

Agility in Project Management¹

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Abstract

Project management is seen as an effective way to deliver one-time initiatives, often in unstructured environments. Effective application of project management principles in such environments often provide significant return on value; obvious examples are the launch of a new product in a startup environment, the consolidation of systems in a merger and managing a project during a disaster-recovery effort. Tense situations require project management methods that are structured and consistent with the various standards and bodies of knowledge, but also are still adaptable, flexible, fluid or in a word “agile.”

Most often, agile project management is equated with managing an agile development project (iterative project). However this paper wishes to explore what being agile means to a project manager.

In this paper, knowledge and theory of agility is applied to project management discipline. Many of the ideas come from the armed forces, elite strike units and disaster response organizations, often called first responders, all operate at a higher level of agility. These organizations demonstrate leadership in volatile, uncertain, complex and ambiguous situations within a framework of standards for conduct and performance. Current army doctrine calls for mission command, task and purpose and “intent-based” orders to guide the execution of military operations.

The key areas that the paper intends to touch upon are:

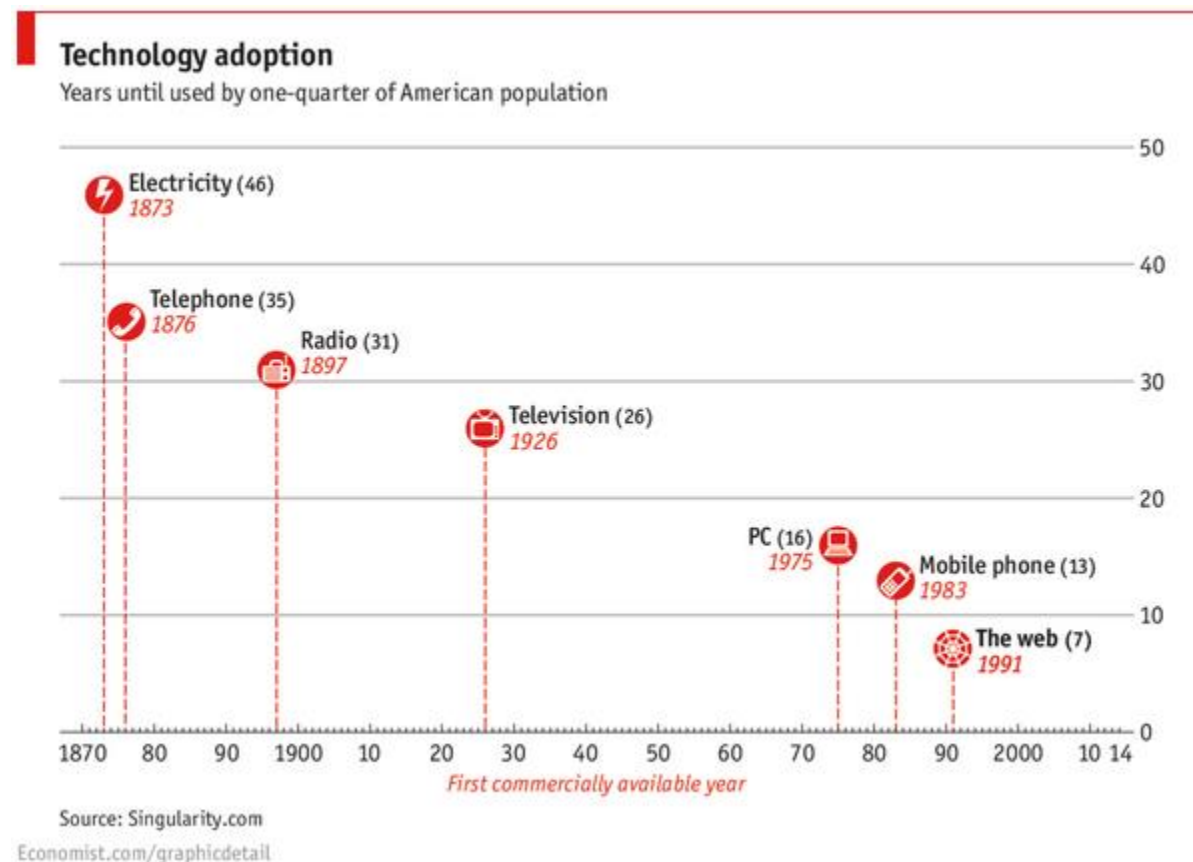
- Learning agility: the ability to apply previous knowledge and embrace learning in new, novel or ill-defined environments
- Importance of communicating intent: What does success look like at the end of the operation.

¹ *Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally presented at the 9th [Annual University of Texas at Dallas Project Management Symposium](#) in August 2015. It is republished here with the permission of the authors and conference organizers.*

- Leader development readiness: combination of one’s motivation and ability to personally grow and develop
- Organized chaos: following core best practices and procedures to ensure optimal execution in spite of uncertainties.
- Strength, honor and grace under pressure: handling conflicts in hostile situations; sense of camaraderie, purpose and integrity

Introduction

Over the last three decades, the business cycle from concept to rollout has shortened dramatically, yet the speed at which change takes place continues to increase. This is starkly obvious based on the rate of adoption of electricity as compared to the adoption of the Internet.



Changes are taking place significantly faster than traditional product cycles. Markets demand organizations respond in a predictable manner to often unpredictable events. Traditional management paradigms seem unable to keep up, which includes the current frameworks and tools used for project management.

Currently agile project management seems to relate exclusively to the agile development of software projects, and not to agility in project management itself. Software development is considered agile-based on the frameworks adopted as described by the Agile Manifesto. However, agility in project management needs to go beyond the management of agile projects and lean toward the agile management of projects.

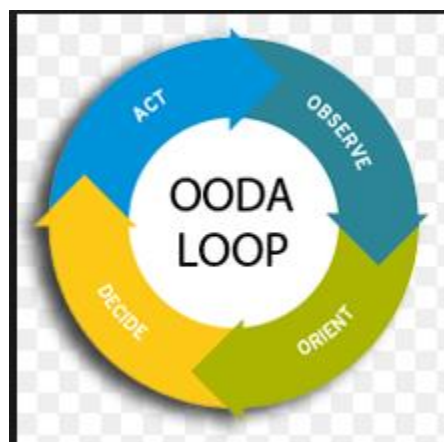
Defining Agility

To be able to develop or use agile project management frameworks, we first need to define agility. Agility is derived from Old French *agilité* (14c.), from Latin *agilitatem* (nominative *agilitas*) "mobility, nimbleness, quickness," from *agilis*, from *agere* "to move"[10]. It is defined as:

- the power of moving quickly and easily; nimbleness
- the ability to think and draw conclusions quickly; intellectual acuity

For the purposes of organizations, agility is usually referred to in terms of timeliness and flexibility. Agility can be defined as the ability to respond and execute to a business-scenario change quickly and at a low cost. However, this does not provide or give us a measure of what quickly is.

To develop a framework for agility in project management it is important to define agility. Our effort to define agility started with research related to the armed forces and existing agile software development literature. One of the best examples we found comes from Col. John Boyd [7]. Col. Boyd was an exceptional fighter pilot and a superb military strategist. He developed his theory of "Patterns of Conflict". The basis of our definition comes from Colonel Boyd's theory, who defined agility as the ability to operate the loop from observation to action faster than the adversary.



We have defined agility in project management as:

The ability of the project team and its stakeholders, to react to an event faster than the ability of the same event to adversely impact the project.

It means those agile in project management processes need to be able to adapt without the need for an actual change to the process.

For some this would be considered reactive, rather than proactive. Reactive deals with the unexpected, while proactive prepares for the expected occurrence or situation. Project management frameworks were created to be inherently agile. Each project is a unique endeavor, so the project management frameworks were designed to allow for each project to use the same framework with the ability to adapt it to the needs of the project and its delivery goals.

The bureaucracy in the use of the process is not that the process in itself is inflexible, but that the users or organizational climate outside the project management framework make it so during application.

Once a definition for project management agility was established, it was our intent to identify a set of characteristics or principles that when embedded within a project environment would lend themselves to making the project agile. We leaned on years of experience as project management consultants. We researched professions considered agile and used what agile software development has learnt. Based on these we started with what Col. Boyd said are the key elements, as described by Steve Adolph [7] in his research of Boyd:

- Unity/Trust – For project management, this relates directly to the development of the team.
- Skill expertise
- Intent
- Vision

We compared these to two different sets of values and principles derived from agile software development methods. Dan X Houston [11] derived underlying characteristics and identified the following:

- Interpersonal interaction
- Working product or service
- Customer/User collaboration
- Responsiveness to change
- Continual delivery of customer value

- Self-organizing, multifunctional collaboration
- Leadership by the motivated
- Technical excellence and simplicity

In the same article Dan X Houston [11] refers to a list produced by Richard Turner as the underlying characteristics of agile software development methods:

- Learning attitude
- Focus on customer value
- Short iterations delivering value
- Neutrality to change
- Continuous integration
- Test-driven
- Lean attitude (Remove no-value-added activities)
- Team ownership

Based on the above identified characteristics and our experience with more than 20 years of project management consulting, we established the initial key principles and characteristics of agility for the purpose of project management as:

- **Learning agility:** ability to apply previous learning and embrace learning in new, novel or ill-defined environments
- **Communicating Intent:** What does success look like at the end of the operation.
- **Leader-development readiness:** combination of one's motivation and ability to personally grow and develop.
- **Organized chaos:** following core best practices and procedures to ensure optimal execution in spite of uncertainties.
- **Ethics:** strength, honor and grace under pressure; handling conflicts in hostile situations; sense of comradery; and purpose and integrity.

Learning Agility

Project management has well-established frameworks that work well in environments where uncertainly and changes are minimal. Even when the project is highly complex, the frameworks have been shown to deliver. The challenge is in applying the framework in uncertain and changing environments. This is where the characteristic of learning agility is extremely helpful. It allows use of established methods and the existing project environment to learn and adjust, so as not to change the process but to use it and add value. This had been well described by Reed [4] as: The ability to apply previous learning and/or embrace learning in new, novel or ill-defined environments.

The ability to continuously learn and apply it must be instilled, not just in the project manager but in the entire team.. The team needs to be comfortable in adapting to variations and changes without having to stop and take direction. Adaptability, however, is a result and one of the keys to agility in project management is the ability to instill the essence of learning agility in the project manager, the project team and the organizational culture.

Adaptability

Creating the environment within the project team for learning ability (and thus adaptability) becomes the responsibility of the project manager. The core concept in learning agility is not only for the team to apply what has been learnt from previous experiences, but to use the current environment to learn and reapply the learning. The project manager needs to ensure the team has the freedom to make these decisions or a forum to express these ideas.

Reed [4] described key behaviors that can enhance or derail learning agility.

The following are listed as enhancing behaviors:

- Seeking—looking for new learning opportunities and ways of doing things, particularly in areas where success is uncertain
- Performing—ability to manage oneself in challenging situations and dealing with new situations in a way that maximizes performance; and
- Reflecting—thinking about experiences to surface critical information

Derailing behaviors include:

- Risk aversion—which prevents an individual from seeking out new opportunities that may guarantee success but will ultimately inhibit learning; and
- Defensiveness—which prevents an individual's ability to manage effectively new situations or biases the way one thinks about past experiences.

For learning agility to be effective, conditions should exist within the organizational culture to foster (enhance, not derail) such learning. In other words, the individual behaviors described in the preceding paragraph must also be manifested in the organization's culture. [4].

In our case, it becomes one of the key responsibilities of the project manager to instill the enhancing behaviors and eliminate or minimize derailing behaviors. To allow this to happen, some methods must exist or there be potential to create methods to encourage enhancing behaviors.

Based on our experience working on different projects with different clients in different fields, we had some ideas on what could be done on the project to improve learning agility. We turned to the fields that adapt and work on the fly within established rules. These were sports (adapting techniques in the middle of the game to win); medical emergency rooms (the ability

to triage as patients come in); and the armed forces (ability to make decisions in difficult, often life-threatening situations).

The following were the key components to be established to help learning agility and encourage enabling behaviors for adaptability:

- Encourage implicit learning
- Team exercises to jointly eliminate barriers

Implicit Learning

Implicit learning is material that is learned in a manner where one is not consciously aware of what is being learnt. Research shows that such learning allows a person to make decisions without the use of conscious memory. Buzard et al. [5] mention the advantages of implicitly learnt skills being resistant to physiological fatigue, psychological stress and secondary-task loading and has resistance to decay over time.

Of the many ways implicit learning can occur the best suited to project management and teams, is the concept of task simplification. When a task is broken down into simpler components, it improves the ability to accomplish the task in an easier manner and the task is accomplished without conscious use of skills; thus enforcing implicit learning. Task simplification also leads to error reduction, which encourages implicit learning.

Team Exercises - Speed Bumps Technique

One of the common principles identified earlier is the characteristic of team development (unity/trust as identified by Boyd; interpersonal interaction or self-organizing team as identified by Houston and team ownership as identified by Turner.

Team development is important to agility if it results in cohesive decision making. Such behaviors would relate back to learning agility. Team exercises or the effort to identify and solve project issues as team greatly enhances learning agility, while also improving unity/trust within the team.

An effective technique to accomplish the above is the speed bumps technique. The speed bumps technique is a group process to identify project specific barriers (speed bumps) and accelerators. The process helps the project team build a common mental model of what causes project speed and what hinders it, so the team can implement improvements. [6]

In addition to improving learning agility, one gets the added benefits of accelerating the project by consciously identifying and removing barriers as identified by Githens [6]

Communicating Intent

Communicating intent is about two principles: communication and intent. Project management about communication and effective communication receive a lot of attention. In our current effort, we focus on the principle and importance of intent to agility.

In his paper, Reed [4] describes how the military deals with the complexity of operational environments involving a combination of conditions, circumstances and influences. One of the doctrines the armed forces uses to deal with such environments is intent-based orders.

With intent-based initiatives, the focus is on purpose rather than details or methods of performing a task. While projects environments are not as complex as military operating environments, we face a combination of conditions including changing requirements, customer demands, evolving market conditions and changing technologies. To be agile, the focus of the project manager needs to be in establishing intent. The process of establishing the end goal and effectively communicating the same to the team, allows the team to make agile decisions based on the project intent.

In the 1980s, The U.S. Army created commander's intent (CI), which is a simple statement that appears at the top of every order specifying:

1. The plan's goal, and
2. The desired end-state of an operation

The CI never specifies enough such that "You can lose the ability to execute the original plan, but you never lose the responsibility of executing the intent". When people know the desired destination, they're free to improvise as needed, in arriving there.

Project management invests a significant amount of time planning for its projects. This is done using detailed planning at the start of the project, the start of each phase or iterative planning as espoused by agile development methods. All this is required for the team and the stakeholders to understand what, how and when the project pieces are delivered.

There is one significant drawback Col. Tom Kolditz, the head of the behavioral sciences at US Military Academy puts it well in his statement:

"No plan survives contact with the enemy"

No project plan survives intact when there are the changing circumstances and external influences. The answer is not to give up planning, but to make sure that the project can adapt to these influences. Current project environments would require this to be done via a process

that involves boards and committees. To be agile, we have to be able to avoid all bureaucratic elements with potential to slow down the project.

The concept of intent-driven projects allows the project team to adapt and adjust to the plan without the need for administrative approval, as long as the intent is not compromised.

Decisions are increasingly weighed against whether the change is needed/not needed based on how it impacts the end goal of the project.

In a recent engagement involving consolidation of systems, the CEO's intent was to allow all divisions of the company to work off the same customer data. During the months of planning cycles, this vision was never communicated to the 15-plus teams whose systems were going to be impacted, modified or eliminated. There was tremendous focus placed on integrating to the new system and eliminating technical debt. After nine months of planning, increasingly ballooning budgets, no steering committee approval the teams and management were increasing frustrated. The management team agreed there was a need to clearly establish and communicate the intent of the project for the first time. Then, we went back to each of the teams and requested they strip down the plans only to the work that met this intent. It took less than three weeks to get steering committee approval to approve an 18-month execution plan that had ballooned to three years when accelerated. That is the power of intent-based project management.

Leaders need to communicate their visions to those who follow them, both in business and in military operations. The commander's intent concept is a longstanding, well-proven mechanism and is nothing more than the desired effect that the commander wants to see upon the accomplishment of a given mission. It is the -means by which a commander conveys his or her desired end state so subordinates can continue to operate in the absence of specific orders.

The fundamental doctrinal precept is that if subordinates understand the commander's intent, they can self-synchronize their actions with the overarching plan to reach the successful end state. [4]

Leader Development Readiness

In a world of volatile, uncertain and complex projects, where changes come fast, the ability of the project to react to an event not only depends on the leadership of the project manager but also the leadership readiness of the project team.

Even though the title refers to leader development, this concept is not dedicated to the development of the project manager alone. It applies to the project team in its entirety. Development readiness refers to a combination of one's motivation and ability. The ability for

each team member to be able to observe and act in an independent manner will greatly decide if project agility exists.

How do we judge and progressively improve leader-development readiness of the project team? Readiness is a highly subjective term – subjective in both scope and degree. Physiological willingness of the project team to cooperate doesn't solely constitute readiness. We looked at the armed forces, which outlines leadership as a process of influencing others to accomplish the mission by providing purpose, direction and motivation.

The armed forces demonstrate leadership in volatile, uncertain, complex and ambiguous situations within a framework of standards for conduct and performance. These mission-related activities translate well for project environments. The Leadership principles of armed forces, are a natural fit to imbibe agility in project management.

The Army's emphasis is on decentralized execution based on mission orders. Decentralized decision making can be incorporated in a project team by entrusting and resourcing the subordinate leaders and team members to make decisions. Appropriately, the focus is on the purpose (read as intent), rather than on the details. Such a concept is not new, It is exactly how Allied and German units conducted operations in World War II.

The leader-development approach must become a part of the very fabric of the organization—engrained in institutional systems, highlighted in education and training and reinforced in the personnel assignment process. Leader development is an investment required to foster agility.

Organized Chaos

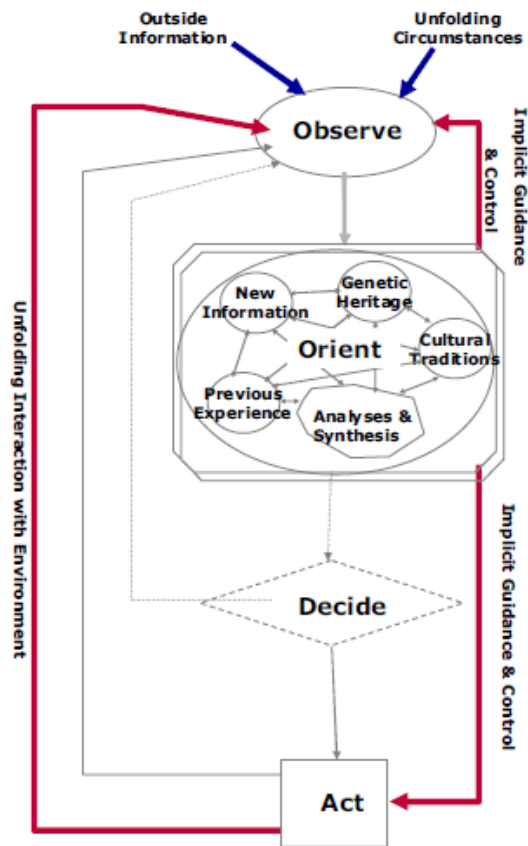
Improved Decision Making [Triage and OODA]

Hospital emergency departments worldwide use the concept of triage. Triage is the systematic categorization of patients based on their levels of medical urgency. Adaptation of this concept for helping handle issues, changes and risk in a Team Triage- manner greatly enhances the agility of the project. It helps the team to make such decisions even when the team leadership many not be available.

We draw on Col. Boyd's principles to help the project manager and his or her team to identify the factors that influence agility and make decisions that do not hamper progress.

The OODA technique is very useful in improving the rate at which the project adapts to or accepts change into its scope. It also lends itself to not breaking established processes, but adapting to the spirit or intent of the process.

An effective technique to building agility into the project management process is the triage all issues, risks and changes and put them through the OODA loop. The more critical items will need to complete the OODA loop much faster than noncritical items. This helps the team focus on what is important and what decisions are needed to avoid slowing down or hampering the project progress.



Graphical Representation of Boyd's OODA [7]

Ethics: Strength, Honor and Grace under Pressure

The concept of agility when applied to project management has the direct and required outcome of increasing velocity of the project. Decisions are made in shorter time with a more diverse set of team members making such decisions. In such an environment, it is critical that there be a single, definitive, underlying principle: Do no harm.

Pressures to excel in business come from everywhere. It's tempting for leaders to take shortcuts to success. In an agile project environment with increased velocity, it is important that such decisions do no harm to the team, the project or the company. No matter what the

pressure, decisions need to be rational and ethical. Ethics happens to be the most common way of distinguishing right from wrong. Ethics is learnt at home, in society and religious settings and may even be considered common sense. Nevertheless, professions have created a code of professional conduct.

The interpretation and application of these norms can differ based on personal values, beliefs and experiences. These varying interpretations are why it is important to continue to emphasize and communicate the importance of ethics and establish a code that is consistent with the organizations beliefs and values.

Ethics are not the same as laws. An action can be legal, but still unethical. Ethical behavior needs to become second nature to the project team and to the stakeholders. It has to be an unconscious choice.

Think more like a pro golfer or a baseball player. Professional golfers and baseball players analyze their swings endlessly. They debate them with others and make adjustments over and over until they perform flawlessly. When they're in the heat of the moment, they don't need to consciously analyze the hundreds of elements involved in the swing. The same can be said for ethical decision making. Competing priorities require decisive decisions. Any decision made should do no harm to the overall health of the project or the organization supporting it, even if it seems to provide immediate relief to the project.

Conclusion

In order to aid agility, we must establish principles and characteristics that will help projects operate in an agile manner. We cannot develop frameworks until we understand the underlying principles and are committed to making them a fabric of the corporate culture and part of how business is done.

The mission of the organization must include measures to educate, train and provide experiences to progressively develop leaders to prevail in full-spectrum operations. As part of this process, organizations must provide leaders with the motivation and the ability to develop, with the focus on developing agile leaders. These are the agile, adaptable and innovative leaders that today's organizations require. Complex projects demand that teams operate with competence and confidence in ambiguous, frequently changing circumstances.

A key lesson from Col. Boyd's theory is the importance of team culture. Agility is a cultural trait. It will be critical that organization first invest in the development of skill and expertise that embody the characteristics of agility. Implementation of frameworks, methods, tools and processes will not achieve the required agility without embedding underlying principles.

In the words of Ralph Waldo Emerson:

“As to methods there may be a million and then some, but principles are few. The man who grasps principles can successfully select his own methods. The man who tries methods, ignoring principles, is sure to have trouble“

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