

September 2002

Find The Experts

How can organizations avoid making the same mistakes, solving the same problems and missing the same opportunities over and over again? By finding internal experts and leveraging their knowledge and experience. Search tools may help, but expertise management systems do a more comprehensive, yet selective job of finding the experts. These systems create and share expert profiles, and users can submit specific questions and get them answered by the pros.

By Michael P. Voelker

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How can a large organization avoid making the same mistakes and missing the same opportunities over and over again? Expert management software finds internal experts and leverages their knowledge and experience.

If you had a dollar for every time a CEO said, "Our staff is our most valuable asset," you'd be rich. Yet while systems and documents hold the millions of bits, bytes and keystrokes that make up the sum total of a firm's explicit information, employees offer knowledge that is both explicit and tacit.

Tacit knowledge includes the rationales behind decisions being made, the nuances and shading of business information and the ideas and creativity that are crucial to problem solving. In short, tacit knowledge constitutes expertise.

"Intellectual capital is quickly becoming a major source of competitive advantage," says Carl Frappaolo, executive vice president of the Boston-based consulting firm Delphi Group. "Tacit knowledge plays a pivotal role in distinguishing companies and poising them for success."

Every business manages the expertise of its staff to some extent. Early in the life of a company, finding an expert can be as easy as asking the colleague on the other side of the cubicle wall, but that is not a workable option for growing and large companies.

"We grew about five-fold in the past three years, so what you previously could find by walking down the hall or making a phone call became more complex," says Fran Steele, CIO at Intec Engineering, a Houston-based engineering service. At press time, Intec was two months into the pilot stage of AskIntec, its installation of the AskMe Enterprise employee knowledge network system.

Initial approaches to systematically managing expertise have often been to catalog staff skills, usually via surveys, and retain that information in a searchable database. But that approach has its shortcomings. Even if a business gets a 100-percent response rate to the surveys, people simply don't update their profiles over time.

"You can't expect knowledge workers to take on the added burden of posting, tagging and putting their content into the right taxonomy and keeping track of what projects they've worked on," says Frappaolo. "That process has to become automated."

Companies can, however, encourage interaction with surveys. Defense technology contractor Northrop Grumman considers employees' individual skill profiles when assigning internal projects and handing out promotions. "If [an employee's] profile isn't up to date and their resume isn't up to date, they'll miss the opportunity for [assignment to] a new project," explains Dr. Scott Shaffar, knowledge management project manager of Northrop Grumman's Integrated Systems sector in El Segundo, CA. Profile data is kept in a SQL database accessible via a searchable "yellow pages" of expertise dubbed "Xref," which the sector developed in-house in 1997.

Enter Expertise Management

Because much tacit knowledge is contextual, employees often can't readily identify the depth of what they know. Mountains of explicit information at any particular business are a ready source of both content and context that can be mined. They're what Michael Loria, director of the advanced collaboration group at Lotus, Cambridge, MA, calls the "digital breadcrumbs" of business — documents, content management repositories, Web sites, e-mail systems and intranet threaded discussions. Expertise management systems apply taxonomy to this content, build a base of experts and allow users to locate and collaborate with them.

Several vendors offer expertise management platforms. Lotus offers K-station, an expertise management and collaboration portal that is now part of IBM's WebSphere platform. AskMe, based in Bellevue, WA, launched its people-to-people software on the Web before creating AskMe Enterprise. Tacit Knowledge Systems, Palo Alto, CA, offers an enterprise-scaled Expertise Services Platform and its KnowledgeMail e-mail and document discovery and search tool. Sunnyvale, CA Verity's K2 Enterprise mines documents and e-mails for "social networks of people seeking and providing answers to questions on particular topics." Organik software from Sopheon (formerly Orbital), Minneapolis, lets users create profiles, then captures e-mail

Resources

AskMe

www.askmecorp.com

IBM

www.ibm.com

Sopheon

www.sopheon.com

Tacit

www.tacit.com

Verity

www.verity.com

discussions in their areas of expertise.

The first step in the implementation of any expertise management system is mining information. But is it a problem if there are a variety of formats and distributed locations of content? Not at all, according to the system providers we surveyed.

"It's the age-old question of how do you get everyone to store content in the same format," says Loria. "You don't, but that's the secret of crawlers. They read content in its native format and normalize it."

Andrew Dunning, director of marketing at Tacit Knowledge Systems, stresses that, "One of the fundamental value propositions [of expertise management] is there's nothing you have to do once you set it up other than to point it at content. You don't need to manually develop a taxonomy, you don't have to evaluate what's important and there's no prebuilt dictionary of terms. The system looks at communications, documents and content, and pulls out nouns and noun phrases. It chooses topics most frequently used in your organization, even those that aren't in the dictionary, such as proprietary terms."

But if crawling technology is the foundation of expertise management, why not simply use a federated search engine to locate relevant documents so users could then contact related authors? This would, in effect, create a semi-automated version of poking your head over the cubicle wall.

"You're putting the burden on the knowledge seekers," Frappaolo says. "They get back a collective result and see that John Doe wrote a good article, but does that make him an expert? To determine that, they need to sift through other content and information."

The less burden placed on the knowledge seekers, the greater chance they'll be able to effectively and consistently locate expertise. This is exactly what expertise management systems are designed to do.

Search Tools Or Expertise Management

The main difference between federated searches and true expertise management is the concept of relative merit of content. At one level, merit incorporates the concept of volume: how many times a term occurs determines its ranking in a search. But, just as a good Web search engine discounts artificially inflated meta tags in an HTML document that lists a term 1,000 times, management systems should be able to make a qualitative distinction at a more granular level. In other words, there's a big difference between writing one document on a topic that's been viewed 100 times, and writing 100 documents on a topic that has never been viewed.

Merit can also involve timeliness. "We're not just counting how many times people have mentioned a topic," says Dunning of Tacit, "we're evaluating whether they've mentioned those topics in the past three days versus three months ago, or if they mention the product repeatedly over time, versus a burst of activity." An expertise management system should allow users to determine which type of activity is most important to them in a given query.

Another difference between simple search technology and expertise management is the level of oversight that an expertise management system should be able to provide. First, there may be sensitive information or potential experts who do not want to be inundated with questions, regardless of their expertise. Some expertise management software can provide a list of frequently used concepts and phrases and allow users to change, delete, make phrases private or add to that list.

Because accurate results are necessary to make expertise systems truly useful, some manual review is helpful. "The metadata on a document might be misleading because it might not be filled out correctly, or it might be inherited," says Udai Shekawat, CEO and co-founder of AskMe. "For instance, I might have been the original author, but [someone else] took the document and did the bulk of the work on it."

Expertise management systems can also combine automated taxonomy development with the traditional skill survey. This is the case with AskMe Enterprise, says Shekawat. "You can edit your profile to describe your expertise in detail or to volunteer additional information," he explains. "Additionally, when the system is live, based on your responses to people's questions, the system further refines its expert base."

Northrop Grumman is taking this combined automated and manual approach in its overall knowledge management strategy and is currently in the pilot stage of installing Tacit's KnowledgeMail in its Integrated Systems sector. KnowledgeMail automatically applies taxonomy to the e-mail employees send and stores the results in a segregated database. An internally developed portal on the sector's intranet allows employees to perform a federated search of both the Xref and Tacit databases and find people to contact.

Updating and Accessing The Expert Data

E-mails and many documents are easy to add to an expert database because they can be created and completed quickly. But what about larger projects, continually updated catalogs or other long-term content creation processes? Typically, expertise management systems digest information as soon as it's stored to the network. While that leaves some potential for capturing errors that are corrected in the final draft, Dunning says there can be value to keeping a running evaluation throughout the editing process. The idea is that the more content a system reviews, the better. The final version of a document doesn't necessarily capture everything a person knows about a topic — some material included in early drafts may have been edited out in the end.

To put questioners in touch with experts, expertise management systems typically provide different search capabilities, from topical "tree" searches to free-form and natural-language question boxes. Automatic routing features direct queries to likely experts. Many systems have the capability to interface with other user-facing systems such as e-mail, portals and CRM systems.

Expertise management systems should provide users several ways to collaborate. With AskMe, for example, users can submit questions via e-mail, a wireless device or the Web.

In the AskIntec project, employees can now enter a question via a field on the employee intranet or simply click a button in Outlook. Intec has already seen collaborative results that would otherwise have been difficult to achieve in an enterprise operating in time zones across the globe. In one case, an engineer in the Mediterranean logged on to AskIntec, reviewed questions that had been submitted by employees in Houston the evening before and answered them before those employees came to work the next day. In another case, an engineer in Egypt posted a question to AskIntec and received answers from two engineers in Buenos Aires.

"In both cases, the questioners received answers as fast as they possibly could have," says Steele, adding that AskIntec also refers knowledge seekers to codes, standards, specifications and other electronic content in addition to subject matter experts. "Knowledge sharing is strategically important to Intec. As consulting engineers, a significant part of our value to clients is our ability to quickly leverage our collective knowledge and direct it to specific problems."

Users of most expertise management systems can determine their level of involvement in the expert selection process. "You might decide you want to describe a problem and have it automatically routed to the most appropriate expert," Shekawat says. "On the other hand, you might have a complicated problem, and you might want to vet 10 experts by looking at their ratings and their previous answers."

Installation time for an expertise management systems is typically measured in weeks. It took six weeks to launch the AskMe pilot at Intec. But bear in mind that expertise management is not a static system.

"At installation, you've got a software platform, not an expertise management system," says Frappaolo. "The process never ends. The system should have a manager to determine how it should be manipulated and refined to encourage its usage and to eliminate obsolete content. It's an active repository."

Because most expertise management systems only point to content, rather than store a copy in a replicated database, system requirements are fairly light. For instance, a Tacit deployment for 1,000 people can reside on a dual Pentium server running the expert profile engine. And the impact on other systems should be negligible.

Nontechnical Issues

A business looking to implement an expertise management system should first determine whether it has the infrastructure, both technical and cultural (see the sidebar "[Content vs. Expertise Management](#)"), to support it. "Will your employees mind having their content hung on the clothesline? If they will, you have to get at why they'd be reluctant to share their work product, including e-mail," says Frappaolo, who adds that businesses should also recognize the potential additional burden put on experts. "If a business decides it would be great to have 'knowledge-knowers' available as resources, but then they track their productivity as well" it may discover it leads to unwillingness to share knowledge or even resentment, he says.

Also consider the effectiveness of knowledge sharing that already exists in the enterprise. "The

more geographically diverse the organization is, the more it should be looking at this type of technology," says Frappaolo. "The more it's focused in one building, the more likely there is an organic approach to this already."

Frappaolo adds that you have to consider the volume and value of tacit knowledge, which can't be captured explicitly.

AskMe reported an installation cost of between \$40,000 and \$200,000. Users should expect a large deployment (more than 10,000 users) to require a manager to work two days per week on the system.

Although specific costs weren't available for the installations we surveyed, benefits were reported. "One benefit for us that's come bubbling up is best practices," says Steele. "Within AskMe, there's the opportunity to identify something as a best practice, so rather than writing out a best practice abstract, you can capture an actual answer and take a minimal amount of time to turn that into a best practice."

"In a large engineering organization, where tons of content sits in an archive, the value proposition is enormous," says Dunning.

Shekawat agrees. "It's easy to deploy and the cost of management, because it's distributed ownership, allows you to have a fairly low total cost of ownership over time."

Northrop Grumman sees enterprisewide benefits to its use of expertise management. "Our vision is to tap into the talent of anyone within this organization," says Shaffar, who reports that the results of the Tacit pilot have been "fairly accurate." To that end, the hope is to eventually manage the expertise of all 100,000 employees across the corporation. "It's an incredible proposition, but with Xref and Tacit, we're rolling down the path toward that goal."

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Find The Experts -- Sidebar: Content vs. Expertise Management

Key differences between content management and expertise management

By Michael P. Voelker

A key difference between content management and expertise management is what each system helps you locate. The first puts you in touch with content; the second helps locate content creators.

The most effective expertise management relies on solid content management. "Expertise management systems use content management systems for input; they're not managing that input," says Carl Frappaolo, executive vice president of the Boston-based consultancy Delphi Group. "Without an underlying approach to document and content management, the expertise management system is going to place the burden on the experts to manage what they know, from being proactive in how they store information into the system, to updating their profiles, to making postings and tagging content. And the more burden you place on the providers, the less likely they are to use the system."

With a content management system in place, the capabilities of expertise management become more robust by virtue of managed relationships between content objects as well as the stored approval trails, collaboration touchpoints and versioning.

"Two underpinning technologies to overall expertise management are collaboration and content management," says Michael Loria at Lotus, Cambridge, MA.

Can you run an expertise management system without an automated foundation of content management? "If you have no strategy for document or content management, we can still deploy [an expertise management system]," says Loria. "You choose the content sources to crawl, build a taxonomy of information the organization knows about and start to draw topical relationships among that information. You can then find gaps, expertise and affinities, and actually drive people back to the content or individual creator."

"We've been seeing interest from companies that already have a content management system or corporate portal," says Andrew Dunning, director of marketing at Tacit, Palo Alto, CA. "They don't want to put in a lot of new applications this year; they want more value from their current ones."

Find The Experts -- Sidebar: Big Brother or No Big Deal?

Privacy and expertise management systems

By Michael P. Voelker

We all know the company e-mail system is for business, but let's be realistic. How can the people who send baby announcements, party invitations and forwarded jokes (you know who you are) keep themselves from being labeled as experts on such topics?

"People's first reaction is, 'Big Brother's reading my e-mail,' says Dr. Scott Shaffar, an expert management system user at Northrop Grumman's Integrated Systems sector (see [main story](#)). "But there's extensive privacy and encryption; probably more privacy than in Microsoft Exchange itself."

An expertise management system should allow users to determine what content should be excluded, even after that content is evaluated. Additionally, the excluded content itself shouldn't be replicated or stored by the system.

"We occasionally get a few users concerned about e-mail privacy, but we've had no issues with that in practice," says Andrew Dunning, director of marketing at Tacit, Palo Alto, CA. "Once we show users that they can choose not to have a message evaluated, and that even the e-mail system administrator doesn't have access to it, they get comfortable with it. We haven't had a system fail to be deployed because of privacy concerns."

Still, perhaps the best advice is that discretion is the best practice in all business content.