

# Agile “Mumbo Jumbo”

Helping ICEAA and Cost Estimators Be *Agile*



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**ICEAA Professional Development & Training Workshop**

**June 2017**

## **Abstract**

You don't put any stock in this Agile "mumbo jumbo" do you? Well, Agile is here to stay and is gaining popularity. Once attributed to only software development efforts, the Agile approach is being applied to numerous other types of projects and processes. There are many concerns about applying core cost estimating techniques to Agile projects effectively and accurately. With this in mind, it is time for cost estimators and ICEAA become Agile and consider applying Agile techniques to the cost estimating approach itself. This paper will discuss current issues and some solutions for cost estimating Agile projects, clear up common misconceptions about Agile, and Introduce an Agile approach to cost estimating, including a draft Agile Cost Estimating Manifesto with suggestions on how to incorporate it with current cost estimating training, so ICEAA and its members can BE Agile.

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## Executive Summary

As Agile development processes continue to become more popular and expand their utilization in software and non-software projects, the ability of accurately estimating the costs of those efforts has advanced to the forefront of the cost estimating world. Also, entering the spotlight with these efforts is the difficulty of conducting those cost estimates. Most often, the focus is on the work breakdown structures, associated methodologies, and analogous data points. Rarely is the overall approach to the overall cost estimate itself discussed or modified.

However, the evolution of new development and project execution techniques continues and a shifting approach in accompanying processes is now more common than in the past. Gone are the days that every project is scheduled in a pure waterfall format with a set start date, end date, calculable critical path, predictable budget, and well defined deliverables. Current project trends are for Agile types of developments scheduled with short sprints that have varying lengths, constantly changing product backlogs, moving budget range targets, and deliverables that are defined by the development team's definition of "done" for the effort during the project. It is up to cost estimators, product owners, and stakeholders of these Agile projects to recognize and participate in these new approaches.

Agile projects empower project developers to ensure efficient and complete creation of deliverables at all times throughout a project. They do so by allowing requirements, schedule, and scope constraints to be flexible as long as a functioning deliverable is always the result. However, if the cost estimating approach to the project is not also altered to accommodate this approach, the increased flexibility of these constraints can make the accurate and reliable estimating of costs unattainable. Adopting an Agile cost estimating technique allows the cost estimate to compliment the Agile project, ensure accurate results, and produce a functioning cost estimate at all times. The International Cost Estimating and Analysis Association (ICEAA) has a great opportunity to become the authority on this technique, develop curriculum, train/certify cost estimators for it, and BE Agile.

## Introduction

In recent years, Agile development projects have become very popular for the consistent and efficient ability to deliver project deliverables (usually working software) in an atmosphere of changing requirements, schedules, and scope at all times. This management approach is ideal for projects where customers are looking to break the seemingly cycle of projects that wind up over budget, out of scope, and with product deliverables that aren't what they need, thought they would be, or what they want. Unfortunately, the very nature of the Agile process as a mentality based on a set of guidelines rather than a detailed list of steps invites incorrect interpretation and application by those trying simply to take advantage of the latest buzzword for marketing. Even when the approach is correctly utilized for the development of a project, other tasks integrated with the development can suffer due to their inability to be Agile.

Especially difficult to conduct in an Agile environment, are the development of cost estimates for projects. Generally, cost estimating depends on a set of well-defined requirements and assumptions that can be relied upon for the establishment of a baseline for the financial impact as a result of a project. Since assumptions are every changing for Agile projects throughout the development, cost estimators seldom have a concrete data point to rely on. Many times, cost estimators have attempted using various factors or other independently formulated adjustments with traditional cost estimating methods to accommodate the differences in Agile development and achieve the accuracy they desire in their final products. Although some of these adjustments can help, they are really an attempt to treat a symptom rather than the underlying cause of inaccurate cost estimates. It is my hope that this paper will provide specific insight to Agile projects, correct some common misinformation about those projects, and provide an approach to cost estimating Agile projects that addresses the real problem: Agile projects do not follow traditional development and scheduling techniques therefore it is not appropriate to attempt a cost estimate for an Agile project using a traditional cost estimating approach.

This paper will discuss current issues and some solutions for cost estimating Agile projects, clear up common misconceptions about Agile, and Introduce an Agile approach to cost estimating, including a draft Agile Cost Estimating Manifesto with suggestions on how to incorporate it with current cost estimating training, so ICEAA and its members can BE Agile.

## The Agile Approach and Common Misunderstandings

The Agile approach is based on the Agile Manifesto first created in 2001 by a group of developers in an attempt to make the development of projects more efficient, less susceptible to the negative impacts of organizational impracticality, and to ensure success. Agile is often associated solely with software development projects, but recently the approach has been used for many

non-software companies and projects with great success. A study in 2015 by Software Advice<sup>i</sup> found that while a majority of companies, projects, and project managers using the Agile technique are software and IT related, a growing percentage (48%) are non-software efforts.

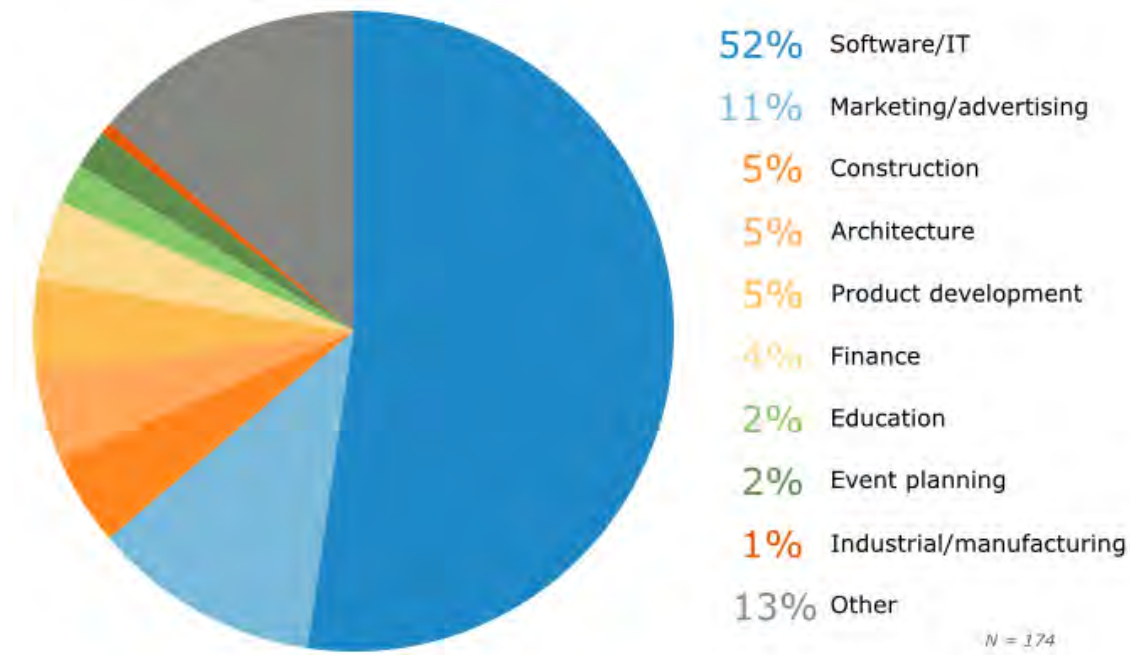


Figure 1. Software Advice- Agile Project Management Software User Report – 2015

Additional findings of the study included the following:

1. Ninety percent of respondents say workflow tracking improves efficiency more than any other Agile functionality.
2. Eighty-eight percent of respondents say scrum boards and activity streams increase project management efficiency.
3. Nearly half of respondents (49 percent) say the most common challenge of using Agile software is training others how to use it.
4. Workflow tracking is the most commonly used Agile software functionality, used regularly by 95 percent of respondents.

Many organizations and development teams will claim that they are experienced at “doing” Agile as a product offering. Such a statement is fundamentally incorrect as the process requires one to “be” Agile and adopt the *mindset* for any aspects of a project once the development approach has been determined as Agile.

As advantageous as Agile can be to project development, it can be disastrous if the principles of Agile development are not adhered to and are implemented in an incorrect fashion. There are numerous instances where projects failed and the cause was immediately attributed to using the Agile process for a slew of invalid reasons such as Agile allows missed project deliverables, Agile is anti-methodology, Agile is anti-documentation, and many others. Although Agile provides many advantages over traditional methods, it still requires solid planning, recognition that it is not the same for any two projects, and strict respect for the principles for which it was based upon. The 12 Principles of Agile are in Figure 2 below.



Figure 2. The 12 Principles of Agile

## Agile and Cost Estimating

The use of Agile has allowed development teams to make advances in the way products are produced, but in some instances, the advancements have come at the cost of making other dependent processes more difficult including scheduling and cost estimating. Historically, these processes standby for the development of detailed requirements to be established and refined prior to creating timelines, cost estimates, budgets, and any necessary documentation directly dependent on the development process. Such an approach is extremely difficult in Agile projects, especially for cost estimates, since the requirements and schedule are not constrained. Below are some common reasons often provided to explain the difficulty of producing cost estimates for Agile projects:

1. Agile projects are often software development efforts which already create unique challenges for cost estimates
2. Each project is by definition “unique” when using Agile
3. Projects are allowed to have requirements change throughout the effort
4. Time constraints and schedule are permitted to change throughout the effort
5. Project scope is vaguely defined

The points above are often associated with Agile cost estimates, but are they really the problem?

## The Real Agile Cost Estimating Problem

Since the first utilization of Agile by product developers, the cost estimating community has been trying to come up with new work breakdown structures, formulas, factors, and other tools to estimate associated costs accurately. However, most of these attempts have been made using a traditional method of cost estimating the entire project for finite scope, schedule, and requirements. With such focus on adapting detailed cost estimating methods, the bigger problem has been ignored: *If traditional development and project management techniques are insufficient for an Agile project, traditional cost estimating techniques probably are insufficient as well.* Alternatively, cost estimators should be embracing Agile just as developers and later, schedulers have to create a new cost estimating method that matches the approach rather than forcing the traditional approach onto a non-traditional process.

## How Cost Estimators Can Be Agile

With the understanding that the overarching conflict between traditional cost estimating and Agile exists, there are a number of actions cost estimators can take. The first of these actions is for cost estimators to BE Agile! Cost estimators are project team members just like developers, schedules, product owners, and other stakeholders. With this in mind, cost estimators have an opportunity to take advantage of and participate in the Agile development process for a project.



In many cases, cost estimators have already been participating in Agile developments without formally recognizing it. Some Agile opportunities most beneficial to the cost estimator are (as Agile rules permit):

- Attending Daily Scrum or Stand Up meetings
- Contributing to Sprint Planning efforts
- Attending Sprint Retrospectives
- Engaging the Agile Project Management Team
- Communicating with the Agile Product Owner and Architecture Owner Team

Since Agile has many methodologies such as Scrum, Kanban, etc. cost estimators should make an extra effort to compliment the approach being used for a particular project. For example, if the project uses sprints for development, cost estimates should be created at the beginning of each sprint and at the sprint level.

### **An Agile Cost Estimating Case Study**

The approach mentioned above is not necessarily a new one. A multi-year study of four companies conducted by Siobhan Keaveney and Kieran Conboy at the National University of Ireland<sup>ii</sup> focused on multiple project types, lengths, and Agile methodologies. The results identified that more frequent cost estimates aligned with the Agile process were conducted in these efforts, generally at the beginning of each development iteration and found overall cost estimation was easier and more accurate than when traditional approaches were used. Overall, Keaveney and Conboy drew the following conclusion as a result:

*“The study revealed that estimation inaccuracy was a less frequent occurrence for these companies. The frequency with which estimates are required on Agile projects, typically at the beginning of each iteration, meant that the companies found estimation easier than when traditional approaches were used.”*

### **Helping ICEAA Be Agile**

The discussion above has focused mainly on how cost estimators can be Agile and improve their performance on cost estimates for Agile projects. However, industry and the cost estimating community must play a role in this as well to support the cost estimators “on the front lines.” ICEAA has made an exceptional effort to do so in recent years by establishing a specific track for Agile discussion at its annual symposium, focusing association articles on the subject, and acknowledging Agile projects in training sessions, but more can be done. ICEAA can embrace Agile through the establishment of full certifications, training, curriculum, and documentation similar to what the Project Management Institute (PMI) and other organizations have done for

scheduling and project management on Agile development. Specifically, ICEAA can provide the following:

- Include sections on Agile cost estimating techniques in the Cost Estimating Book of Knowledge (CEBoK) or create an Agile Cost Estimating Book of Knowledge (ACEBoK)
- Include more Agile cost estimating in the currently offered classroom training or offer Agile versions of the classroom training
- Create an Agile Certified Cost Estimator/Analyst (ACCA) credential (or a specialty credential similar to the Parametric Specialty Certification) that compliments the existing Certified Cost Estimator/Analyst (CCEA) along with the requirements guidance to sustain the credential

By adopting an official cost estimating approach to Agile, further gains on how to accurately and efficiently work with these types of projects can be made at an accelerated pace. Such an approach would also serve to strengthen ICEAAs current standing in the industry and expand its presence into and throughout the Agile development industry. Finally, such an expansion would help to solidify the existing membership and serve to market ICEAA, attracting new membership as a result of exposure to new industry communities, companies/organizations, conferences, and publications.

### **The ICEAA Agile Manifesto**

With some small tweaking, the Agile Manifesto<sup>iii</sup> can be applied from a *cost estimating* perspective and serve as a basis for ICEAA to be Agile. The ICEAA Agile Manifesto is in Figure 3 below.

Our highest priority is to satisfy the customer through early and continuous delivery of valuable <b>cost estimate</b> .	The most effective and efficient way of conveying information to and within a <b>cost estimate</b> team is face-to-face conversation.
Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.	Agile processes promote sustainable development. The sponsors, developers, <b>cost estimators</b> , and users should be able to maintain a constant pace indefinitely.
Deliver a working <b>cost estimate</b> frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.	Continuous attention to technical excellence and good design enhances agility.
Business people, developers, and <b>cost estimators</b> must work together daily throughout the project.	Simplicity – the art of maximizing the work not done – is essential.
Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done	The best architectures, requirements, <b>cost estimates</b> , and designs emerge from self-organizing teams.
A working <b>cost estimate</b> is the primary measure of progress.	At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly

Figure 3. The ICEAA Agile Manifesto

## Conclusions

Agile projects empower project developers to ensure efficient and complete creation of deliverables and maintain a working product at all times. They do so by allowing requirements, schedule, and scope constraints to be flexible. However, if the cost estimating approach to the project is not also altered to accommodate this approach, the increased flexibility of these constraints can make the accurate and reliable estimating of the project unattainable. Adopting an Agile cost estimating technique allows the cost estimate to compliment the Agile project and produce accurate results. The International Cost Estimating and Analysis Association (ICEAA) has a great opportunity to develop curriculum for, train, and certify such a technique and BE Agile.

## Sources

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<sup>i</sup> Software Advice (2015). Agile Project Management Software User Report. Retrieved from <http://www.softwareadvice.com/resources/Agile-project-management-user-trends-2015/>

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