding bridges the gap in the literature between sponsors and COP leaders at governance structure level by presenting the advantages of grouping sponsors and COP leaders into the same committee, so that sponsors can assess each COP's activity through the leaders' knowledge of the field. The finding also presents how top management's funding is allocated according to this assessment of COP activities. Presenting governance committees as a general COP activity-reporting session that assesses which COPs are strategically important for the organization diverges somewhat from Wenger's (2004) research. In Wenger's (2004) view, sponsorship does not involve reporting on relationships. According to this author, it is rather about the sponsor providing resources and legitimization without a well-defined counter proposal being presented by the COPs. In other words, the sponsors convey their proposals to the top management, so that the latter can affect the way business is conducted. Our findings suggest that a governance committee offers a set of opportunities: for inter-COP sharing of best practices, for each COP to become increasingly visible to the top management, to merge COPs, and to benchmark activities across COPs. There is, however, still a wide scope of research opportunities in the field of "governance committees" as applicable to COPs. Future research may focus on finding measures to sustain the activity of such committees, or on how a hierarchy can be built to regulate and formalize their activity.

We suggest that several "successful" and "unsuccessful" COPs should be examined by means of an ethnological approach, thus interacting with many members to gain an in-depth understanding of each factor's significance for COP success and failure. More specifically, we suggest that future research be focused on the relative importance and prioritization of these factors. This would finally provide practitioners with a complex perspective of the reasons of

COP success and failure – which COP literature has until now neglected.

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