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Successful Solutions Through Agile Project Management

by Nancy Y. Nee

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Editor's Note: This is the first in a series about the important of agile in project management. Stay tuned next week for Part 2.

In spirit, both traditional and agile project delivery embody similar principles and practices that aim to deliver measurable results. Traditional project delivery can be described as a “waterfall” approach, which presumes that the requirements, expectations, duration, activities and outcomes of projects can be predicted accurately and planned in a sequence before any actual development activity takes place. As a result, in actual practice, the following factors generally are significant limitations of traditional project delivery:

- Clients typically have difficulty in articulating all project requirements at the front end.
- The ultimate goal is to produce a comprehensive requirements document for sign-off by the users/customers before development can occur.

According to Sanjiv Augustine, agile project delivery “is a way of managing projects to deliver customer value via adaptive planning, rapid feedback, continuous improvement and intense human interaction and collaboration” (16). Delivering “customer value” is a key aspect of agile project delivery. Agile project management is conducted through the collaboration of a small, co-located team that usually consists of the customer/end user, a project manager, a business analyst (or the role of business analysis) and specialist(s). Specialists could include system developers, subject matter experts, IT architect and/or the sole person with specific knowledge or expertise who understands how all the project pieces fit together.

What is Agile Project Management?

Jim Highsmith, one of the originators of the Agile Manifesto and a recognized expert in agile approaches, has defined agility in project management by the following statements: “Agility is the ability to both create and respond to change in order to profit in a turbulent business environment,” and “Agility is the ability to balance flexibility and stability” (16).

In contrast with traditional project methods, agile methods emphasize the incremental delivery of working products or prototypes for client evaluation and optimization. While so-called “predictive” project management methods assume that the entire set of requirements and activities can be forecast at the beginning of the project, agile methods combine all the elements of product development, such as requirements, analysis, design, development and testing — in brief, regular iterations. Each iteration delivers a working product or prototype, and the response to that product or prototype serves as crucial input into the succeeding iterations.

Agile theory assumes that changes, improvements and additional features will be incorporated throughout the product development life cycle, and that change, rather than perceived as a failing of the process, is seen as an opportunity to improve the product and make it more fit for its use and business purpose.

The Agile Manifesto

Dating back to the 1950s, traditional project management emerged from the construction/engineering and defense industries. Evolving from a meeting in 2001 of major software development and IT industry leaders who were concerned about creating better project management results for their clients, agile project management is a twenty-first century management approach. The 2001 meeting of experts resulted in the Agile Manifesto. The Agile Manifesto, written by a group of advocates of iterative and incremental development methods, is the foundation document of the agile movement, and, in combination with a set of 12 agile principles, sets forth the underlying philosophical concepts of agile project management. It is important to note here that agile project management encompasses all aspects of project delivery and not just on the sole function of project management practices. It is inclusive of all business analysis, systems analysis and development, as well as all levels of quality assurance and testing.

The manifesto is included here to enable the reader to understand that the “Go Agile” service’s objectives are to help transition an organization from its current projects delivery approach to one that is compatible with the principles outlined in the manifesto (Agile Manifesto).

Manifesto for Agile [Product] Development

“We are uncovering better ways of developing products by doing it and helping others to do it. Through this work we have come to value—

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

That is, while there is value on the items on the right, we value the items on the left more.”

Principles Behind the Agile Manifesto

- “Our highest priority is to satisfy the customer through early and continuous delivery of valuable [products].
- Changing requirements should be welcomed, even late in development. Agile processes harness change for the customer’s competitive advantage.
- The delivery of working [products] should be frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

- Business people and developers must work together daily throughout the project.
- Projects should be built around motivated individuals. Give these individuals the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working [products] is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity — the art of maximizing the amount of work not done — is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.”

Assuming that your project involves innovation, requires unique expertise and needs a timely turnaround, an agile project approach can provide the solutions or outcome that you need.

Key Challenges to Implementing Agile Development and Project Management Frameworks

The migration from traditional product development and project management

methods to agile methods requires substantive changes in the manner in which certain functions — such as gathering user requirements, deriving a project schedule, engineering the product, managing the team and measuring progress — are performed. The variations between traditional and agile methodologies, detailed in Table 1 below, indicate that “organizations must rethink their goals and reconfigure their human, managerial, and technology components in order to successfully adopt agile methodologies” (Nerur et al., 75).

Companies wishing to adopt agile development and project management frameworks must overcome the following key challenges:

Misconceptions about Agile Approaches

In the debate about traditional versus agile methods, many myths and misconceptions have evolved on both sides of the conversation including:

- Agile methods are just thinly disguised hacking
- Agile practitioners look on requirements definition and design as “not adding customer value” and as “ceremony” to be avoided
- Agile practitioners do not plan
- Agile methods conflict with PMI’s A Guide to the Project Management Body of Knowledge (PMBOK® Guide) and traditional project management practices
- Agile projects can be done quicker, with fewer resources and without a project manager

Project Portfolio Management

Agile approaches are best suited for innovative, exploratory/experimental, “never-been-done” projects such as new software systems with requirements emerging as development proceeds or new product development efforts for a quick-moving marketplace like consumer electronics. Agile approaches are probably not the best fit for repetitive, well-documented, low-variability, low-uncertainty, production-style projects. Project portfolio management (PPM) is a criteria-based decision making model for allocating scarce organizational resources to the most critical programs and projects. Companies have to view “traditional” and “agile” projects within their portfolios through different lenses. Where traditional projects may be funded using a well-worn forecasting process, a company calendar (e.g., fiscal quarter or year), or project milestones, agile projects may have to be funded iteratively based upon their deliverables and changing requirements. Many organizations have difficulty managing a bifurcated project portfolio.

Organizational Structures and Cultures

It is important to recognize that moving to an agile framework is also an exercise in cultural migration. Depending on the geographic location, the business (i.e., products and services delivered), and the organizational structures and culture, some firms will make the journey from traditional methods to agile methods in an enthusiastic and seamless fashion, others will display considerable resistance to the agile ideas, and others are simply a poor fit for these approaches. For example, highly regulated industries that require extensive bureaucracies, intricate processes or detailed documentation will probably lack tolerance for the lean, nimble, artifact-light approach that an agile advocates. Within a company, the challenges in migrating from a traditional environment to an agile environment involve resistance and objections that may occur at three levels:

Management Level

Executive and senior management commitment and support is critical for adopting agile. Key management concerns that must be addressed include:

- Predictability — Traditional managers like to work within predictable environments that allow them to outline detailed requirements, plan a complete project, forecast the budget and manage resources. Agile keeps their focus on the delivery of value to the customer, rather than strict compliance to a rigorous set of procedures, and it values inventiveness and innovation over predictability and unchanging processes.
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- Extensive Time Commitment — Managers must be prepared to accept and sponsor the intensive level of collaboration and involvement that agile methods require. They may have to forgo written status reports in exchange for the daily stand-up meeting.
- Resources Management — Instead of being task managers, they must be ready to trust their project teams to be self-directed, and to tolerate a bit more resource risk as they discover which team members are prepared to take the leap to agile approaches.
- Risk Management — Managers must prepare to accept the reality of project uncertainty, risk and cost, and abstain from arbitrary schedules and budgets, self-delusive “happy talk” or unrealistic “death-march” styles of management.
- Metrics and Measurements — Managers have to accept that the traditional ideas of success and failure will be transformed in an agile environment. Success will not be measured by compliance to plan or strict change control. Instead it will be measured by the outputs delivered by the project teams. In case of earned value management, credit will be given for the products, features and functions delivered and not by the tasks completed by the project teams.

The Team Level

Teams that harbor misconceptions that agile teams don't plan, can't estimate, don't document and can't scale can be significant impediments to any agile migration. A central tenet of the agile movement is the requirement for highly skilled developers. Since agile teams are expected to be small, self-governing and self-regulated, there is a high expectation in regard to the personal attributes of team members — they should enjoy the special challenges of working in an agile environment, be prepared to forego personal recognition in favor of team accomplishment and enjoy working in a highly transparent environment in which their work products, creativity and diligence are visible to their teammates and customers.

The Stakeholder/Customer Level

The trepidations that customers and stakeholders express include the fear that scope will lurch out of control. They will lose the traditional signposts of progress on which they have come to rely, and estimates of time and cost will not be available to help them allocate budget and staff. They also convey unique concerns, such as the agile requirement for intense collaboration and constant availability, and its affect on their own workload. Sales and management teams may express concerns about “account management” as customer representatives are integrated into agile teams.

Aside from the resistance and objections that may occur at the above mentioned three levels, consideration regarding the transition from traditional project management and project teams also pose a challenge to transitioning to an agile environment.

Project Manager versus Project Leader

The traditional project manager (PM) who manages the triple constraints (scope, time and resources) through the use of a project plan will need to change his/her approach to managing the agile team. The successful agile PM must migrate from management to leadership, from monitoring compliance to enabling self-direction, and from acting as a foreman to becoming a facilitator of creativity and innovation.

Distributed Resources and Virtual Teams

A key concern of organizations that wish to adopt agile is the question of dispersed and virtual teams in agile environments. Communication, collaboration and customer interaction are key tenets of agility and many of the agile methods require attendance at a daily session. Therefore, the ability to form and manage teams across multiple geographies and times zones through the use of video, collaboration tools or other virtual techniques is critical to the success of agile projects. Additionally, teams in which PMs and developers are working on many projects at once add to these concerns.

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