

Member Spotlight:

## **Knowledge Management at MITRE: Purpose and Passion**

by Renselear (Ren) Resch

The MITRE Corporation is a non-profit organization that manages three federally funded research and development centers. MITRE works with the government, applying systems engineering and advanced technology to issues of critical national importance. To fulfill this mission, MITRE's staff must maintain a high level of expertise in knowledge-rich areas such as systems engineering, integration, development and acquisition, and intelligence analysis.

### **KM at MITRE and the MITRE Information Infrastructure**

Our primary knowledge management tool is our award-winning MITRE Information Infrastructure, or MII. This corporate intranet and portal was born out of several needs, including: (1) our corporate goal of sharing up-to-date information and publications among in-house experts and authors; (2) our objective to combine access to corporate administrative, financial, and technical resources into a single portal for our staff; and (3) the requirement to build corporate knowledge and expertise to support undertakings for our sponsors. Developed in the 1990s, the MII received unequivocal senior management support and became the material expression of MITRE's desire to "bring the Corporation to bear" on our government sponsors' tasks, that is, to use all our technical assets and insights for the benefit of every sponsor.

In 1999, MITRE was awarded a CIO Enterprise Value Award for the MII. A 2000 study showed an ROI of \$62.1 million in reduced operating costs, improved staff productivity, and cost avoidance from our \$7.2 million investment. In addition to the more traditional corporate intranet applications involving HR and financial functions, the MII provides an employee directory, atlas, and project reference guide, an expertise locator, and sites for publishing and sharing documents. It also offers virtual, collaborative workspaces and tools, including listservs, Share Point-based Community Share sites, and lessons-learned databases for project teams and communities of practice. All these are tied together with an enterprise-wide full text search engine provided by Google.

The MITRE culture, while technical in nature, emphasizes person-to-person knowledge exchange and spontaneous collaboration. Walkways between buildings, with strategically placed coffee and sandwich kiosks, encourage collaboration and knowledge exchange across MITRE divisions. Knowledge exchange is further encouraged by a corporate-supported, yet loosely governed, system of communities of practice. Essentially any group within MITRE can start a community of practice listserv or Community Share site and can hold in-person technical exchange meetings (TEMs) as long as they relate to MITRE's mission. TEMs may include vendor demonstrations and sponsor participation. MITRE provides facilities and audiovisual support for these meetings, which range in size from a handful of specialists to more formal meetings with audiences of hundreds of staff, sponsors, and external experts. TEMs are an important way for people to meet face-to-face to exchange ideas. MITRE further promotes knowledge sharing through its Knowledge Management Awards program, which rewards and recognizes staff who contribute to knowledge-sharing activities either by creating, sharing, leveraging, or managing knowledge, or by enabling others to do so.

Technology support for collaboration includes 160 video teleconferencing suites worldwide, available to all staff members at headquarters and field offices. MITRE also provides an audio conferencing bridge with data collaboration for remote employees and sponsors to hold meetings or participate in seminars and other knowledge sharing events. We have fully recovered the cost of these facilities through reduced travel and, more importantly, have experienced increased productivity, collaboration, and knowledge sharing through the use of these tools.

### **Shaping the MII to People's Knowledge Needs**

The MII was launched in May of 1995, with the corporate phone book as its cornerstone, bringing administrative, financial, and technical information on an individual together on a single webpage. MITRE's Transfer Folders grew out of our need to locate publications from authors throughout the corporation and to exchange information across different platforms. Originally, we created Transfer Folders and Publish Folders, with the idea that Transfer Folders would be used for day-to-day documents that staff needed to share, while Publish Folders would contain formal contributions by MITRE authors. Publish Folders proved unwieldy and unpopular; the conversion to HTML was awkward and time-delayed, and the "publish" label gave the impression that only polished, approved documents should go into

the folder. Transfer Folders were much more widely used, since there were no metadata or other formal requirements for sharing information and no sense that contributing material was equivalent to publication. Over time, as more and more corporate knowledge went into Transfer Folders, Publish Folders were retired. Transfer Folders, indexed by the enterprise search engine, are now a primary source of shared expertise.

In building an expertise finder, MITRE went through several iterations before fielding our current solution. We debated how to validate “expert” status and the criteria that should be used to determine expertise. These talks resulted in an expertise finder based on real-time data mining on the MII of information about the staff. This approach avoids problems of inaccurate and dated information related to self-reporting. When searching for an expert on the topic of service-oriented architecture, for example, the Expertise Finder locates people who have contributed most to the topic in listservs, communities of practice, publications, and other documents on the MII. From the results list, a user can view the expert’s phone book page, which provides information on the expert’s title, duties, tenure at MITRE, project history, resume, and contact information.

### **A Day in the Life of KM at MITRE**

This is how KM works in real life. I arrive at my office in McLean, Virginia at 8 a.m. and boot up my laptop. I read through emails, some from my customer, some from my internal MITRE project team, and some from listservs I have joined. I notice there is a Technical Exchange Meeting being held tomorrow on collaboration, so I add that to my calendar.

At 9 a.m., I head to a team meeting in one of the conference rooms on my floor equipped with video teleconferencing equipment. When I arrive, my Bedford, Massachusetts, teammates are already present on-screen. In McLean, we view our Bedford team members on one screen and our team site in Community Share on another. Together, the entire team reviews action items in our team site and updates them in real-time. Our monthly report is due to the sponsor this week, so I will have to check out the monthly report from the team site later today to update my section. The report, once finalized, will be moved to the sponsor-accessible area of the site by our project manager.

In our meeting, we discuss the need to learn more about portal technologies to assist our sponsor with an acquisition. We have recently heard about another sponsor who undertook a

similar effort. After the meeting, I run a search in the Expertise Finder and come across several possibilities in the first page of results. I use the Phone Book, linked to the Expertise Finder, to call one of the experts, who appears to have published a great deal on this topic. I leave her a voice message to call me back. In the meantime, I click on the link to her Transfer Folder in the Expertise Finder and find a treasure trove of product evaluations she has conducted on various portal technologies. I send my team an email to point them to these findings and add the link to our Community Share site.

To find out more about the portal acquisition conducted by another sponsor, I send an email to a couple of MITRE's listservs – one targeted at those interested in portal technologies, and another at those interested in this specific sponsor – to see if I can find anyone at MITRE who participated in this activity. Sure enough, in a couple of hours I receive a response, and I schedule a meeting with my team and two MITRE colleagues who worked with that sponsor.

At noon, I head over to my sponsor site for a meeting. We hold a brainstorming session on the next steps for the project. I take notes on my laptop and email the notes to the entire team, as well as the sponsors, before the meeting is over, with the help of my wireless card.

At home that evening, I realize that I have not yet recorded my hours for today. Already logged onto the Internet on my home computer, I surf to the eMII, log in, and access the time reporting system to submit my hours. Tomorrow the process will start all over again with the TEM on collaboration.

## **Conclusion**

MITRE's KM story is a success not because we got everything right the first time but because our people are driven by purpose and passion. Playing a positive role in this success is our staff's high level of technical expertise (two thirds of MITRE staff hold advanced degrees) and their dedication, loyalty, and longevity (the average MITRE tenure is 9.48 years). To give our staff the support they deserve, we have used our own in-house expertise to transform knowledge sharing from abstract concept to daily practice.

We knew from the start that KM wasn't just about technology. When the MII was first conceived, our MITRE knowledge groups recognized the need to use both technical and non-

technical solutions and to adapt systems to staff members' work requirements. We learned that to be successful, people's KM needs must drive IT solutions and not the other way around.

Our government sponsors ask us to undertake large, complex, and, sometimes, unique projects. No single person has the skills to meet these challenges. Our work creates an intrinsic need to collaborate and to build teams with multiple skill sets. MITRE's mission, by charter, law, and our own culture, is to serve the public interest: it's all about "doing the right thing" for the public and for the country. In Summary, our mission demanded that we adopt KM as a corporate practice.

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