The Gospel of Knowledge Management in and out of a Professional Community*

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ABSTRACT

Knowledge management (KM) remains an anomaly in most corporations today. Critics call KM a fad of the 1990s, whereas supporters claim KM is actively evolving. Our work examines the disciplinary rhetoric of KM: How is it that practitioners of KM seek to legitimize their field in the corporate world? We focus on practitioners in the aerospace industry and their forum. We argue that this forum serves as a hub for constructing KM's legitimacy. Our two year ethnography traces the rhetorical strategies utilized by informants in and out of a professional community to legitimize KM as discipline in the aerospace industry.

Categories and Subject Descriptors: K.4.3 [Computers and Society]: Organizational Impacts; K.7.2 [The Computing Profession]: Organizations

General Terms: Human Factors, Management

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1 Introduction

Knowledge management (**KM**) is arguably an aging field. In the late 1950s, Drucker [9] coined the term "knowledge worker" to prophetically describe the increasing value of education over skill in manual labor. "Work that is based on the mind rather than on the hand" became the primary capital of organizations. By the late 1970s, Bell [4] further expanded on this concept by describing the impending transformation to an "information society" where information-based services dominate tangible goods.

While these antecedent works are often cited as the underpinnings of KM, they do not make a clear dichotomy between knowledge and information. Furthermore, they do not necessarily posit that knowledge itself can be managed. Rather, it is by the 1980s–1990s that a distinct tract of rhetoric appeared that now forms the basis of the KM field [27]. A small smattering of this seminal corpus include works by Choo, Lave & Wenger, Nonaka & Takeuchi and Sveiby [6, 14, 18, 25]. Various KM organizations such as the

American Productivity and Quality Center (APQC) and the International Knowledge Management Network were also formed during this time.

Despite KM's relative age, its very status as a *discipline* is still in dispute. In fact, much of the literature after 2000 is about what KM is. Prusak [22] defends KM as not being simply a profitable fad promulgated by consultants but a discipline rooted in a rich intellectual history dating back to Durkheim. For some, KM is merely a formality on something we have always been doing [12] since the Library of Alexandria. Wilson's [28] biting critique, *The nonsense of 'knowledge management'*, states, however, that "the conclusion is reached that 'knowledge management' is an umbrella term for a variety of organizational, activities, none of which are concerned with the management of knowledge." His conclusions are deduced from the widely disparate definitions and viewpoints of KM, the commercial nature of KM products and the superficial incorporation of philosophical concepts (e.g., tacit knowledge [21]) into the KM methodology.

In this paper, we do not seek to concretely answer what KM is. Nor do we attempt to discover whether KM as a whole is a legitimate and viable discipline. Our lens of focus is considerably narrower; our ethnographic inquiry is on a group of self-described KM practitioners in the aerospace industry. Hailing from different aerospace companies, these KM practitioners participate in quarterly face to face meetings at the "Midwest KM Exchange Community of Practice[1]" (hereafter called the **KM Exchange**). There, they present and discuss about KM in general and its issues with the aerospace industry.

Our analysis focuses on the disciplinary rhetoric of KM's legitimacy among these KM practitioners. We draw on the discourse analysis approach to the social study of science done by Cooper & Bowers [7] on the field of HCI. Cooper & Bowers' study is part of a large body of *strong programme* [29] works that encompass actor-network theory [5] and the social construction of technology approach [20]. We do not claim that these studies form a single coherent system for analysis; rather, they have a similar mindset in realizing that new disciplines are not simply a by-product of social "facts" but the *work* of individuals who seek to legitimize and ingrain their discipline into the mainstream scientific thought. The strong programme studies how 'true' and 'false' scientific knowledge is created and maintained without deeming either more worthy of analysis than the other.

Alluding to Michel Foucault, Cooper & Bowers state that "*a discourse actively maps out a terrain of possible and valid statements, sets the boundaries of that terrain and constitutes the legitimate objects of study within it.*" Legitimate objects are constructed through

[1]All names in this paper are pseudonyms.

discourse, not visa-versa. In our study, we examine the legitimizing occurring in two spaces: the corporation and the community.

Unlike Cooper & Bowers's general study of HCI, we do not focus on knowledge management in general. Instead, we are focusing on a particular group of KM practitioners, their companies (and the aerospace industry), their technological artifacts and the quarterly forum at which they gather. Moreover, the participants in our study are primarily practitioners of KM, rather than theorists or luminaries in the field. The interplay between these different actors, we claim, assist in further strengthening the case for KM and its legitimacy as a standalone discipline. Several rhetorical properties make this an interesting case study: 1) KM addresses problems inherent in the aerospace industry, 2) the aerospace culture can be oppressive for KM and 3) the KM Exchange serves less as a center of learning but as a hub for legitimizing. We believe this microcosm of KM practitioners can also elucidate the current state of KM in the corporate world. Our analytical approach traces the discourse of KM first within the informants' respective organizations and then outward to the KM Exchange.

2 The Aerospace Industry

The aerospace industry is unique because it produces technically complex systems ranging from aircrafts, space vehicles, guided missiles, propulsion units as well as parts to support national defense, civil transportation and space exploration. Primary customers are the U.S. Department of Defense (DoD), the National Aeronautics and Space Administration (NASA) and airlines.

Moreover, such technology must follow rigid standards regulated by the government agencies to ensure safety and security. Unlike traditional goods or services, the aerospace industry is constantly being overseen by the government to prevent breaches of security, especially to foreign agencies. The International Traffic in Arms Regulations (ITAR) [1] are a set of U.S. government regulations that control the export and import of defense-related articles and services. The increased globalization and consolidation of companies has created further hurdles [15]. For example, the end of the 1990s has seen an increase in European defense collaborations.

Due to such a specialized market, the aerospace industry is dominated by a select number of large companies. Sixty-three percent of the jobs in aerospace manufacturing are in large companies that employ one thousand or more workers [3]. Building technologically sophisticated products, the industry requires a diverse and highly skilled work force, such as scientists, engineers, production workers, managers and administrators.

Currently, there is a major workforce crisis in the aerospace industry. The industry has lost nearly 500,000 jobs during the 1990's due to layoffs stemming from a reduced defense budget after the Cold War. Statistics from various sources indicate that the aerospace workforce is aging [2]. The 2006 statement by the President and CEO of the Aerospace Industries Association states [15] that the average age of the American aerospace manufacturing employee is 51, the average age for engineers is 54 and 27 percent of workers will become eligible for retirement by 2008.

3 Field Site and Methods

The Midwest KM Exchange is a forum for KM practitioners in the aerospace industry. Their official website states that it is a place where "*leaders in knowledge management in industry (with a focus on aerospace) and academia come together to share, collaborate, and discuss.*" We attended 7 meetings, each of which lasted about half a work day (on average each meeting was 4.5 hours). According to the website membership list, there are 85 members. In practice, average attendance was 35 people. While primarily consisting of aerospace industry employees, other invitees included people from universities and power companies. The locale of the meetings was rotated among the participants' organizations. The format of the meetings has roughly stabilized into the following sequence: 1) networking, 2) presentations about KM, 3) lunch plus networking and 4) splitting up into small (roughly 5-10 people) break-out discussion groups on chosen KM topics.

Our findings are grounded in data from two primary sources over a two year period: participant observations of the quarterly KM Exchange meetings and one-on-one interviews with its members. A large corpus was also gathered from materials such as slides and handouts that were distributed during meetings as well as the content management website for the KM Exchange. Because the participant list was readily available, we selected people to conduct semi-structured interviews. The so-called "focal" members were first contacted; these were the leaders of KM in their respective companies (many of whom were the progenitors and planners for the KM Exchange). From there, interviews were followed through with people we deemed to be more in the periphery. Interviews were with employees from four different aerospace organizations, two universities and one power company. Out of our 13 aerospace interviewees, ten were members of an official KM department, and three were interested in KM without an official KM affiliation. The other interviewees were two from academia and one from a power company. In total, 16 people were interviewed. Interviews lasted from 45 to 90 minutes.

Taking a grounded theory approach [24], we coded our data set with Atlas.ti (software for qualitative data analysis) to facilitate the formation of research findings and themes. These codings were informed by a strong-programme approach to discourse analysis. From hereon, we abbreviate KM practitioners, people who identify with KM techniques and processes, as **KMPs**. All verbatim quotes from informants and meetings are italicized.

4 Efficient Knowledge

We now discuss KMPs in the context of their organizations. The discourse of KMPs reveal that KM is seen as a *prescriptive process for inefficient usage of knowledge in corporations*. KMPs see their own discipline as a way to reduce redundant knowledge and to save potentially lost knowledge. Efficient knowledge use leads to saving both money and time, benefiting the corporation in its goals.

KMPs assert their *membership* in the field of KM through their fluency in KM terminology. To clarify, membership here is not a label of belonging to a group, but rather actions that announce one as conversant and competent in the field [8]. Throughout interviews, knowledge is objectified and viewed as an entity that *needs* to be managed—managed properly. Moreover, knowledge, when compared to other "datum" (e.g., information) is a much more complex, soft item: there is both "tacit" and "explicit" knowledge. Not only do KM experts need to be diligent knowledge purveyors, but aware of the human and organizational barriers to KM implementation. Thusly, the rhetoric is that KMPs are a special group of people that can comprehend all these facets of knowledge and its management. KMPs regard these skills absent in other disciplines.

We first start with the problematization [5] rhetoric espoused by KMPs in the aerospace industry. These problems are constructed to make the case that KM in an organization is necessary and ought to be embedded into the organization's normative practices. By defining the interests of relevant actors as consistent with their own, KMPs establish themselves as indispensable to the organization.

4.1 Lost and Redundant Knowledge

The first track of rhetoric is of knowledge lost. Crucial to much of the discourse of KMPs is the objectification of knowledge. Knowledge is discussed as if it were a tangible object. KM provides possible ways of "*capturing somebody's tacit knowledge and making it explicit and putting it in somebody else's brain.*" Knowledge is something transferable, salvageable from one person to another, much like data is transferable from one machine to another.

As stated by KMPs, there is a fear that knowledge will be "*lost*" once someone retires. Somebody needs to *capture* that knowledge: "*We're at a point where the . . . majority of the engineering employees in the company are of . . . a retirement age and we sought the need to try and capture the knowledge before it's gone out the door.*" Once someone leaves the company, it is potentially losing all the knowledge in that person's head. For the KMPs, this is a huge waste of resources, and the practitioner seeks to remedy that by somehow salvaging that expertise. The KMP must find a way to recover the investment that the company has worked hard to create.

The nature of the aerospace industry's hiring practices has made KM even more crucial (see Section 2). KMPs are well aware of the historical context of this: "*Many engineers are baby boomers. We did not hire engineers in [the] 90s. Now we are hiring.*" Thus, there is a real urgency for KMPs now because the threat of retirement is looming near. All our interviewees placed the retiring workforce as a major motivator for KM.

However, as KMPs are quick to point out, this problem is not easily rectified. The extremely specialized nature of jobs in the aerospace industry leads to a high degree of emphasis on the *expert* nature of aerospace work. By the time employees leave, they are viewed as experts in their field. This tacit knowledge comes in two forms here: technical and organizational knowledge. One informant describes the unique jobs at her company: "*So now I need to go out and hire a new guy for Howard's position, and Howard's our exobiology major on Martian terrain. The guy understands, you know, how to detect life on . . . Mars. Like there aren't a lot of people doing that—there is three, OK?*" Another describes the organizational experience gained through the long years of work: "*I know all the right people. I know all the right contacts, . . . [the] corporate history, right? How do I capture that?*"

Knowledge from retirees is asserted as complex and difficult to "*capture,*" necessitating KM solutions. *Knowledge is a representation or encapsulation of an employee.* Aerospace engineers are hard to replace and thusly the knowledge itself similarly so. In part, KMPs are legitimized because their job provides the necessary expertise to deal with the complex and rare nature of knowledge in the aerospace industry.

A second track of rhetoric involves the effortless flow of knowledge through an organization. KMPs see the *redundant* recreation of knowledge in different parts of an organization as ineffective. Economically, knowledge should be reused. A common complaint among KMPs is that knowledge is difficult to find. KM allows knowledge to be easily retrievable and thusly reusable.

The discourse of KMPs is that companies are doomed to repeat the same things over and over without KM: "*It's very important and there is an acknowledgment within the company that we've already answered the same questions five or six or ten times.*" KMPs legitimize KM by noting that the corporation can save "*millions of dollars*" if knowledge is captured properly. KMPs see knowledge recreation as a plague: "*People keep solving the same problems over and over again, looking up the same solutions.*" Untapped knowledge is prevalent: "*90% of the problems have already been solved somewhere.*"

KM solves this problem by helping people find knowledge quicker: "*People . . . they waste so much time when they're doing research and trying to find knowledge and information that they need, and if we can . . . help them do that research more effectively, then it saves them time and they can accomplish more of their work.*"

5 Rhetorics of Progress

"Rhetorics of progress" [7] 1) couch KM tools as profoundly new but nevertheless rooted in real, past practices and disciplines and 2) justify KMPs themselves as uniquely suited to deploy such tools. Both provide solutions to the aforementioned "KM problems."

5.1 Progress as KM Tools and Practices

The rhetorical function of tools and practices is not simply that these are useful solutions, but rather that only *KM-specific* methodologies can tackle these particular, thorny problems.

We now briefly describe some of the popular tools discussed in our interviews. ASKME (askme.com) is a software system that intelligently forwards user queries to located experts. Answers are captured and ranked on their quality. QUINDI (quindi.com) is an audio and video tool that captures the content of meetings and interviews as searchable and sharable multimedia files. It is used to capture staff meetings in conference rooms and to interview retiring engineers *in situ* at the shop floor. LIVELINK (opentext.com) is a content management system for digital documents, Internet resources, multimedia and print materials. GOLDFIRE INNOVATOR (inventionmachine.com) is a search engine that captures and leverages technical knowledge into a semantically indexed knowledge base. These tools represent the major categories of technological tools utilized by KMPs in aerospace companies. Expert locators, rich media capture tools, content management software and search engines are the cornerstones of a KMP's technological toolkit.

As opposed to more traditional technologies such as databases and shared drives, KMPs see their tools as a progression over outmoded technologies. One informant's view is that document management, regarded as an IT hold-over, requires a different *mindset*: "*Document management, where you collaborate on one document where everyone has their cards works very well. The wiki, I can edit yours; you can edit mine; that's a different mind set.*" Implicitly, KMPs are contending, "You need a KM mindset."

KMPs believe that KM tools are cutting-edge and constantly pushing boundaries. KMPs strive to differentiate their technology from traditional IT technologies such as search engines. For example, KM claims to find *relevant* knowledge quicker: "*We are constantly pushing search: we do traditional search . . . Google search . . . meta search. We're doing a new semantic search . . . because the biggest feedback . . . is . . . I can't find what I'm looking for . . . We're constantly striving to find better, better more useful ways to get a search out.*" KMPs see themselves as semi-researchers: "*We're cutting-[edge]; we're out there doing some things that may not be published.*" As visionaries of the company, KMPs are forging new tools that will *progress* an organization to the next step. They maintain they are not a service staff, doling out standard tools, but rather proactive researchers creating new ground.

When dealing with retirees, KMPs see the common aerospace practice of rehiring a retiree as a consultant unsatisfactory: "*The easy solution is I let the person retire and I bring them back to the job shop or something*." KMPs believe that retirees-turned-consultants incur a substantial cost that could've been saved if the knowledge had been captured. Moreover, these consultants will

eventually retire for good due to their age and represent an unstable workforce: "*I only bridged the problem and what my company is running against, we ... run out of people. People are dying on the job. That's a continuation of a problem.*" Asserted as a hackneyed solution, KMPs espouse the virtue of upgraded *non-technical* KM practices such as CoPs, mentor-teacher techniques, interviews and storytelling. Databases are deemed inadequate for knowledge: "*Whether you do that through storytelling or communities of practice or social software even, you've got to have that people driven focus. You can't just throw out a database and expect people to throw all their knowledge into it, it doesn't work that way.*"

5.2 Progress as KM Practitioners

One key constituent of the rhetorics of progress lies in the KMP's own qualifications: unlike IT experts, KMPs possess a preternatural understanding of technology adaptation in the context of human and organizational issues. One KM staff member delineated KMPs from IT workers, "*I would say that if I were manager of our group, and I was hiring, I would much rather have someone in with a social sciences background than someone with an IT background.*" Two people referred to KMPs as "*life long learners.*" One informant contrasted himself from other employees: "*We don't examine carefully enough how people actually interact ... I try; I try in everything I do to get to know the user.*" A KM advocate noted that other disciplines simply do not understand how to properly integrate technologies into the corporation: "*There are a lot of aspects of interactions and knowledge management that organizational development people and IT people do not address. They jump to the solution or jump to the pattern without thinking about how it will be adopted, if it will be accepted.*" When users face problems with tools, IT workers see "*the immediate solution to help was, 'It must be your machine.'*"

Another facet KMPs emphasize is the ability to effectively bridge people together. A project manager described how he became a hub for finding solutions in his previous position at the print services department: "*Our group had a propensity for solving problems. People would come ... for totally unrelated answers ... You know, we printed things for everybody in the workforce, whether they were a shop floor worker, mechanic, the janitorial folks, the fire department, the flight service people ... Even that outgoing approach ... I think it was more the invitation to ask us or to share with us their burden ... we'd, you know, just by accident connect them to the right answer.*" Another manager described how she had always been doing KM: "*I think I spent my life in retrospect ... in my career networking. I built a strong network ... I just think [I've] always been doing things naturally, trying to promote learning ... I was all about, 'Hey, I bet there's someone out there that's done this before. Let's go see if we can get some help.'*" Finally, a power plant manager noted that he does "*a lot of traffic management ... Talk to so and so.*" KMPs partially legitimize themselves by presenting themselves as progressive employees, different from the archetypal aerospace engineer.

KMPs also set themselves apart as being acutely aware of the demographic makeup of their aerospace companies. The generation gap currently caused by an influx of new hires and a growing number of retirees causes knowledge inefficiency: "*The kids coming in today, are up to speed with the latest and the greatest and maybe they don't to learn from the old guys. They want to reinvent the wheel or they want to do it faster, better or leaner.*" The personality of an aerospace employee is generalized as not conducive for sharing: "*Manufacturing managers, manufacturing engineers,*

tool designers: they tend to work in a pretty closed network." A KM engineer argues that by understanding human factors, they can try to target specific groups for successful adoption: "*Who are the players, who aren't the players, you are dealing with those human factors ... what do they buy into, what don't they buy into, who will they listen to, who won't they listen to ... we play those games ... those are all the human factors.*" The unpredictability of KM adopters, however, serves to also *pardon* the KMP from failure; there is always someone who is that "*hard nut*" to crack.

As a consequence, experimentation becomes a rhetorical strategy for KMPs. Software and techniques are not "deployed" but rather experimented and tested in an organization. Quality solutions take time: "*After that meeting, most people say, 'We look at new wikis.' Nobody knows how they'll fit in our culture ... it might work, we don't know. ... But, you know, we always take it very slowly, pilots, test it out ... QUINDI's one of our latest examples ... somebody thought it was a good idea, bring it in, try it out. Everyone's like, 'How's this going to be used? Who is going to listen to a meeting? That's not what it says in our culture.' ... So, you got to invest some time and money to see what happens. Some things work, sometimes some times they don't.*" Another informant noted that people do not prioritize KM usage: "*All that culture stuff. If it's added, there's something else they have to do besides daily work, it's very slowly adapted.*" KMPs reason that their solution is a combination of tools as well as cultural change. Tools without proper organizational thinking will become a gimmick: "*Then our second phase is to learn how to bring people, make people trust each other. If we throw the tools out there, it's sort of a fad for a little bit, then people go away from it.*"

Indeed, experimentation is necessary because KMPs hold that it is nearly impossible to predict whether a KM tool will culturally fit. Success is never guaranteed. Numerous stories were given by informants to support this assertion. For example, during a trial run of ASKME, KMPs faced unpredicted resistance from senior engineers. Experts who answered questions on the system were senior engineers whereas requesters for experts were junior engineers. As it turned out, senior engineers could not tolerate being rated by junior engineers: "*'We're not going to continue to participate because we've got, you know, Davis over here who's fresh out of school and couldn't ... engineer a way out of a paper bag and he's telling me that my answers [are] no good. But he doesn't even understand my answer.' ... And it wasn't any technical problems, you know, ASKME did a great job with the technical issues but it was all culture. So I couldn't have predicted it.*" Note here that the problem is not the tool appropriateness for the culture but rather visa-versa.

5.3 Formalization

Interestingly, KMPs qualify KM's novelty by framing it as simply a "*formalization*" of activities that are already occurring in the organization. Hence, KM is not really a pie in the sky but grounded in what people are already doing: "*People don't know what it is. I mean, people are doing KM everyday when, you know, they're ... talking with their friends or sharing their stories.*" Through codification, KMPs makes isolated successful practices pervasive.

The KMPs' rhetoric of formalization is also about consolidation. Going back to efficiency, KM allows one to bring disparate tools together: "*To share the knowledge that we have to capture, the knowledge that was available in the various areas and bring it together in a single location where it could be the one-stop source for whatever information that you needed.*" Indeed, without formalization one is again essentially losing not just knowledge but valuable *KM techniques themselves*: "*But to have a concrete way of giving*

means of sharing knowledge and of retaining knowledge is important ... Otherwise, I think we do a lot of it already, but not being formalize[d], and not being concrete or systematized, I think there is a danger of losing it."

Formalization serves as a *lead-in* to the argument that KM ought to be more fully embedded into the organization to prevent the loss of knowledge in the first place. That is, if one had taken more proactive steps using KM, then the crisis of lost/redundant knowledge would've been mitigated. This rhetorical strategy helpfully serves to further cement the KMPs' legitimacy in the organization. *KM evolves from a set of practices that are merely reactive to ones that are preventative.* The effect of this will reduce the inefficiency of knowledge usage throughout the company. For KMPs, this has the added benefit of spreading KM's sphere of influence and recognition throughout the company.

Many of our informants see it as a sign of progress when KM becomes part of the everyday processes in the company. A KM engineer told us there are no barriers to KM at his organization and gave us an illustration: "*We have a requirement that each department or each group have some sort of KM type initiative on their yearly goals ... from the management point of view, there is not any barriers.*" The KM lead here defines success: "*My ultimate goal is ... when you walk into our company, you cannot find the word KM because it's all embedded.*" KM has to be, according to one informant, "*part of their daily job.*" This legitimizing rhetoric stresses the importance that KM is not just a one-hit wonder but something that ought to permeate subtly throughout the organization. Indeed, a KMP said that ultimately "*there's the point where you have to support that program and get them doing it without you. So, then you can walk away and help someone else. That would be the ultimate job. Work yourself out of a job.*"

6   The Practitioner's Struggle

Having described how KMPs in the aerospace industry contend that KM is necessary and progressive, we next turn to the perceived barriers KMPs face when implementing their solutions. A consistent motif of our informants is that they are faced with an up-hill struggle to establish KM in their organizations. While on the surface this may simply help others sympathize with KM's failures or lack of expedient results, it is more of an assertion that KM is difficult and misunderstood.

6.1   Aerospace as Mintzberg's Adhocracy

Mintzberg's [17] frame for organizations identifies five basic components: an operating core, strategic apex, middle line, technostructure and support staff. The operating core consists of all the employees who produce the basic products and services of the organization, while the support staff produces indirect services to the rest of the organization.

According to Mintzberg, an *adhocracy* is a particular configuration of these five parts. In an adhocracy, the lines drawn between different parts are blurred. Located at various sites in the organization, teams are decentralized and often cross organizationally outlined boundaries. An adhocracy relies on a matrix structure and fuses experts drawn from different specialties into project teams.

The aerospace industry is an adhocracy. While engineers and scientists are grouped into functional units for house keeping purposes, they are deployed in market based teams called *programs*. Programs are formed for the customer and are where "real" work (projects) is done. Members of an adhocracy often feel an uncertainty about their future because it is difficult to predict when the next project will come from when the current project ends. Unlike the Apollo Era in which projects would last for decades, current projects are relatively short; as a result, the end of a project cycle has engineers (with help from their functional manager) exploring what their next project might be. Hence, there is an expectation to perform well in programs to gain a reputation that will enable one to move smoothly to the next program. Aerospace engineers have less time to spend for work not directly related to their projects, and middle managers are required to produce immediate results due to the short life span of their programs.

KM teams are uniquely situated in their organization. Unlike engineering departments, the size of KM teams is small (numbering from 4 to 7 members) and are not situated organizationally under a hierarchy of line managers. Moreover, for each company, KM falls under different divisions (e.g., IT, Operations and Integration, or Information Office which was under an Engineering division). Each leader of these KM teams and even junior KM staff reports directly to a chief engineer or vice president. A KM staff member described her unique position in the company: "*And plus we're so high level ... When I started I was already talking to the vice president of the company. That's weird. He's the one signing off on my documents and stuff like that. Some people will never see who the vice president of the company is <laughs>. So just the fact that ... I'm walking on the executive floor like everyday.*" KM departments are unlike other departments because they lack the layer of managers with whom other department communications go through.

6.1.1   Company Support

These characteristics of the aerospace industry pose barriers when KMPs seek funding for their projects and tools deployment. With the exception of one company, KM budgets are funded by direct budgets from engineering programs although some indirect budgets are available for them. Since the middle managers maintain a stranglehold over resources, the KM practitioners must make a case for the value of KM in order to receive funding. Indeed, support from middle management is seen as a pivotal barrier for KMPs: "*But you would have a hard time getting leadership, middle managers to see the value. So it would have to be applied very situationally. It is a very controlled industry. 'What am I getting for this? I am going to provide you space, what are you giving to me?'*"

Employees are less likely to adopt KM if they see that their middle managers do not similarly adopt KM: "*Deployment, it's the middle managers ... there was a case where we had internal survey, and we found that although employees wanted to use these tools and their managers are telling them these are good things, go use, and yet these middle managers weren't doing them themselves. So, employees are looking at their managers, 'My boss is telling me to do this, but then my boss is not doing [it], so why should I, right?'*"

6.1.2   Diffusion of KM

Due to KM's unique and ancillary position in the company, KMPs must use creative methods to promote their discipline. The lack of staff members prevents KM from reaching its full potential: "*It's almost like we're afraid to sell ourselves because if we do we can't meet the volume. We can't meet the demand.*"

Just as religions spread through its charismatic leader(s) and his or her followers, KMPs seek to teach others the value of KM and depend on those evangelists of KM to spread the so-called gospel of knowledge. As one leader put it, "*It's a lot of effort convincing these folks to change their normal way of doing things to a new way. But, we constantly promote and that's the only way.*" KMPs see part of their job as marketing themselves to educate people about

how KM can assist them. One practitioner described this as being in "*selling mode*." A project manager, Derek, explained that he had "*disciples*": "*If you think you can hire 4 or 5 people to make quote knowledge management, then we've missed the boat. Knowledge management … has to [have] dedicated people who believe, who are going to go back into their organizations and pound the drum as thought they were being paid by knowledge management. So those people consider themselves disciples and, yeah, I've got at least two that say, 'I'm Derek's disciple.' … which humbles me but <laughs>.*" A senior technical specialist terms these "*evangelists*": "*Once a person gets some coaching … then they will use the system and they will become more enthusiastic about its benefits. And they actually become evangelists and then tell to other people about it and it can spread out.*" KMPs view an organization as a cultural setting in which people must be influenced through social networks. This method helps to compensate for KM's small staff.

6.1.3   Silos

Since aerospace organizations are adhocracies, KMPs face challenges when molding their environment into one that affirms their rhetoric of efficient knowledge. KMPs see themselves as *shaping* the culture of the aerospace industry from one that is naturally secretive and highly competitive (internally and externally) to one that fosters sharing. One manager called sharing the "*fundamental concept*" of KM. For KMPs, the "*big challenge is trying to change the culture … it's a learning organization and people think that's happening, but it's not happening.*" It's not just sharing, but creating an "*environment where they can … ask questions.*" KMPs lament that "*they do not realize if we all share we actually become a stronger company. And have more business.*" *Silos* are hostile ground for the KMPs' doctrine of sharing.

The silo problem describes the autonomous nature of aerospace departments: "*Sectors for the most part tend to be pretty isolated from one another … and there's not as much collaboration between sectors as there should be.*" KMPs see silos as a root cause for the failure of people to adopt KM: "*More often than not you follow the command control, 'I'm in the silo. I haven't got time for communities … stories. I got to solve the problem.' *" Others note that knowledge hoarding has been trained on users because of the organizational structure at aerospace companies: "*So sometimes we fall prey to this same behavior because we are in an organization that manages everything by an org chart, by a box. You have an area where you sit. You have a workspace. You have a box and work charts. You have a hierarchy.*" In an environment where technical expertise is king, knowledge is power: "*People do not want to share because they fear it will make them less valuable to the company.*"

The KMP intimately understands that the secretive nature of the aerospace business exacerbates these silos: "*Especially in aerospace and in classified aerospace … people have been taught not to share and I think people's nature these days is much more selfish and to get people to realize that by sharing, they're actually helping the enterprise. It used to be that hoarding was rewarding … if they kept this knowledge in their head, they'd be indispensable.*" Indeed, as one KMP stated, having segregated programs in the aerospace industry hampers KM: "*So how can one program learn from another? That's security reasons though, that's why I'm restricted in what I'm doing. That kind of stuff just needs to get in the way sometimes.*" Consequently, the implementation of practices that encourage sharing is thwarted: "*We couldn't share with other business areas, and in many cases we couldn't share with other sectors.*"

While security of the aerospace industry is one impediment to sharing, internal competition is also an issue. In other words, because each program supports an external customer, programs must insure that they don't unwittingly reveal their customer's secrets to other programs, even though they all work for the same corporation: "*We may have one sector that's working on one program, or government project where they are keen with one of our competitors, and there may be in another sector that's teamed with another competitor and they're both competing on the same program … There's no, you know, sharing. In other words, our company is not getting information from, you know, the competitor that is teaming him in one program that would benefit, you know, another team.*"

KM solutions address these problems by modifying the corporate culture. Again, we see here that KMPs are architects or molders of the organization. CoPs are one way to overcome the silo problem by bridging normally disparate groups together:"*Creating what we call a CoP, but in the program setting we need to promote a culture where these engineers do not work themselves alone. We need to create a culture where they need to work with others and share those info. So, we are matrix organization, so we ask our … functional organizations to create those discipline CoPs.*"

6.2   Return on Investment

A key barrier espoused by KMPs is that knowledge is complex. This serves to assert that the benefits of KM are subtle and not immediately obvious. The following interview excerpt is representative of the viewpoint that KM's value is not easily discernible:

From the legacy business management perspective, they want you to show them. They want to see dollars. They want to see, show me how that guy sharing with that girl is going to save this company money. And … that's very difficult to capture. Especially when the people aren't even sure how they should track that. So what we're doing today is gathering the appropriate metrics … so that it becomes part of the culture and people understand if I give this guy two minutes of answers on the phone, it's going to save him two hours down the road because I've already found a way to do the process that he's doing faster, better, cheaper and then there is a return on investment and it's substantial.

Indeed, much of the rhetoric of KMPs is a reasoning against the prevailing company culture of "*buy-in*," "*return on investment*", or "*bottom line [thinking]*" that is pushed by middle managers. For KMPs, the barrier is that their methods, having both human and organizational aspects, do not fit neatly into the middle manager's frame of mind. Therefore, the KMP is faced with a battle to demonstrate to others that KM will benefit programs: "*So rather than focusing on creating results, you spend your energy on convincing people …* " KMPs argue that metrics are wholly inadequate in capturing what KM does. What KM does is intangible but felt. Indeed, for the more advanced KM tools that KMPs promote, measuring is impossible: *"When my people come out to the community and say I am getting value out of this community. We all work better. There is no way to measure."*

KMPs seek managers who are sympathetic and understand their plight. A knowledge engineer noted that his group does provide numeric metrics for KM tools but noted that "*advanced*" managers understand that that is not what KM is about: "*We provide metrics for different tools, you know, input versus output. But that's not what sells things … And many times some of the more advanced managers don't ask for that. [They] just knows it's the right thing to do.*" There is a us versus them mentality in that some people do not get KM, being part of the "legacy" mindset: "*I have advocates throughout my organization but my upper level management [asks,] 'What have you guys done today? I don't know what you've done.' *"

In fact, one of the best ways to convey the value of KM is by using KM itself. Whether it is by "*one good story per quarter*"

or "*anecdotes*," these techniques more adequately show the intangible benefits of KM techniques. One informant related how stories illustrate value: "*What that value really is, not just a number. It becomes—you become emotionally attached, you become logically attached.*" Simply giving numbers is what a KMP called "*cold and unemotional.*" In some sense, KM becomes an ideal way to express the return on investment (ROI) on KM because that ROI *is* knowledge in its complex form. This useful rhetoric device allows the KMP to not only convince others of KM's worth, but to show that only KM can adequately say whether KM is useful! As one KMP phrased it, "*We practice what we protest.*"

However, KMPs do seek other disciplines to further ground their own discipline as legitimate. For example, Total Quality Management (TQM) is commonly mentioned in the same breath as KM: "*We've tried to look more into the metrics and we work closely now with the enterprise excellence group ... and their job is the lean and six sigma and process improvement there. We've blended nicely with them.*" By incorporating other fields, KMPs give added weight to techniques as well as a perceived impartiality when evaluating themselves.

The aerospace industry is an engineer dominated culture with people that are accustomed to utilizing hard facts to determine the feasibility and progress of a project. KM is in direct contrast to that: "*[KM tools] are not as solid as if I was working like, you know, for a spacecraft program.*" One KM staff member noted the "*fluffy, intangible*" quality of CoP value. Hence we emphasize the rhetoric that ROI is deemed wholly inadequate for evaluating KM's value.

7   The KM Exchange CoP

We now shift our analysis out towards the Midwest KM Exchange. The titles of the presentations at the seven meetings were:

1. Gull Corp.'s KM Governance Model; Falcon Corp.'s CoP; Information Architecture: Taxonomy, Program Data Life-cycles, Search
2. What a well-rounded KM professional needs to know (academic)
3. The Ageing Workforce Problem For Power Companies: Software Solutions (power company); Experiences Related to KM Software (academic)
4. Air Force Knowledge Now Communities
5. Wikis for Tacit Knowledge; Integrated & Semantically Driven Root-Cause Analysis
6. Capturing & Managing Knowledge at Nightingale Corp.; Being Proactive in KM: Lessons Learned (power company)
7. Collaboration 2.0: Lessons for the Enterprise; Learning to Collaborate about Collaborative Learning: Building a Distance Master's Program (academic)

Unless otherwise indicated, all presentations were by aerospace industry members. The break-out discussions sections fell into the following categories we derived: document management, KM software tools, storytelling, CoP, metrics, cultural issues, KM specifics in other industries, aging workforce and the KM Exchange itself. As evinced by these topics, the rhetoric in these meetings parallels much of discussion in the preceding section regarding members' experiences with KM in their respective organizations. For example, the topics are germane to defining what skills a KMP should have, the objectification of knowledge, KM-specific tools and organizational shaping. The KM Exchange provides fertile ground for KMPs to display their fluency in the KM discourse. Indeed, some of the debates we observed showed hallmarks of discipline formation: trying to discern between "sharing" versus "knowledge sharing," "capture" versus "reuse" (one member explained,"*reuse*

is natural-immediate value, capture is for reuse and is expensive") and "data" versus "knowledge" (one termed it, "*knowledge is what I do with [data]*"). We will defer from further elaborating on these rhetorical strategies since they resemble those in Section 4–6.

Instead, we expand our notion of legitimacy to the KM Exchange. We argue that the KM Exchange is less about peer-to-peer learning and more about legitimization and discipline construction. By providing an "official" forum for KM discussion, they are in fact legitimizing their discipline; the very *existence* of a community for KMPs asserts that KM is a valid and worthwhile subject to discuss. Indeed one informant remarked that "*if we go ... and say, 'We are involved in the KM Exchange,' [management will say,] 'Oh, that sounds authoritative. That's good stuff.'*"

7.1   Affirmation and Support

For most members, the KM Exchange is in fact a place to affirm and support their own belief that KM is legitimate. One way this is achieved is by comparing other KM practices with their own. Almost functioning as a support group, the KM Exchange allows practitioners to "share the pain" of making people understand what KM is about: "*They're having the same challenges I'm having, or [the] same successes I'm having. So ... for validation.*" One professor attending the meetings noted that observations were of the "*wow, we're not the only ones with this problem*" type. Continuing, he conjectured that "*the biggest benefit for practitioners ... at these meetings is highlighting some of the problems that exist in their company.*" Those in an uphill battle to assert KM can feel empowered by realizing that there are others who value and get KM: "*I can feel like I have a greater number of peers that are actually interested in what I'm doing and come back to my own organization and almost feel superior but feel ... empower[ed].*"

Indeed, the KM Exchange is not simply about sharing KM techniques and tools, but the hardships of others. The oft-quoted expression, "preaching to the choir" seems appropriate here. In this excerpt from a KM Exchange meeting (paraphrased for readability), we see a mostly focal cohort come up to the front and report back on a recent conference focusing on one large aerospace company, LAS (F indicates focal member, O is other KMP or unknown):
F1: We discussed capturing "lessons learned." LAS is poor in using it.
O1: Any best practices?
O2: They are finally realizing the value of KM ...
O2: LAS is learning. In 10 years, they will be learning organization. We need help ... LAS admits they are not yet a learning organization ...
F1: How are they moving forward?
F2: They videotaped the last day.
O3: They cannot recapture old stuff.
O2: They are interviewing people ...
O4: What can this community do to help LAS?
F1: Partnership ...
O5: How was knowledge [at the LAS conference captured]?
O6: <in disbelief> They only video taped the speakers! Not the discussion. [Knowledge is lost.]
O7: They will learn. <paternally>
O8: Put importance on KM ... these are important things! ...
O9: We're the ones that have the knowledge [to help LAS].

We had initially expected the KM Exchange to foster dynamic and frequent interactions and connections. However, we found that seven of the informants had little or no interactions with others once a meeting concluded. What little interactions one had was through single-shot emails (e.g., clarifications and pointers). Informants noted that networking with the KM Exchange members was

not a top priority: "*I don't have time to be out there building relationships.*"

Indeed, the lack of sharing might be attributed to the rhetorical function that the very utilization of KM techniques symbolizes that the corporation is competitive (IT can likewise symbolize a corporation's progressiveness and competence [11]). Due to security concerns, one informant approached his interactions at the KM Exchange as a game: "*Yep, it's a game: I tell you this much and that's all you're going to get to hear. And then somebody else will release a little more and you know from what you hear, you can infer what other people are doing. If you have a good understanding of KM concept/process technology, you can basically figure out what's going on.*" To be sure, KMPs are cognizant that *others* are fluent in the language of KM; this makes it that much easy to inadvertently reveal KM "secrets." What makes KMPs valuable in part to their respective organization are the KM practices themselves. Losing that, KMPs argue, would hurt the company: "*There's a lack of sharing, yeah, because a lot of stuff we're doing is pretty proprietary, and if you share it, we lose our competitive advantage.*" Hence, by learning to share carefully without "*giving away the store,*" KMPs are actually gaining snippets of information that help legitimize their practice in their own organizations: "*Reporting to our directors, here's what I know that the other companies are doing, here's how we compare, here's what we need to do. It's motivational, it lends validation to what we do.*" In other words, "other people are doing KM, so should we." At the KM Exchange, KMPs are not only masters of the KM discourse, but also masters of the aerospace discourse—one of competitiveness: "*KM implemented correctly is a strategic advantage to us.*"

On the other hand, for the focal members, sharing KM practices and techniques is perhaps more easily accomplished due to an established sense of trust. This focal member explained how he interacted with the other three focal members: "*So I can give him partial answers and he'll understand what I am saying right? And I know he's not going to to use it in anyway that's not going to be in our best interest ... I have to be respectful to the fact that to certain extents Jane and Sam and Katherine are in competition with each other.*" This trust might not be fully formed with peripheral (non-focal) members or newbies.

Informants proposed that one way to foster sharing is to invite obviously non-competitive industries to the KM Exchange: "*If you collaborate with a company ... that makes greeting cards ... there's no competitive friction and I believe that you can share practices with companies that are non-competitive a lot easier.*" This brings us to the issue of expanding the boundaries of the KM Exchange.

7.2 Boundaries and Stagnation

During the first three meetings in 2005 and 2006, the members of the KM Exchange fervently debated who should be included in the community. As the community was relatively new, the membership boundaries were a concern. At these nascent meetings, participants had asked about inviting students (some potentially international) or KMPs from other industries. In turn, people cautioned about security issues involving the aerospace industry. After a short debate, the long-term members voiced their opinion that the community should remain only within the aerospace industry, ending the debate. One "old-timer" said, "*Our identity is 'aerospace' KM. Better to focus on 'aerospace.'*" All the focal members we interviewed seemed content with the boundaries of the community: "*I'd like to keep it an aerospace focus.*" Even if the boundaries were extended, one focal member wanted to instead create a separate forum while keeping the aerospace focused community: "*One meeting will be aerospace and ... maybe insurance will have its own forum.*"

Our interviews, however, revealed that the peripheral members had different ideas about whether the KM Exchange should expand. Two of the newer members did feel satisfied with the KM Exchange, but noted that having more members would bring in "*fresh ideas and new perspectives.*" Six of our more experienced KM Exchange informants felt that bringing people from other industries would improve the KM Exchange. The industries mentioned were medical, automobile, pharmaceutical and construction.

This desire to expand the boundaries of the KM Exchange is indicative of the sense that the KM Exchange is not a center for learning but rather a center for legitimizing and reaffirming KM. Largely shaped by the focal members, the KM Exchange has become a pulpit of sorts for KM. However, for those who have just started attending the KM Exchange, their goal is different—to learn about KM and to themselves become experts in it. One new member remarked, "*Sometimes, the meetings are dominated by strong characters.*" Another newbie mentioned, "*I worry that we're going to hear from the same people over and over again.*" One project manager quipped that he was disappointed with the latest meeting's break-out session about QUINDI: "*I try to sit on the session where I know something about it to see if I could learn something from somebody else ... [Instead,] they learned something from me. I was hoping to get something from other people, like what are you doing with QUINDI? What haven't I thought of?*"

Thus, the KM Exchange is stagnating because its primary purpose of rhetorical discourse does not equally serve a learning purpose. One KM staff member explained why she didn't attend recent meetings: "*Because a lot of them are really repetitive. Like it was good in the beginning ... I was just absorbing it. That was good for the first maybe three or four and after awhile people just started talking about the same things over and over again. And then ... so I was kind of losing interest <laughs> because I'm not learning anything new at these things.*"

This sense of stagnation in a community reveals a conflict between those who seek a true CoP for KM to those who seek a forum for legitimizing and reaffirming KM. Therefore the actors of the KM exchange are split in their desire to expand the community.

7.3 Enrolment of Academia

Callon [5] defines enrolment as a process by which actors accept the roles that have been negotiated and defined for them. By involving academia, KMPs succeeds in diverting the perception that KM is a light-weight, novelty discipline. Instead, by basing itself in the authoritative academic institution, KM becomes a credible discipline: "*There's that validation, that reputation, that connection with academia who are studying.*" Indeed, at one meeting, a speaker noted discipline and academia in the same breath: "*I feel that KM is moving towards a discipline ... There are cultural changes. I think it's great that universities are getting involved.*" Universities are valid assessors of KM because of their status as outside observers: "*They can be more objective ... they sit outside of the commercial arena and they're more forward thinking because they ... want to do all the research ... totally different than what people who are out to profit <laughs>.*"

The pronounced presence of professors and students in the KM Exchange in addition to the establishment of a master's program in KM at a local college, Midwest Regional College (MRC), speaks to the success of the KMPs in their enrolment of academia. By constructing an academic program, KMPs are patching up a glaring hole in their legitimacy. Indeed, all our informants learned KM through informal methods such as mentoring from other KMPs, online articles, attending KM conferences and attending staff meetings. While these methods seem to have no doubt been adequate to

allow the current KMPs to attain their current knowledge of KM, a rhetoric of *formalization* helps to legitimize KM for potential future practitioners. While we mentioned the personality attributes KMPs believe they possessed to allow them to become true practitioners, we briefly mention here that many of the KMPs came from varied backgrounds: rocket scientist, materials engineer, thermal engineer, computer science, women's studies and anthropology, publications department manager, chemical engineer, enterprise services, GUI designer and print services manager. One KMP complained that "*because a lot of people who work in IT tend to have learned [KM] on a job and I don't think that's the best way . . . you miss so much without having a formal education.*"

By the time of our observations, MRC and a focal member of the KM Exchange were in the midsts of forming a master's program in KM. Together, they formed both an on-campus program that started in Spring 2006 and a distance learning program that started in Fall 2007. This focal member reminisced, "*Three years ago, we went looking for more learning and finally convinced MRC to create a KM program. I'm very proud to create it and there are six employees taking the courses.*" Note the language here: "*finally convinced.*" Curiously, another focal member mentioned to us that she tried forming a KM program at another local university but failed due to the rigorous requirements to form a master's program in that school. Having a corporation so intimately tied to academia *symbolizes* in some sense that that corporation is ahead on KM, having forged ahead with disciplinary formation.

How was this enrolment achieved? The KM master's degree at MRC is run by the extended learning department. A human factors engineer for that department contrasted the funding situation with other traditional departments: "*We don't get funding from the state or from the federal government like the other colleges on campus . . . we're basically a business within an academic environment . . . if we don't make a profit . . . we have to close our doors just like any other business.*" KM is seen as attractive not only because it has overlap with some of the human factors faculty, but because it is *marketable*: "*We're always striving to jump out ahead . . . they saw this as an opportunity to do something that's cutting edge and definitely has a new market.*" While we do not mean to imply that profit is only the motivator for creating programs, certainly, the viability of the extended learning department depends on a program being "in the black": "*We have to find programs that basically can survive . . . no one's getting rich here.*" As such, the KM master's program represents a symbiotic relationship: KMPs gain legitimacy and the academics gain a growing program with students.

At a KM Exchange meeting held at MRC, a presentation was given about the master's program. In the presentation, the professor presenting noted that "*we offer a comprehensive dossier of KM as opposed to a specialty concentration. KM is an add-on with other programs like MBA or IT, the time has come for a truly in-depth topic.*" MRC therefore fulfills its role admirably in helping to strengthen the legitimacy of KM's discipline.

In return, KMPs work within the company to assure that their employees can register for the master's program. "*We have an employee scholar program that pays for our education and if the course work for the . . . program is directly applicable to your work, you don't have to pay taxes on the tuition the company provides. And my boss has decided that every course in the entire program is directly applicable to my work.*" Indeed, in some meetings we attended a large percentage of the participants were students of the master's distance program. Interestingly, the focal who helped formed the master's program became part of the faculty. At the same time, becoming a faculty members also further raises the focal's credentials and credibility, thereby assisting him in promoting

KM. The KMPs therefore work actively to help MRC help them to reinforce KM's disciplinary status.

8 Professional Community as a Hub for Legitimizing

Lave & Wenger's [14] communities of practice (CoP) and Van Maanen and Barley's [16] occupational communities are two prominent frameworks for studying work-related communities. The CoP model provides an alternative to the traditional teacher-student model and instead emphasizes that learning occurs in the periphery, through peers. By way of legitimate peripheral participation, new members are able to move towards the core of a community. Wenger's work has proved immensely popular, being applied to communities ranging from health insurance claim processors [26] to virtual teams [23].

Occupational communities are social groups with very strong occupational ties. Van Maanen & Barley identified five intrinsic characteristics of occupational communities: 1) members share a "consciousness of kind;" 2) members take each other as reference points; 3) members have in common certain unusual emotional demands of their work; 4) member's self images and social identities are enhanced by their work; 5) members extend their social relations into private life. This framework has been applied to numerous communities such as those of Xerox copier technicians [19] and free/open source software developers [10].

Undoubtedly, the KM Exchange shares some common attributes with occupational communities such as a sense of belonging, shared discourse and even perhaps emotional stress over their work. However, the occupational community's focal point is the work itself, rather than its promotion. This is not the case with the KM Exchange. While KM is certainly the topic of the community, the forum *is* very much concerned with KM's promotion through legitimacy. Members do not necessarily join to gain additional KM skills but to instead learn how others are doing it and to find affirmation in what they're doing. Hence, the KM Exchange does not fit snugly into the occupational community framework.

One might also conjecture that the KM Exchange is akin to the guilds of yore, thus drawing parallels to Lave & Wenger's own inspiration for CoP. However, many members in the KM Exchange are not learning about KM, leading to stagnation. The learning that does occur is how KMPs talk and legitimize KM; members quickly learn the lingo (how to "talk the talk") simply by lurking without any sustained interaction among other members. Additionally, there is a tension between those who seek to primarily learn to those who seek to primarily promote. Thus far, the focal members have remained the locus of power and shape the boundaries of the forum towards legitimization. Hence, CoPs do not adequately characterize the KM Exchange. The KM Exchange is not a place for learning about KM; it's a place for affirming, validating and legitimizing KM.

At times, the KM Exchange reminded us of other social groups. It resembled a church with some members preaching a "gospel" of knowledge to other KMPs. Just as religions assert that their own beliefs are necessary to living a fulfilling life, KMPs assert that their own techniques and practices are necessary for a successful company. At other times, the KM Exchange reminded us of support groups that allow people to share their pain and experiences.

Contrary to its informal appearance, the KM Exchange is a complex, heterogeneous community, consisting of focal members and peripheral members with diverse backgrounds and competing motivations. The community in its current state has evolved into a hub

of legitimization. Thus, to truly understand the KM Exchange, one must devise an alternative framework of communities. Rather than viewing communities as either intense mediums to focus on work (occupational community) or a locus of learning (CoP), one must consider that communities can sometimes serve other motives.

The KM Exchange thus primarily represents a physical space for constructing legitimate objects of study within set boundaries. The community reflects the motivations of KMPs to further make KM a necessary and indispensable field for the aerospace industry. The strategies such as the enrolment of academia help to further increase the credibility of the forum and allow it to be an active force for constructing worthy discipline.

9 Conclusion

The construction of KM's legitimacy by KMPs in the aerospace industry has been analyzed through its discourse. Analysis often begins and ends at the site, but we follow Latour's [13] call to "follow the actors themselves" in and out of a professional community. By examining the rhetorical devices utilized by KMPs inside their companies, we can better understand how it is that the KM Exchange also became a site for legitimizing the discipline of KM. We now briefly recap the story told thus far.

By stressing the importance of efficient knowledge for today's modern corporation, KMPs are able to construct and support problems that legitimize the need for KM solutions. KMPs note that lost knowledge must be saved and that extant knowledge must be used effectively. KM tools and practices are then presented as progressive tools up to the task of managing the complex facets of knowledge. Yet, KMPs are quick to point out that their discipline is not a fad, but rather simply a formalization of successful KM practices that people actually do everyday. Finally, KMPs stress the importance of their discipline by noting that they are uniquely qualified to face a wide range of barriers inherent in human and organizational behavior.

The KM Exchange allows KMPs to affirm and support each other in their legitimizing endeavors. Ostensibly a forum for peer-to-peer learning, the KM Exchange in actuality serves to bolster and complement the KMP's discourse at his or her company. By affirming and supporting KM's discipline, as well as formalizing its discourse, the community helps to validate and encourage KMPs to carry the gospel of knowledge management back home.

We follow Cooper & Bowers' closing by noting that while deconstruction is often seen as a way to criticize a discipline, it has not been our intent. Rather, we hope our data elucidates what the state of KM is and how KMPs perceive themselves and their discipline. Our analysis also sheds light into the complexities of professional communities. As a hub for legitimization, the KM Exchange serves to both strengthen and weaken its standing among its own members and its own discipline.

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