Communities of Practice at the Center of Information Strategy: Bridging the IT-IM Gap

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Contents

Introduction

Technological innovations have increased and expanded rapidly to aid human productivity in the workplace, which has lead to IT complexity. So too has the quantity of information that circulates throughout enterprises, requiring a great command of information management in the face of technology. This combination of IT complexity and information volume has created a need for more refined information strategy and execution, as well as greater collaboration between the IT and IM functions in the organization.

As senior management teams grapple with the challenge of maximizing IT benefits to the organization, the role of the information manager has evolved to incorporate an understanding of technology tools and how they impact traditional information management practices. Information management as a more well-defined professional field is now being perceived by many as the anchor for the IT office; the next solution to the complexity and chaos that often reigns in a sea of novel and ever-changing technology, and largely unseasoned (i.e., fairly new to the work world) IT professionals. However, these two offices – IT and IM – have traditionally housed two very different types of professionals, even though a closer look reveals obvious similarities, not limited to their focus on the best mechanisms for storing and distributing a company's information assets.

Despite their natural differences and tendency to work independently of each other, literature indicates that close cooperation between IT and IM can help reduce IT complexity while improving information strategy within the organization. Thus far, this idea of a cooperative IT and IM office has been mainly proposed as a theoretical concept. Meanwhile, many companies still struggle to intertwine the two seemingly compatible areas of the business. Why does this trend still persist and what can management do about it?

This paper seeks to identify the specific reasons for the IT-IM disconnect in today's enterprises. It proposes the adoption of 'communities of practice' as one possible solution to eliminating the challenges of today's information organization, by enabling better communication and leaner practices among those accountable for information strategy and its outcomes.

Examining the IT – IM Gap

Ever since the 1981 discovery made by Nobel laureate Roger Sperry, popular and proven psychology have espoused the distinct differences between the two hemispheres of the human brain in terms of what types of cognitive skills tend to be handled by each. ('Left Brain vs. Right,' 2007) Although some still question this phenomenon, the literature on this subject lends insight into some of the natural differences between the traditional information professional job type and the information technology job type. (Freeman, 2005)

The traditional IM office has consisted of librarians (special, public and academic), including records managers, taxonomists and ontologists. (SLA, 2007) The IM profession gravitates towards a focus on content and its organization and use, as well as the end users of information within a given context. By nature, traditional information management would be considered as being a left-brain dominant pursuit. The information technology field, on the other hand, is focused on more abstract application and structuring of concepts and tools, making it a right-brain dominant profession. This profession consists of programmers, and database and systems administrators. (SLA, 2007)

Beyond these psychological or biological explanations, there seems to be a common tendency in the business world towards distinguishing between information management and information technology by thinking of IM as being focused on the information itself, while IT

focuses on technology. We quickly forget that IT is also about information, not just technology. The reasons for this preoccupation with the technology side may be twofold: IT staff dealing with the technology from day to day possess the natural tendency towards it (for biological and psychological reasons offered above) while the technical complexity of IT also forces their attention away from all things non-technical.

The reality of IT complexity lies at the core of the problem being addressed in this paper; while the IT function would adequately manage information strategy while keeping the technical systems running, the IT function lacks the bandwidth to reach beyond technical functionality until IT itself is simplified. Today, sources of IT complexity include outsourcing, the adoption of ever-changing Web and consumer applications, legal compliance, support of mobile workforces, mergers and acquisitions, legacy systems and ensuring the security of large networks. (Gruman, 2007)

By acknowledging the key differences between the two functions as well as their functional limitations, one can begin to see why IM and IT do not naturally merge into one, even though today's enterprise needs an effective blending of both functions for the successful realization of information management strategic goals.

The Growing Need to Close the Gap

Much of the literature emphasizes the need for IT to partner with the business for reducing IT complexity and achieving information management goals. (Griffin, 2006; Gruman, 2007) The 'business,' in this sense, is often described as the finance function or the executive suite within an organization. Griffin (2006) describes a partnership between the finance and IT functions as one possible solution to diminishing IT complexity, because Finance departments today tend to be the gatherers and managers of much of a company's information assets via

business intelligence reporting. If one should take a broader perspective of the IM function with this notion in mind, one may think of it not as a formal department within a company, but as a collection of employees in a company that serve as the designated information collectors and brokers due to the nature of their jobs. The reality is that a formal IM office relies on senior managers and specialists from functions such as Finance (Griffin, 2006) to provide the information from their various departments and communicate the information needs of the general staff to the IM office. Hence, the IM function can arguable consist of librarians, taxonomist and other traditional IM professionals, as well as the dispersed managers and specialists who have a direct pulse on the information needs of the entire staff.

Both perspectives of the IM function—as a formal office as well as a collective of specific job roles—will be considered in the application of Communities of Practice discussed in the following section. Even without a defined distinction between the two, what remains true is that both the IM and IT functions need ongoing collaboration for strategic management of information related to the business.

Possible Solutions to the Problem

As a possible solution to reducing the disconnect between the information management and technology functions, Lustig (2005) identifies the need for a morphing or evolution of the role of the information management professional. These new roles, which include 'Information Liaison' and 'Content Engineer,' clearly ring of a need for some kind of connecting force between IT and IM. Lustig (2005) describes these new roles as working closely with the IT staff to better match users with content and tools, and at the juncture of IT and IM. Indeed, this proposition of a shift in the IM profession has become popular in the literature as one clever way to resolve the ongoing need for a bridge between IT and IM. (ASIST, 2007; SLA, 2007)

But, should the information profession constantly seek to stretch out of its natural realm into technical fields that may be completely uncomfortable to many in the profession today? Such a tall order is leading to what some describe as "waste" in the profession; where trained librarians, records managers and other skilled information professional stretch so far out of the traditional field that they lose some of the core skills that differentiate them from information technologists. Rather than hope for librarians who know technology inside out (or, for that matter, information technologists who know library science inside out), the two functions may serve their combined needs best by recognizing the intersections of IM and IT, and collaborating in a conscious, proactive and ongoing manner.

Thus far, the cultural issues of cross-functional collaboration have largely been viewed as secondary issues, while senior management focuses on IT systems, identifying and structuring data, and determining who can access what. While these steps are equally important to effective information strategy, a complete focus on the technical systems will not erase the disconnect between these two culturally divergent groups. What is needed is a solution that recognizes and incorporates the human factor that is lacking from most cross-functional collaboration efforts today. An examination of communities of practice—their history, nature and role in the organization—reveals a solution to bridging the functional gap, which will in turn actually serve to enhance the technical systems in place.

Communities of Practice Defined

Communities of Practice (CoP) is not a new concept in the business world. Even prior to the term being coined, employees gathered informally within organizations in the form of ad hoc committees to discuss issues of common concern across professional fields. (Wenger, 1998) By their nature, communities are a social phenomenon. (Bond, 2004) Communities of Practice are

defined as being informal, with fluctuating participation and size, and crossing traditional organizational lines. A Community of Practice evolves into itself through a mutual understanding of the problems, issues and information needs of its members. (Wenger, 1998) Members of the Community set their own agenda and the CoP as a unit defines itself by the needs of its members. (IBM, 2001) There are typically no formal projects assigned, but rather the members take part in CoP activities related to their specific work problems. Activities of a CoP include, but are not limited to education sessions, conferences and day-to-day interaction designed to resolve current work issues. (IBM, 2001) Communities of Practice have traditionally existed in a physical form as face-to-face meetings among its members, which creates an atmosphere for mutual trust and more open knowledge exchange.

It is the recognition of the benefits of such natural human interaction that has lead to the popularity of communities of practice being used as a strategic initiative in the business environment over the years. Companies and their employees take advantage of CoP for collaboration, knowledge-sharing and idea-sensing, which is typically restricted by formal boundaries across different job functions and management hierarchies.

Although CoP is not new to the business world, the onslaught of digital communication tools, often known as Web 2.0 technology, have seemed to replace many of CoP's recognizable characteristics, namely the ability to communicate informally across functional lines on an as-needed basis. However, simply providing the technology tools does not achieve the same outcomes as a community atmosphere. (IBM, 2001) Digital tools house data and information that often attempts to approximate knowledge, while conversations among people gathered in a room for the purpose of knowledge exchange achieves that goal more effectively. As McDermott (1999) puts it, "if a group of people don't already share knowledge…don't already understand

what insights and information will be useful to each other, information technology is not likely to create [this atmosphere].” Today, CoPs can fill in where modern intellectual exchange tools by themselves, such as knowledge management portals, leave off. (IBM, 2001; McDermott, 1999)

Shortcomings of knowledge management portals and other computer-mediated communication tools include a lack of structure or updating of informal content that is added to its repositories; employees’ reluctance to contribute content due to unfamiliarity with each other or a lack of reciprocation; no mechanism for validating content; and missing context for posted content. With the face-to-face interaction and real-time brainstorming characteristic of CoP, many of these challenges are avoided. Organizations such as the World Bank and IBM have been leveraging CoP to circumvent these knowledge sharing obstacles posed by other tools within their organizations. (IBM, 2001)

McDermott (1999) captures the source of failure among Web 2.0 computer-mediated tools as a complete replacement for CoP through an examination of what knowledge really is. He argues that true knowledge capture needs to involve a combination of technical and human systems for the following reasons:

- Knowledge is a human act
- Knowledge is the residue of thinking
- Knowledge is created in the present moment
- Knowledge belong to communities
- Knowledge circulates through communities in many ways
- New knowledge is created at the boundaries of old knowledge

Thus, Web 2.0 tools should be deployed to enhance CoP rather than replace it, since by themselves Web 2.0 tools may never facilitate the human factor in a way that the physical aspect of CoPs do.

Structuring CoPs for Strategic Information Management

Unlike many established teams within the enterprise, CoPs cross formal functional lines in a natural way according to the needs of its member. Thus, instead of moving into newly defined roles, as Lustig (2005) and others have proposed to fill the functional gap, employees can benefit from being a part of a formal functional unit that continues to sharpen their unique professional skills while they learn from peers in other functional units through a CoP.

CoPs may exist within a function, across functions within the enterprise, across business units or across organizations. (Wenger, 1998) The type of CoP proposed for this study would fall in any of these categories, except for the CoP that is limited solely to employees within one functional unit (for example, IT employees only or IM employees only). The specific composition of the CoP in terms of its membership would vary depending on the needs of the organization. The important factor in solving the IT – IM disconnect is to have a CoP composed of members from both functional areas.

Earlier in the paper, I identified two perspectives of the IM function—one consisting of a formal IM office with librarians, records manager and other traditional information professionals; the other consisting of information professionals as well as senior managers and specialists from various departments in the organization. For the former, a CoP composed of IT and IM staff would be the ideal scenario. For the latter definition of the IM function, a CoP composed of IT staff, senior managers from different functional units and perhaps representatives from the executive suite may be most ideal. The critical goal is to facilitate

Community participation among the key stakeholders of information strategy within the enterprise.

Because IT is often perceived as serving an operational purpose to the business, which is the end customer, IT staff often grapple with getting the various functions and business units to find common ground in their technology requirements. Motorola points out that it takes maturity to work across silos. (Gruman, 2007)

Many of the examples of IT – IM collaboration described in the literature limit interaction to the heads of functional units, such as the CFO and CIO. However, Wenger (1998) points out that in reality, executives only have an abstract understanding of the daily business, spending most of their time in executive meetings, discussing issues with only their direct reports and over lunch or golf with peers. Hence, cross-functional collaboration solely limited to functional heads coupled with the challenge of helping diverse units find a common ground, will not achieve the deeper insights and exchange that is really needed to bridge the IT – IM gap. A good IT – IM Community of Practice will involve different levels of staff from each function, from senior managers to worker bees.

IBM (2001) recognizes that within a large company, there may be dozens of CoPs serving many different strategic needs, which can become expensive for a company to maintain. Alternatively, IBM suggests focusing energies on CoPs that serve the primary strategic goals of the enterprise. For a pharmaceutical company, for example, these many include research and development communities focused on knowledge and idea exchange for new drug discoveries.

In various parts of an organization, CoPs have been leveraged to achieve many different kinds of strategic goals, including the rapid on-boarding of new employees, responding quickly to customer needs and spawning new ideas for products and services. For an IT – IM

community, the focus may be on any of these areas, as well as issues related to information processes, content or policies. All factors considered, the primary focus of strategic information management in a company should be linked to the role of IT investments within that company. The literature identifies four different modes of IT operation in companies, which include 'factory mode,' 'support mode,' 'strategic mode' and 'turnaround mode.' (Nolan & McFadden, 2005) The first step in choosing an appropriate angle for an IT – IM CoP for the organization, therefore, is to determine in which IT mode the company operates.

An IT function that operates in factory mode would rely on speed of information flow and rapid corrective actions to be successful. Thus, IT staff may be most dependent on the IM function for streamlining the collection and analysis of information in a rapid manner. The information needs of the business would need to be clearly understood by IT with minimal room for error. An IT – IM CoP for factory mode IT would, therefore, involve conversations about how information use can be supported by the technical systems, particularly complex information and data that support the day-to-day running of the business.

Unlike a factory mode CoP that may contribute to the goals of the organization without active participation of executives such as the CIO, a strategic mode CoP would need the input of the executive team to ensure that collaboration efforts include conversations about new directions for the company's use and management of information. Major decisions are more likely to surface from this type of CoP regarding new IT acquisitions or information products that would need executive input and sign-off.

A CoP for an IT function operating in turnaround mode would need both the input of lower level staff to help identify areas of day-to-day inefficiencies within the current system, as well as senior level involvement to help make the hard choices about spending. Turnaround

mode IT may also imply future change in daily work processes. Hence, involving the lower level staff early through CoPs will enhance the ease and effectiveness of such change efforts.

Support mode IT operations may require the least input from the IM function since IT functions have minimal impact on the running of the business. Consequently, there may be arguably little incentive among employees (both IT and non-IT) to create or participate in a CoP.

Besides considering factors that are specific to IT – IM Communities of Practice, the literature offers general guidelines for designing communities of practice, including the following seven principles: (Wenger, McDermott & Snyder, 2004)

- Design for evolution: because communities tend to be in flux according to their membership and interests, it is best to allow flexibility for growth, collaboration methods and shifts in interest
- Open a dialogue between inside and outside: CoPs need to recognize the importance of having an external perspective to introduce fresh ideas and solutions to problems
- Invite different levels of participation: allow core, active and peripheral members in a CoP, bearing in mind that all types of participants stand to gain a lot, which they take back to their individual job roles
- Develop public and private spaces: individual interactions help strengthen the relationship among CoP members; providing different types of forums for interactions will also help less active members (those who seldom attend meetings) to feel fully welcome at all times; alternative forums may include one-on-one talk sessions

- Focus on value: value is important for giving a community a sense of purpose; however, the authors caveat that it is better to allow values to emerge rather than set a predetermined value for the community
- Combine familiarity and excitement: unlike most other forums in a company, CoPs allow for the expression of ideas familiar to its members that have no other outlet in the organization; CoP members look forward to these opportunities for self-expression and idea exchange
- Create a rhythm for the community: the right rhythm, including the scheduling of events of various sizes and intimacy levels impacts the energy and success of the CoP

Many of these guiding principles will be examined again in the later discussion of the role of the CIO in ensuring the success of IT – IM CoPs.

Examples of CoP Applied to the IT and IM Functions

There are limited examples of actual IT or IM Communities of Practice in the literature, but many of the collaboration practices described offer evidence of the presence of groups that characterize a CoP. In a 2005 study of senior IT and finance executives in North America, Europe and China, Deloitte Consulting LLP found that many respondents in the study were focusing on collaboration between IT and Finance as one way to solve issues associated with IT complexity. (Griffin, 2006) Their rationale behind this move is that in recent years, the Finance function has evolved to become the primary aggregator and interpreter of information vital to the business. Hence, Finance is in a good position to ensure information quality and governance within the organization. In some of the companies in the study, the CFO worked closely with IT to understand and remove barriers to information quality, which included assigning accountability and creating policies and procedures for better information management. This

action of the CFO lead to closer collaboration between IT and the business. Here, one can recognize a Community of Practice that began with an IT – CFO collaboration, where the CFO was perceived as the main information manager/representative for the company.

The Deloitte study (Griffin, 2006) did not include IT partnering with other functional areas, but the example of collaboration with the Finance office, which was seen as the central IM function for the company, illustrates the value of the IT – IM CoP. According to Griffin (2006), the practice highlights how collaboration with the business helped IT understand business processes and people who use information, while the business gained a deeper understanding of IT functions.

Motorola uses Enterprise Architecture blueprints to ensure that conversations between IT and the business do not devolve to requirements being thrown at each other without a mutual understanding of the business needs. (Gruman, 2007) However, creating architectural blueprints do not mean they are automatically understood or adhered to. Gruman (2007) points out that these blueprints serve as a platform for "rich, interactive, high-quality conversations around real solutions…." However, Motorola reports that this state of collaboration has not been easy to achieve and requires that employees step outside of their immediate functional roles to work with other functions towards a common approach. (Gruman, 2007) Again, we see the need for a collaborative effort that characterizes a typical CoP. Tools alone (in this case, enterprise blueprints) will not do the trick.

Software giant, Microsoft, has been working on its own version of Information Technology Communities of Practice. (Malik, 2006) The company cites many prospective advantages of having IT CoPs, including the added freedom executives (such as the CIO and CEO) will have to focus on strategic initiatives while the CoPs focus on tactical issues pertaining

to their realm of expertise. Through this arrangement, IT CoPs can provide governance that approximates state and local government within a federal system.

According to Microsoft, IT CoP may be most useful in companies that have multiple IT operations by business unit or project type, in which case there would be many persons with the same job title. These employees could create a CoP to help standardize IT systems and processes and coordinate growth plans. To balance power between CoPs and central control (that is, the CIO, CEO, etc.), there could be a list of areas that are off-limits for the CoP to dictate activities for the company. (Malik, 2006) Though limited to the IT function only, this description of the role of the IT CoP within the company resembles the notion of governance described by companies like TD Banknorth (Gruman, 2007), where IT partners with the business early to avoid unnecessary complexity created by IT investment decisions that are not compatible with existing systems.

IBM (2001) is also a strong proponent of having Communities of Practice to serve the IT function, noting that to take full advantage of a firm's intellectual capabilities, an organization needs to do more than simply deploy its technology. There is also a need to build the appropriate connections, relationships and context for knowledge exchange between those who have it and those who require it. This is where the IM function comes in, providing insight into the information needs and possible applications of the available technology.

The Role of the CIO in Leveraging Communities of Practice

McDermott (1999) suggests that "communities are held together by people who care about the community." Bond (2004) also points out that CoPs are paradoxical in nature in that they are informal entities, but do need some degree of formal structure to make them effective, because "structure enables as it constrains." A CIO could play the role of liaison between the IM

and IT teams, ensuring that each group knows what the other is working on and highlighting issues of potential mutual interest. The CIO could also pinpoint areas that are ripe for collaboration and knowledge-sharing until the two groups begin to recognize this on their own and initiate interaction through the CoP.

Since CoPs flourish best as naturally formed entities with flexibility for the level and type of interaction, the CIO should be careful to take a leadership role rather than a supervisory role in stewarding the CoP. Too much micro-management would contradict the purpose of the CoP. (Bond, 2004) Wenger (1998) suggests that leaders aid the success of Communities of Practice by legitimizing participation. This type of support includes allowing employees time to participate in CoP activities during the work day. The CIO may also help to negotiate the strategic context of the CoP by identifying and advertising how the knowledge exchanged among its members is linked to the strategic goals of the business. (McDermott, as cited in Wenger, 1998; IBM, 2001)

Wenger and others (Wenger, 1998; IBM, 2001) also recognize the need for tangible rewards to encourage favorable work practices, such as participation in a Community of Practice that benefits the business. However, senior management would not want CoP participation to lose its true purpose and value because employees get involved simply for additional pay. One suggested solution is for CIOs to implement a performance review system that incorporates conversations about CoP contribution and learning. Hence, the reward is subtle enough to not negatively influence employees' reasons for participation in a CoP.

Summary and Conclusion

This paper has examined various possible causes for the ongoing disconnect between the Information Technology and the Information Management functions that characterizes today's business environment. These causes include the traditional nature of each function and the

different personality types and skill sets they tend to attract, as well as the complexity involved in IT, which leaves little bandwidth for IT staff to focus on information strategy. The discussion also highlighted the need to bridge the functional gap for more efficient and cost-effective information management.

The concept of Communities of Practice has been identified as an old idea that may solve a modern problem, due to its inclusion of the human factor in bridging the communication gap between IT and IM. The paper outlined factors to consider in structuring IT – IM CoPs within organizations with different strategic goals for IT and the business. It was suggested that the IM function could be viewed as a formal organizational unit or more generally as a composition of managers and specialists that control the organization's core body of knowledge and business intelligence. Also of note were the different modes of IT operation and how each can influence the make up of IT – IM CoPs.

Because CoPs lack the rigidity and structure of the existing organization where roles and titles are well-defined, they allow the human factor to more effectively influence conversations in the right direction, breaking down hierarchical and functional barriers, which leads to insightful discoveries and innovative ideas. Communities of Practice pull out the ying and yang of IT and IM, which the organizational structure tends to inhibit on a day-to-day basis across business functions. Until one can convincingly propose that IT and IM become one single office, Communities of Practice can bridge the gap for creating unity in the information sphere of the enterprise.

Limitations to this Paper / Future Research Needed

The literature does not identify drawbacks to or failures of CoP as the concept applies to the IT or IM function. However, in-depth an analysis of the strengths and weaknesses of its features might lend insight into these shortcomings.

The current literature on Communities of Practice also does not include sufficient application to IT or IM for one to properly examine how the various job roles within these functions can best collaborate. There is also a paucity of data on studies conducted on formal communities supporting the collaboration of IT and IM, which would provide insight into the current success, potential and shortcomings of IT – IM CoPs. Hence, while there is sufficient theoretical evidence supporting the main thesis of this paper, there is still little in terms of actual proof of concept for IT – IM Communities of Practice as a promising solution for the execution of strategic information management.

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