When we do something together over time, we create shared practices. We learn to do what needs to be done, we learn about each other, and we develop shared ways of doing things. We form communities of practice in which sharing is a natural part of belonging. Indeed, “knowing” implies social communities, because facts alone have no meaning outside a shared context.

Our software community of practice is such a familiar experience that many people may hardly notice it. Its identity derives from participation, and it is self-organized around important matters through dynamic renegotiation of what the profession is about and what needs doing and learning. The boundaries are defined by actual participation, not by affiliation or title. It follows the contours of common practice and is held together by knowledge rather than task. Interaction among practitioners continually refines and develops the elements of the practice. That which is an improvement is adopted into the body of knowledge. Failure to interact regularly with other members of the community will eventually result in estrangement from it. These realities are indicative of why the identity of our software community of practice is continuing to evolve.

Our software community of practice develops resources such as shared learning and practices. Organizations such as the Software Engineering Institute (SEI) and the Software Technology Support Center (STSC) facilitate the capture and transfer of knowledge critical to our software community practitioners. Through STSC-refereed articles, Crosstalk functions as one of our software community’s key conduits for transferring knowledge. Important online resources have also become part of many organizations’ virtual infrastructure, particularly the Web sites of the SEI, the Software Engineering Information Repository, the ST SC, the Embedded Computer Resources Support Improvement Program (ESIP), the Data and Analysis Center for Software, the Software Program Managers Network, and the Defense Acquisition Deskbook.

The annual Software Technology Conference and SEI Symposium and Software Engineering Process Group Conferences are forums that provide vital interaction opportunities for our software community because they provide the necessary facilities of belonging: alignment, engagement, and exploration. They provide time for reflection and the unstructured personal contact so vital in the exchange of information and the development of community resources. As valuable as the seminars are in each of these forums, I contend that in their absence, many people would continue to pay to attend the conferences for the networking opportunities alone. Perhaps, to extend and energize our community of practice, we should consider offering a new conference registration category called “networking only.”

An organization’s software community of practice is critical to its success. The community may exist informally within and across business units and projects and often across organizational boundaries. To gain the most leverage, it maintains links outside the organization to strengthen its knowledge base. Communities of practice are organizational assets because of the knowledge they steward at their core and through the learning they inspire at their boundaries. The learning potential of an organization resides in the interaction of cores and boundaries in “constellations” or clusters of different communities of practices.

I contend that the use of the Capability Maturity Model Integration (CMMI) product suite, being released this year, will have one of the more revolutionary impacts on organizational constellations of communities of practice because the CMMI addresses enterprise-wide, integrated process improvement that cuts across traditional disciplinary boundaries. What will transform an organization or community of practice is not what an individual knows or single function controls but what a group knows and causes to happen. Processes and practices that cross disciplines and functions provide the basis for group “passion” or motivation. Use of integrated knowledge within and among communities of practice should prove to be the most sustainable and profitable aspect of any organization.

Organizations cannot truly manage knowledge because it is tacit or internal to individuals; however, they can manage the environment necessary for the community of practice to flourish and share information that is a product of that knowledge. For organizations to successfully compete in an era of rapid change, they need to invest in connectivity more than information. Using the leveraging capabilities of the Internet and Intranets, organizations need to establish their own virtual knowledge management infrastructure that evolves see Community, page 10.
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Watts S. Humphrey is a fellow at the SEI at Carnegie Mellon University, which he joined in 1986. At the SEI, he established the Process Program, led initial development of the CMM, introduced the concepts of Software Process Assessment and Software Capability Evaluation, and most recently, the PSP and TSP. Prior to joining the SEI, he spent 27 years with IBM in various technical executive positions, including management of all IBM commercial software development and director of program quality and process. He has a master's degree in physics from the Illinois Institute of Technology and in business administration from the University of Chicago. He is the 1993 recipient of the American Institute of Aeronautics and Astronautics Software Engineering Award and an honorary doctorate in software engineering from Embry Riddle Aeronautical University in 1998. His most recent books include Managing Software Process (1989), A Discipline for Software Engineering (1995), Managing Technical People (1996), and Introduction to the Personal Software Process (1997).

People who appreciate the need for software knowledge management and who have the capacity to inspire or take the lead in providing the guidance and resources necessary to share information will continue to be invaluable. They can help any organization capitalize on opportunities by facilitating the enablers that are vital to our software community of practice.

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Notes

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