



CMMI Offers an Enterprise Focus for Technology Change Management

Lt. Col. Joe Jarzombek
ESIP Director



Technology change management represents the fusion of technology innovation and process management, and is a key practice of adaptive, higher maturity organizations. Managing changes in technologies and processes are among the foremost challenges for many organizations because process stability and continual improvement are difficult to balance. Technology change management is not an isolated activity; rather it is a process that touches many of the socio-technical activities in an organization. It includes business and work processes and technical systems. Models such as the Capability Maturity Model® (CMM®) provide a vital focus for technology change management. The integration of disciplines within a single model, the CMM Integration (CMMISM) offers a more encompassing focus to better support technology change management efforts for projects and enterprise-wide process improvement.

In his article, “Structured Approaches to Managing Change” (page 4), Mark Paulk offers three perspectives that may be of value in thinking about change management:

1. internally driven change [push] vs. externally driven change [pull]
2. change directed at products and services vs. those directed at design and production processes
3. incremental vs. revolutionary change

He notes that considering innovation management models can lead to significant changes in models, such as the CMM, that are widely influential in driving process improvement. Models also can influence strategic decision making by broadening and structuring executives' thinking. An objective view of the challenges that must be overcome in adopting a new technology or process can be materially aided by structuring the analysis around models.

Linda Levine, in her article “Integrating Knowledge and Processes in the Learning Organization” (page 17), writes that paying attention to how people learn enables more effective change management. Learning and technology change management reinforce one another. When people are asked to change how they work, such as in adopting changes in technology or process improvement, then they are asked to learn. To be successful, learning organizations require the integration of process management, knowledge management, and technology.

To better support technology change management, the CMMI integrates software and systems engineering processes that are critical to maturing organizational capabilities. CMMI serves as a more effective tool in helping to guide and assess integrated process improvement efforts. The next CMMI draft

will include integrated process and product development process areas. To achieve process improvement goals, higher maturity organizations will focus organizational improvement management on critical CMMI process areas composed of practices that are key to organizational transformation, such as organizational process focus, organizational process technology innovation (OPTI), and process innovation deployment (PID). These will help focus technology improvements and innovations that can measurably improve the organization's processes. OPTI and PID involve identifying, selecting, and evaluating new technologies, and systematically transitioning incremental and innovative improvements into use. Understanding that managerial decisions regarding innovation are dominated by information relative to business objectives, people initiating and fostering innovation should assure that decisions regarding the selection of technologies and processes to be improved are based on the organizational business objectives. This better assures that organizational management will support the allocation of resources needed for continuous process improvement.

I encourage everyone to download CMMI draft version 0.2, released in August for public review. Go to www.sei.cmu.edu/cmm/cmms/cmms.integration.html. Review the staged and continuous representation of the model to determine which might better suite your organization's needs. To better understand how the CMMI compares to the Software CMM, check the STSC-generated CMMI to SW-CMM 1.1 traceability matrix at STSC's Web site at www.stsc.hill.af.mil; see news.

The Software CMM has helped organizations focus process change management efforts. Now, with CMMI supporting the integration of process management, knowledge management, and technology evaluation, organizations have a model that can be used to better focus integrated process and product change management to support improvement objectives of the enterprise.

Organizations can begin an iterative approach toward integrated process improvement by using the CMMI in pilot assessments that will provide insight about the value of the CMMI regarding how an integrated model can enhance organizational improvement objectives. Pilot assessments can also help identify “levers” of change that are key to “selling” and focusing future improvement efforts.

Regardless of which model an organization might use, change agents should consider the complementary use of frameworks and tools that now exist to support organizations in pulling together process, knowledge management, and technology to support organizational learning. Two such examples are

The Capability Maturity Model and CMM are registered in the U.S. Patent and Trademark office to Carnegie Mellon University (CMU). CMMI is a service mark of CMU.

IDEALSM and IDEAL-based New Technology Rollout INTRo)¹. IDEAL (initiating, diagnosing, establishing, acting, and learning) is a model that provides a disciplined engineering approach for improvement, based upon the CMM, by focusing on managing the improvement program and establishing a foundation for a long-term improvement strategy. Designed to help organizations adopt and implement new technology, INTRo is a web-based process guide focused on making connections among business problems, value propositions, technology solutions, and their implementation. INTRo integrates the multiple dimensions of change and helps to fill skill gaps. This is significant to technology change management since many such efforts are complex and all-encompassing, requiring comprehensive knowledge and skills that are often not resident in a

single organization or team.

To be effective change agents within organizations, people must pull together process, knowledge management, and technology to support learning and successful change. CMMI, coupled with an appropriate framework or tool suite, can provide the key enabler for successful enterprise-wide technology change management efforts. ♦

1. IDEAL is a service mark of CMU; INTRo is a collaborative effort between the Software Engineering Institute (SEI) and Platinum/Computer Associates. Both IDEAL and INTRo are discussed in the January 2000 issue of *CrossTalk* in Linda Levine's article "Learning: The Engine for Technology Change Management." For more information see SEI's Web site.

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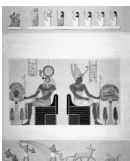
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On the cover: Throughout history, each culture has managed change in a different way. This month's theme depicts a culture that was known for its innovations, and illustrates the need to successfully integrate change.