HELPING ORGANIZATIONS SCALE AGILE ACROSS THE ENTERPRISE

by Kirk Botula

Whether you are seeking to adopt agile or are in the midst of a complete agile transformation, organizations like yours are increasingly seeking guidance from the Capability Maturity Model Integration (CMMI) to both strengthen and scale their implementation of agile approaches.

As an enterprise-wide performance improvement model that is the de facto standard model for improving quality and performance in the software industry, CMMI helps organizations reap the benefits of agile and scale its adoption across teams, divisions, and the global enterprise.

How CMMI Strengthens Agile

It's no secret that agile is well suited for software projects by encouraging improved team collaboration, transparency, and the rapid delivery of working software. However, its performance advantage often degrades as organizations attempt to scale agile beyond the team level and across the enterprise.

Most agile approaches are derived from a set of common values with high-level guidance for ceremonies, roles, timing, and artifacts. In contrast, CMMI provides a robust set of critical practices that can be used to strengthen agile methods and address behaviors not specifically defined by agile approaches.

CMMI defines the most important practices that organizations must demonstrate to build great products and services, and provides a comprehensive model that organizations can use to assess their capabilities against these practices.

CMMI does not define how to apply specific business processes. CMMI specifies what organizations must do to be successful, but not how. It provides flexibility for organizations to consider their own business environment and organizational context in determining appropriate ways to implement each practice. Most importantly, CMMI provides guidance for numerous behaviors, including those that enhance code quality, peer reviews, product integration, performance measurement, code reviews, large-scale estimation, quality management, and software version and revision control.

The CMMI model reflects best practices in organizational performance. CMMI is framework- and methodology-agnostic and is equally valuable for Scrum, Extreme Programming, V-model, Kanban, and waterfall environments. Organizations can implement business processes using their choice of methodologies or frameworks, including any agile approach. For high-performing organizations, CMMI also provides a set of practices for adopting statistical, data-driven analysis, along with the use of process performance baselines and models, which accelerates performance and dramatically improves the quality of software products.

In short, embracing CMMI will bring the resiliency and predictability required to reliably deploy agile across the enterprise.

The Benefits of Scaling the Agile Enterprise

A recent McKinsey study shows that incorporating agile above and across individual projects can be a formidable task. [1] Organizations that attempt to scale agile need significant structural changes and support. Defining measurable processes that apply to a broad range of behaviors helps technology leadership to scale agile across the enterprise. Agile organizations also adopt ways to increase discipline and improve consistency across projects, which help decrease go-to-market time, improve product quality, and better meet customer requirements.

Located in Bangalore, India, Minacs IT Services is comprised of 450 employees who provide leading banks with technology solutions and support. Internally, the group also supports over 20,000 employees in the business solutions and marketing optimization divisions. To meet current and future business requirements, the division was determined to reduce rework and ensure a faster time to market in their support of services.

Minacs IT Services realized that it needed a solution to help establish processes based on industry best practices for software development and service delivery—and integrate support functions, such as HR, training, and internal IT. The solution also had to integrate with an existing Scrum approach being used for product development projects. By applying CMMI with agile, Minacs IT Services was able to establish clear, defined, lightweight processes for service delivery and product development, enabling service-level agreement improvements and higher customer satisfaction. Specific measured achievements included a 7 percent quarter-over-quarter gross margin increase, 30 percent to 40 percent increase of sprint goal improvement, 30 percent increase in the number of features delivered in a sprint, and a 40 percent increase in on-time delivery.

In addition to these measureable benefits, the effort has transformed Minacs's internal culture from an organization of silos to an organization aligned with a single common vision. Minacs has since scaled its CMMI and agile integration across other Minacs offices, including the North America division and global internal IT functions.

Transferring Knowledge across the Enterprise

Poor knowledge transfer and lack of shared learning are major sources of organizational inefficiency and impediments to continuous improvement. Organizations must create and sustain an information-sharing and problem-solving culture across the enterprise by empowering teams to work through software, product, and management issues in a structured and methodical way. CMMI helps agile teams identify and share impediments early in the development cycle by making lessons learned and solutions available from previous team members within a collective knowledge base shared by the entire enterprise.

Honeywell Technical Solutions (HTS) is the development and engineering arm of Honeywell Inc. HTS delivers machine-critical products and offerings, so strong processes are required to deliver consistent, high-performance products.

To meet their ongoing business challenges, HTS sought to improve its problem-solving capability among its 7,000 engineers across multiple lines of business. Accomplishing this goal required standard methods of communicating, implementing, and transferring knowledge.

HTS identified several layered outcomes for this initiative. HTS wanted to define a simple, easily adopted problem-solving process. They needed to improve problem-solving accuracy and address root causes effectively and efficiently. Building on this, they wanted to improve systematic and layered problem-solving capabilities for each engineer, commensurate with their roles and

responsibilities, training and competency development plans, and mentoring plans. They also had the overall goal of reducing the time engineers spent solving problems.

To achieve these goals, HTS deployed CMMI for Development's Causal Analysis and Resolution (CAR) practices to help the organization bring continuous improvement and best practices to its processes.
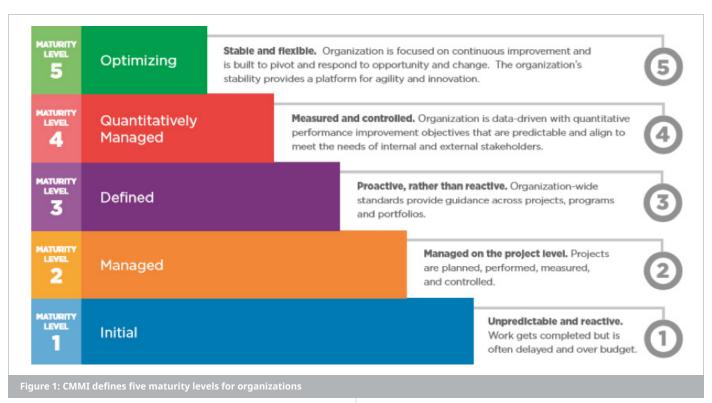
The consistency, repeatability, and transparency of the CMMI model helped HTS standardize practices, improve problem-solving abilities, share knowledge, and improve performance of engineering teams across the organization. The result was a 12 percent to 15 percent decrease in the occurrence of functional defects and 15 percent improvement in implementation of kaizen strategy over the past three to four years. This companywide program has resulted in a corporate culture that encourages collaborative problem solving and innovation, increasing knowledge sharing at each tier and shortening the learning curve for employees.

India, and Latin America are using CMMI to scale agile and export that capability into more geographically-distributed operations.

Where Does Your Organization Stand?

According to CMMI, there are five maturity levels that correspond to an organization's overall capabilities compared to CMMI-defined best practices. As shown in figure 1, a CMMI maturity level 1 organization is unpredictable and reactive. Projects are often delayed and over budget. A CMMI maturity level 5 organization is stable and flexible. The organization is focused on measurable and continuous improvement and is built to quickly pivot and respond to opportunity and change. The organization's stability provides a platform for agility and innovation.

The series of levels 1 through 5 encourages organizations to continually self-assess and improve their operations as they achieve higher maturity levels. Agile approaches alone are only sufficient for CMMI maturity level 2, and they begin to fall short as

Figure 1: CMMI defines five maturity levels for organizations

CMMI Adoption in Agile Organizations Is Increasing Worldwide

Organizations that adopt a capability improvement model like CMMI improve agile deployment by scaling agile adoption across the enterprise, strengthening agile performance, and improving their capabilities through organization-wide knowledge sharing.

Adoption of CMMI in organizations implementing agile is steadily increasing. In 2009, 30 percent of CMMI-adopting organizations reported using one or more agile approaches. In 2015, more than 70 percent of appraised organizations reported the same. Multinational companies with technology centers in China,

organizations assess practices across the enterprise in pursuit of CMMI maturity level 3.

Every agile software development organization should operate at a CMMI maturity level 3 or above to win in this highly competitive industry. To learn more about how CMMI drives agile performance, browse to http://cmmiinstitute.com/cmmi-and-agile. [BSM]

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