# Successful Solutions Through Agile Project Management

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White Paper**

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# Abstract

Today's business climate is both dynamic and complex. Management faces changing requirements and increasing demands, as well as tight budgets and fast turnaround demands. Organizations are struggling to do more with less — fewer resources, including less money, and, in many cases a reduced workforce. Therefore, it's essential to optimize every aspect of business, particularly project management. There's no question that performance and outcome are on top of everyone's mind — this is a reality for public and private sector entities, as well as for non-profits.

Traditional project management is task-driven and predictive; in other words, it assumes that circumstances affecting the project are predictable. Agile project management, on the other hand, operates well in a more fluid, more adaptive environment. Agile project management is a highly iterative and incremental process in which **constant** communication between the customer (end user) and the project team, which includes functions of project management and business analysis, is an inherent and critical element to success.

This paper highlights an approach for adopting the agile project management framework, identifies key challenges to implementing agile approaches, and showcases the roles of project management and business analysis in that context.

# Introduction

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:

1) Clients typically have difficulty in articulating all project requirements at the front end.

2) 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*).[1]

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1  As Highsmith has done in his book *Agile Software Development*, we've replaced "software" with "product" in the *Agile Manifesto* to make it more general.

## *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).

| | Traditional | Agile |
|---|---|---|
| Fundamental Assumptions | Systems are fully specifiable, predictable, and can be built through meticulous and extensive planning. | High-quality, adaptive software can be developed by small teams using the principles of continuous design improvement and testing based on rapid feedback and change. |
| Control | Process centric | People centric |
| Management Style | Command-and-control | Leadership-and-collaboration |
| Knowledge Management | Explicit | Tacit |
| Role Assignment | Individual — favors specialization | Self-organizing teams — encourages role interchangeability |
| Communication | Formal | Informal |
| Customer's Role | Important | Critical |
| Project Cycle | Guided by tasks or activities | Guided by product features |
| Development Model | Life cycle model (Waterfall, Spiral, or some variation) | The evolutionary-delivery model |
| Desired Organizational Form/Structure | Mechanistic (bureaucratic with high formalization) | Organic (flexible and participative encouraging cooperative social action) |
| Technology | No restriction | Favors object-oriented technology |

Table 1. Traditional versus agile software development

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

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# 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:

## 1. 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.

- **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.

## 2. 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.

## 3. 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.

# A High-Level Approach for Adopting the Agile Project Management Framework

To adopt agile project management, companies must take an iterative (or an agile) approach to introduce the framework within their organizations. They must become familiar with agile frameworks, assess their current capabilities to adopt agile project management develop and implement short-term and long-terms initiatives, and adopt the framework over a period of time.

## Learn about Agile Project Management

Before launching the "transformation to agile" project, it is important for key executives, senior managers and project managers/leaders to learn about agile frameworks, the *Agile Manifesto*, and the lexicon that surrounds agile. Learning can be achieved by taking courses, by reading books and publications, and referring to web resources, such as the Agile Alliance and the Project Management Institute (PMI®).

## Assess Organizational Readiness

"Are we ready to execute an agile project?" is a question that can be answered by conducting "Strengths and Weaknesses" and "Organizational Readiness" assessments.

The organization needs to identify and evaluate the various organizational forces in place that may help or hinder its transition to agile project management. Executives and senior managers need to determine:

- Degree to which the organization values innovation and creativity over organizational stability
- Degree to which the organization can make independent, product-related decisions without consulting other organizations
- The organization's willingness to accept and work with uncertainty
- The organization's ability to allocate resources full time to one project rather than assign to multiple projects
- The organization's ability to understand and embrace multiple approaches to documenting and measuring project progress
- Degree to which the organization is able to partner with their customers

## Assess the Project Portfolio

As previously mentioned, agile approaches are best suited for innovative, exploratory/experimental, "never-been-done" projects and not the best fit for repetitive, well-documented, low-variability, low-uncertainty, and production-style projects. Executives, senior managers, and project managers/leaders review the project portfolio and divide it into two discrete portfolios by determining which projects are best suited for agile project management and which are suited for traditional project management frameworks.

## Assess Project Manager (PM) Readiness

"Are the PMs ready to execute agile projects?" is a question that can be answered by conducting a "Project Manager Readiness" assessment. Executives, business managers, and all project managers need to determine:

- Degree to which the project manager focuses on the customer rather than on following standard project management procedures
- Degree to which the project manager values innovation and practical processes over sticking with the plan
- Degree to which the project manager is comfortable with an uncertain and changing environment
- Project manager's skill and commitment to sharing information as needed with all stakeholders
- Project manager's level of commitment to the team and the willingness to promote team collaboration
- Project manager's ability to motivate the team, delegate, and then get out of the way

## Assess the Project Team Readiness

"Are the project teams ready to function within agile project management?" is a question that can be answered by conducting a "Team Readiness" assessment for each team member. Executives, business managers and the PMs need to determine:

- Team members' ability to make independent decisions

- Team members' commitment and capability to collaborate and work as a group

- Degree to which the team members can communicate in person

- Degree to which the stakeholder is willing and able to become a team member

- Team members' ability to problem solve and come up with new ideas

- Team member's knowledge and experience with the application area and the tools for creating the project result

## Analyze Existing Product Development and Project Management Methodologies

The organization's culture, structure and methodologies will determine the effort required to transition to agile project management. Therefore, it important for executives, business managers and PMs to clearly understand:

- Which existing processes, tools and templates for executing projects can be applied to the agile project management framework?

- How will jettisoning certain processes and structure impact the business?

- How much effort and investment in time and resources will be required to develop new tools, templates and processes?

- Will the metrics and measurement techniques to determine project success (or failure) need to change?

- Will reporting methods be different for agile versus traditional projects?

- How will stakeholders and customers react to the change?

- How will the existing culture and organizational structure be impacted by agile project management?

## Organic Implementation: One Small Project and One Team

Once the company makes the decision to give agile project management a try, it is critical not to turn the implementation into a "big bang" project. Instead the company should select a small (and relatively easy) project from its "innovative projects portfolio" and build a team to execute the project. This will require assigning the right PM (see "Assessing PM Readiness" above) and the most experienced team members (see "Assessing Project Team Readiness" above) to the project. Once the team has been formed, it goes through formal training to learn about agile and led by the PM with the help of the project sponsor(s), executes the project in an iterative manner using agile methodologies.

- Innovative/experimental
- Requires active engagement/input on the customer's part
- Needs a team of highly skilled and motivated professionals
- Requires close communication within the team and with the customer for optimal outcome

As the project progresses, the team and the organization conduct "Reflection Workshops" to assess the maturity and improve the team and the organization's capability to execute agile projects. Over time, the organization can use the lessons learned to build more teams and execute more projects using the agile project management framework.

With respect to your organization, you may be able to conduct an evaluation in-house. Alternatively, you may choose to seek outside support to help you determine your organization's readiness for embarking on a project using agile project management techniques.

In order to determine if agile project management is right for you and your organization, your readiness assessment also needs to include an understanding of when completion is (or will be) achieved. "*When is 'done' done?*" What's the answer to this question? What characteristics define project completion? As stated before, agile project management focuses on an iterative, incremental process — "user stories" (more on this later) articulated at the onset and as the project evolves. Success is achieved if the changes, improvements and additional features developed over the life of the project result in the vision that the client provided and the solution that the team developed and tweaked. The end product of agile project management is successful because of the opportunities along the way to make improvements and fit the end product/ solution to its business purpose.

## Functions of the Project Management and the Business Analysis in an Agile Environment — Do You Need Both?

Now that you've decided that agile project management fits your project and your needs, let's take a look at the functions of project management and the business analysis in the context of a project using the agile project management approach. In order to examine their respective roles, it's helpful first to review the characteristics of agile project management compared to traditional project management by considering the chart that follows:

| Agile PM | Traditional PM |
|---|---|
| Focuses on team communication and interaction | Focuses on processes and tools |
| Places priority on developing software and/or solutions that will be progressively modified and improved | Anticipates limited changes and requires comprehensive documentation |
| Emphasizes the importance of customer — project team collaboration and daily communication | Emphasizes the importance of contract negotiation and tasks delineated in the contract |
| Features flexibility and response to change | Works the plan; follows the plan to the end |

Keeping in mind the characteristics outlined on the left side of the chart, we need to examine three terms — envisioning, requirements and user stories — all of which are integral elements of agile project management. In short, the **envisioning** process focuses on the content ("vision") of the project, including the purpose of the project and what it's expected to accomplish. The term **requirement** focuses on understanding the user's (client's) needs to solve a problem or achieve a solution or objective. A focus on requirements is usually the function of a business analysis. As outlined in the IIBA® *Business Analysis Body of Knowledge® (BABOK® Guide)*, there are four categories of requirements with two sub-categories:

- **Business requirements** — enterprise/organizational needs, goals and objectives

- **Stakeholder requirements** — those elements that act as connectors between business requirements and other classes of solution requirements and the way in which a given stakeholder will interact with the solution or end product

- **Solution requirements** — attributes or characteristics of a solution that achieve the business and stakeholder requirements, including:

    ➢ Functional requirements — behavior and/or information that the solution will manage
    ➢ Non-functional requirements* — circumstances or environment in which the solution or end product must be able to operate

- **Transition requirements** — temporary capabilities to transition from current to future state, typically through solution assessment and validation

*In a traditional project management context, this might be called "quality of service" requirements.

**Business analysis** focuses on all aspects of requirements facilitation, development and management at all levels. If the agile project team is a highly experienced and motivated team that can conduct the functions of business analysis skillfully and properly, it can be argued that a separate business analysis resource may not be needed. It's critical, however, to evaluate the expertise and experience of the team thoroughly, particularly the background of the project management, to ensure that skill sets include the areas of elicitation, analysis and assessment — key elements of the business analyst's role — all of which are essential in understanding the features that the user is describing.

That brings us to user stories. In an agile environment, **user stories** typically are developed by the client and the session for user story development is led by a team member who has the requirements facilitation skills of business analysis. This session lead can function in the capacity of **project management or business analysis**. User stories focus on the features that clients (users) expect to be available or inherent in the end product or solution. Features are defined as a product capability (valued by the end user or client) that contains one or more functions and that also includes typical aspects of a solution. Clients (users) describe their expectations or needs using informal, "plain language" stories or descriptions — "user stories." Then, through interaction and communication with the client, the team collaboratively develops the product or solution features.

What happens to the function of the business analysis in user story development? In many cases, business analysis serves as a conduit between what the client (user) has identified as stakeholder requirements and the ability to transform those features into functional requirements. Moreover, in business terms, business analysis makes sure that the user (client) and stakeholders are defining what they need and what they want in terms of meeting the business goal or need by ensuring that the detail function or feature(s) in the user stories are clearly articulated in the end product or ultimate deliverable.

As stated earlier, in order to ensure success, it is essential to conduct a team readiness assessment before embarking on an agile project where requirements development and management leverages the use of user stories. This team readiness assessment ensures that the project team has the right experience, leadership and competence to perform in an agile setting. After that, you can decide if the unique project that you're undertaking needs both — a separate function for project management and business analysis or if a combination of both is appropriate. The case certainly can be argued that both serve essential and necessary roles in successful agile project management.

## The Future is Here

Although the agile movement was the "brain child" of the software development and IT world, it has grown and evolved over the past several years. There is no question that today agile project management can be, and has been, applied successfully to a broad range of projects. Users and stakeholders have benefited from the agile project management approach — one in which the end user and the project team are partnered in a collaborative effort focused on the project vision and the end result.

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# The ESI Solution

Transitioning to an agile approach from a traditional approach can often be challenging. ESI offers a variety of solutions to help successfully implement an agile approach within your organization. ESI's Executive Sessions help identify a strategic approach to supporting and championing agile. Our assessments determine the preparedness of your organization, as a whole, to shift to agile or look into your current agile approach and determine areas for improvement. To help equip agile teams with a thorough knowledge and comprehension of the competency, skills, concepts and tools, ESI developed an *Agile Project Management* course. And, finally, once an organization is prepared to transition to agile, ESI provides coaching and mentoring services to the project team, through Impact Workshops or one-on-one consulting, to ensure that the application of agile is properly implemented.

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