



## CollabNet Success Story: Agile CMMI

### LARGE INVESTMENT BANKING FIRM STAYS AGILE AND CMMI COMPLIANT USING COLLABNET®

*"CollabNet gives us vastly better control over what's happening during the development lifecycle, cutting down on support costs and risk and improving the quality of our releases."*

*--IT Director, Investment Banking Customer*

### ACHIEVING COMPLIANCE IN AN AGILE DEVELOPMENT ENVIRONMENT

The quest for financial rigor and corporate compliance has driven many companies to adopt Capability Maturity Model® Integration (CMMI) for software development. Developed by Carnegie Mellon University, CMMI defines a clear set of process goals, metrics and best practices for five ascending levels of process "maturity" and guides organizations on how to foster accountability and results. The focus of CMMI is on planning, documentation, auditability and traceability. According to the Wikipedia definition, "CMMI helps integrate traditionally separate organizational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes."<sup>1</sup>

A drawback of CMMI is that its structured approach to repeatable processes, and requirements for documentary evidence that processes are being followed, make many developers think it only supports a Waterfall type development lifecycle. In the classic Waterfall project, teams may spend months working through each phase of the development lifecycle. In some reported project disasters, 1-2 years passed as teams worked through the lifecycle, only to find out the entire project had to be scrapped in the end because the ultimate development work did not align with requirements that had evolved throughout the project lifecycle.

Agile is an approach that attempts to speed and streamline software development and make the phases of development flexible enough to handle changing requirements. It supports collaboration and short iterations to enable developers to make adjustments and update their plans mid-stream. According to the Agile Manifesto<sup>2</sup>, core values of an Agile environment include:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Agile meets many of the requirements of today's fast-paced development environments, and has proven successful in organizations that need to respond quickly to market demands. Unfortunately, Agile makes CMMI compliance difficult. Without thorough documentation, it's nearly impossible

### CHALLENGE

The IT department at a leading investment bank needed to build a software development / change management process that would enable CMMI compliance while accommodating existing Agile development practices used by various teams.

### SOLUTION

CollabNet's ALM platform helped the organization achieve CMMI Level 3 compliance and support diverse Agile development practices across the organization.

### RESULTS

Enhanced collaboration across geographically distributed developers and functional teams

Simplified CMMI Level 3 compliance with evidence of process implementation

Improved traceability of changes from requirements to code

Reduced support costs and lowered risk during the development lifecycle

Improved quality of software releases

to meet maturity Level 3 stipulations, such as defining common processes, incorporating specific practices and demonstrating that processes are consistently followed.

Facing tremendous pressure to deliver solutions quickly and meet rapidly changing priorities, investment banking institutions are reluctant to change processes and adopt new tools. However, for those who have been using Agile processes for software development, new requirements for meeting CMMI compliance necessitate standardized processes and documentation. The challenge for banking institutions is to deploy a process that supports key parts of Agile, produce documentary evidence that the process is consistently in use, and all the while shelter IT from unnecessary bureaucracy that can impede genuine progress.

### **LACK OF PROCESS CONSISTENCY POSES COMPLIANCE CHALLENGE FOR BANKING FIRM**

A large investment banking firm with locations in 35 countries recently wrestled with this challenge. The company was required by its parent company to reach CMMI Maturity Level 3. At the time this requirement was laid down, IT teams used various Agile processes for software development, but no single process was being used consistently across the organization.

The IT department set out to build a process that would support the existing and varied Agile practices, achieve CMMI Level 3 compliance and introduce a more standardized approach to software development across the organization. But this was no easy task.

*"There are numerous, complex global systems within investment banking firms," said the firm's IT director. "For example, a typical trading system can be used in Frankfurt, London, New York, Tokyo, Singapore & Zurich and connect to more than 50 independent systems. Stakeholders—each with their own objectives—can be separated by location, business line or functional unit."*

Furthermore, Banking is a highly controlled environment, and banks must maintain rigorous controls on software development and deployment to constrain operational risk and ensure compliance with Sarbanes-Oxley and Basel II requirements. IT must be very flexible and able to make rapid technical changes, because software defects can have a high and immediate financial impact.

### **CMMI AND AGILE: CAN THEY CO-EXIST?**

Among the many improvements to the development lifecycle, CMMI best practices enable organizations to link management and engineering activities to business objectives, expand visibility into the product lifecycle, and implement robust high-maturity practices that better comply with relevant ISO standards. However, developers prefer the Agile approach, because it enables shorter, more flexible iterations during development for rapid prototyping and faster development cycles.

*"In the Agile environment, changes are more immediate, and the whole feedback loop happens more quickly," said the bank's IT director. "When you first write a product's requirements, no one has a 100% accurate vision of the final product. Agile allows the*

*vision to develop during the development lifecycle, so that you come closer and closer to what you really need as time goes on."*

Agile was being used inconsistently across the banking firm's IT organization, but the need for standardization prompted IT management to investigate existing tools that could accommodate the new requirements while still allowing developers to work within existing Agile environments.

The firm employed Agile and CMMI consultants to look for a viable solution. Widespread consultations and workshops were held that involved team members across the organization. An initial process was developed that captured the core elements of Agile and fitted in with general working practices of the firm; however, it relied largely on the completion of template word documents and excel spreadsheets that were unintuitive and difficult to use.

"To users, the new process seemed more like a bureaucratic exercise than a positive catalyst for change," he said. "We needed a tool that would simplify and speed up process adoption."

The firm had purchased the CollabNet Application Lifecycle Management (ALM) platform three years prior, but was only using a portion of the platform for source control. CollabNet Subversion® is an enterprise-ready distribution of Subversion that includes certified binaries, platform-specific installers and certified plug-ins for other tools. CollabNet Subversion is just one part of CollabNet's ALM platform. "Many teams within the firm had migrated to CollabNet Subversion, but went no further," said the IT director. Teams across the organization still used a large variety of tools for storing requirements, and numerous disparate processes varied in quality. A need for more consistency was apparent, so IT management began to investigate what else CollabNet could offer.

#### **COLLABNET: FROM SOURCE CONTROL TOOL TO AGENT OF CHANGE**

Fortunately, the team realized that the same CollabNet ALM platform they had already been using to manage their Subversion source code repositories also provided the extended functionality needed to comply with CMMI. "We could capture requirements in the Project Tracker, link them to code changes, and deploy a complete solution to give us better control over what is released," he said.

The IT director tried the CollabNet solution with his team, which was responsible for developing front office trading software. The team began using Subversion for source control, Project Tracker for requirements management and bug tracking, and other components of CollabNet's ALM platform, such as discussion forums and collaboration tools. The ALM platform allowed them to integrate, govern, and manage the phases of application development, including planning, definition, design, development, testing, deployment and administration. Once the CollabNet solution proved successful in the initial pilots, plans were made to roll out the solution across the organization as a standard process.

"CollabNet tools enabled us to develop a standard agile process template that met all the requirements of CMMI," he said. "Plus, it provided the benefits of Agile without the need to be face-to-face, which helps our international teams collaborate more efficiently."

#### **DISSOLVING GEOGRAPHIC BOUNDARIES**

CollabNet offers the industry's only open and integrated ALM platform built specifically for distributed teams, empowering teams to manage all phases of the software development lifecycle, from requirements through release.

#### **ACCOMMODATING BOTH AGILE AND CMMI**

Different companies take different paths to improving software development. Online magazine *Methods and Tools* surveyed 512 companies in February 2008 and found that 48% were using Agile methods. This figure shows an increase from just 37% of the 232 companies surveyed in 2005. In another survey conducted in January 2009, the firm found that of 392 companies surveyed, 46% were using CMMI.

Clearly, accommodating both approaches is critical.

#### **COMPANIES USING AGILE**

	2005	2008
Deployed (all new projects)	8%	17%
Partial Deployment (some projects)	12%	14%
Partial implementation (some practices)	17%	17%
Pilot Projects	4%	8%
Investigating	14%	14%
Analyzed and rejected	3%	4%
Not aware	26%	13%
Not using	16%	13%

#### **COMPANIES USING CMMI**

	2009
Trying to reach Level 2	12%
CMMI Level 2, 3 or 4	20%
CMMI Level 5	14%
Investigating	8%
Analyzed and rejected	4%
Not aware	13%
Not using	29%

Source: *Methods and Tools* (<http://www.methodsandtools.com>)

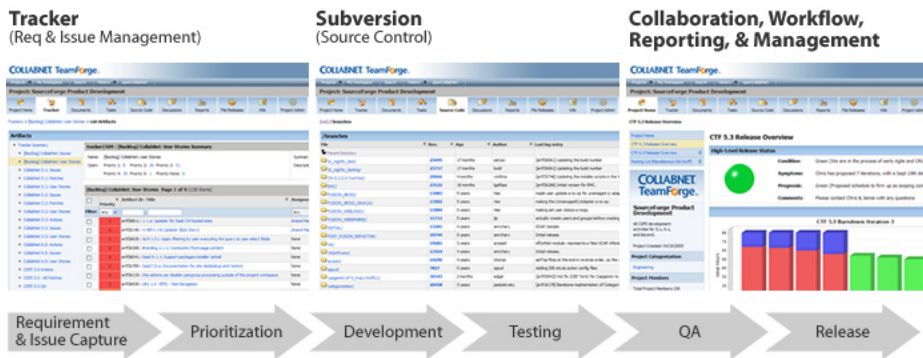
The platform is technology, tool and process independent and designed to enable a culture of collaboration among teams. CollabNet is accessible through all popular desktop tools, and is available through a Software-as-a-Service (SaaS) model or on-premise installation.

*“Development teams are globally dispersed, but collaboration is essential to creating quality products,” said the director. “With CollabNet, developers get the flexibility of an Agile environment over a Web-based interface that transcends geographical limitations, as well as the ability to stay CMMI compliant without the heavy hand of bureaucracy. It’s the best of both worlds.”*

CollabNet has numerous features conducive to an efficient, collaborative development environment. For example, CollabNet provides the ability to link requirements captured in Project Tracker to code changes as well as communication tools to alert and or gain approval from other team members, which allows greater control over what changes are actually released into production. Integration of source control and requirements capture also allows a high degree of traceability for Sarbanes-Oxley (SOX) compliance. CollabNet’s reporting capabilities can be used for business prioritization and status reports.

For the investment bank, one of the most useful features of CollabNet is the “artifact” definition in Project Tracker. Bug, requirement and risk artifacts can be created with the required attributes for the software development environment. Artifacts in CollabNet are the data types used to model key constituents of a process (see figure 1). For example, a list of high-level business requirements is used for planning and prioritization. CollabNet enables the user to perform a Project Tracker query that displays all artifacts in progress or due to be prioritized, where the type is equal to the high-level requirement. Parent-child relationships between artifacts enable users to better manage high-level requirements and sub-requirements.

## COLLABNET APPLICATION LIFECYCLE MANAGEMENT PLATFORM



**Single platform allows integrated process from requirement capture to release**

Once the basic data structures, relationships, reports and layout of a project are defined, an ALM template can be created and used for other projects. The template contains the project structure and content, artifact types with embedded workflow, and Project Tracker queries.

*"CollabNet's ALM templates made rollout a quick, repeatable and flexible process," said the firm's IT director. "Processes are consistent across the organization and in compliance with CMMI."*

## COLLABNET SAVES RESOURCES, REDUCES RISK

According to the firm's IT director, the CollabNet Agile template in use has been approved by CMMI consultants as meeting requirements for CMMI Level 3. The template and process were rolled out to 72 teams in London and Frankfurt in just six months. "Our whole development community now speaks a common language of high-level requirements, RAID (risks, assumptions, issues and dependencies), stories and tasks, and they are using a common platform and process," he said. CollabNet ALM simplifies the process of demonstrating consistent implementation of standardized processes to satisfy CMMI requirements. Actions are automatically logged into the system, eliminating the need for users to fill out forms or document changes to prove CMMI compliance.

Possibly the most important benefit of the CollabNet ALM solution is that it enables teams throughout the organization to collaborate efficiently on development projects. The solution provides an efficient way to track roles and levels of access and how changes to requirements and code are made throughout the development lifecycle. Centralizing source control, performance management and ALM functionality and making it accessible from a single, user-friendly interface saves time and overhead.

*"If we had not implemented CollabNet templates, we would have incurred enormous overhead and spent roughly 25-30% of our development time producing documentation," said the IT director. "CollabNet gives us vastly better control over what's happening during the development lifecycle, cutting down on support costs and risk and improving the quality of our releases. There is financial benefit, whatever you're trying to achieve."*

## ABOUT COLLABNET

CollabNet is the leader in [application lifecycle management \(ALM\)](#) platforms for distributed software development teams. CollabNet TeamForge is the industry's most open ALM platform, supporting every environment, methodology, and technology. With an integrated suite of easy-to-use tools that share a centralized repository, it is the only ALM platform that enables a culture of collaboration to improve productivity 10-50%, while substantially reducing the cost of software development by up to 80%. As the corporate sponsor of the open source Subversion project, the best version control and [software configuration management \(SCM\)](#) solution for distributed teams, collaborative development is in CollabNet's DNA. Over 5 millions of users at more than 2500 organizations, including Applied Biosystems, Capgemini, Deutsche Bank, Oracle, Reuters, and the U.S. Department of Defense, have transformed the way they develop software with CollabNet. For more information, visit [www.collab.net](http://www.collab.net).

## REFERENCES

- 1 – Wikipedia for CMMI: <http://en.wikipedia.org/wiki/CMMI>
- 2 – Agile Manifesto: [www.agilemanifesto.org](http://www.agilemanifesto.org)

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