



How to Successfully Use Agile Methods to Deliver Results in Higher Education Environments

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Table of Contents

Agility Essential in a Fast-Changing World	3
Suspending the Change-Resistance Engine	4
The Agile Mindset Shift	4
5 Steps to Create a Culture that Embraces Agile	6
Case History: How a Massachusetts University Embraced Agile	7
Key Ingredients for Agile Success	8
Agile Adoption in Higher Education	9

Agility Essential in a Fast-Changing World

Reduced federal grant money. Shrinking endowments. Demographic changes. Online and distance learning initiatives. Different degree models. Increasing competition....

Colleges and universities face tremendous pressures that demand rapid responses and new solutions. Unfortunately, the traditional project management methods employed by so many higher education institutions are often not delivering. Is there a better management system that will reduce response time, enhance flexibility and increase innovation?

Leaders are looking toward the software industry, where Agile development has proven an efficient way to increase the number and effectiveness of product releases while enhancing customer satisfaction. Can Agile – and its implementations through Scrum, Kanban, XP and others – work in the world of higher education?

In the following pages, we'll look at:

- Cultural changes necessary to implement Agile effectively in higher education
- How to create these cultural changes
- How one Massachusetts university is implementing Agile
- Essential ingredients for Agile success



Traditional project management methods are not delivering. Can Agile development be a viable solution?

Suspending the Change-Resistance Engine

Colleges and universities have operated the same way for a long time, but the world around them has changed. Even the most elite institutions are feeling pressure to innovate and create new opportunities. Some are looking within and concluding that the old way of doing business is no longer working.

A typical higher education institution adheres to a traditional hierarchical structure marked by layers of management and committees. As one university employee put it, “There is a different department with different managers for everything.” Departments often occupy separate buildings with very little interaction with other departments. Even within departments, project teams operate in silos with little interaction between teams and sometimes even between team members.

The culture within higher education celebrates knowledge – but often an individual’s knowledge rather than that of a team or department. Expertise is rewarded and celebrated, but rarely shared. In the lecture hall, this approach may make sense, but in operational settings it can make collaboration and trust between team members extraordinarily difficult to achieve.

According to an IT department director in a major East Coast university, “there tends to be an emphasis on process over people – a very structured, regimented environment.” This department director recognized that his teams were stuck in a rut and needed a different way of doing things to deliver more value to their customers. He researched different development models and felt that Agile was worth an “experiment”.

The Agile Mindset Shift

Agile is based on fluidity, interaction, teamwork and shared knowledge – in other words, a 180 degree change from the controlled, siloed processes commonly employed by higher education institutions.

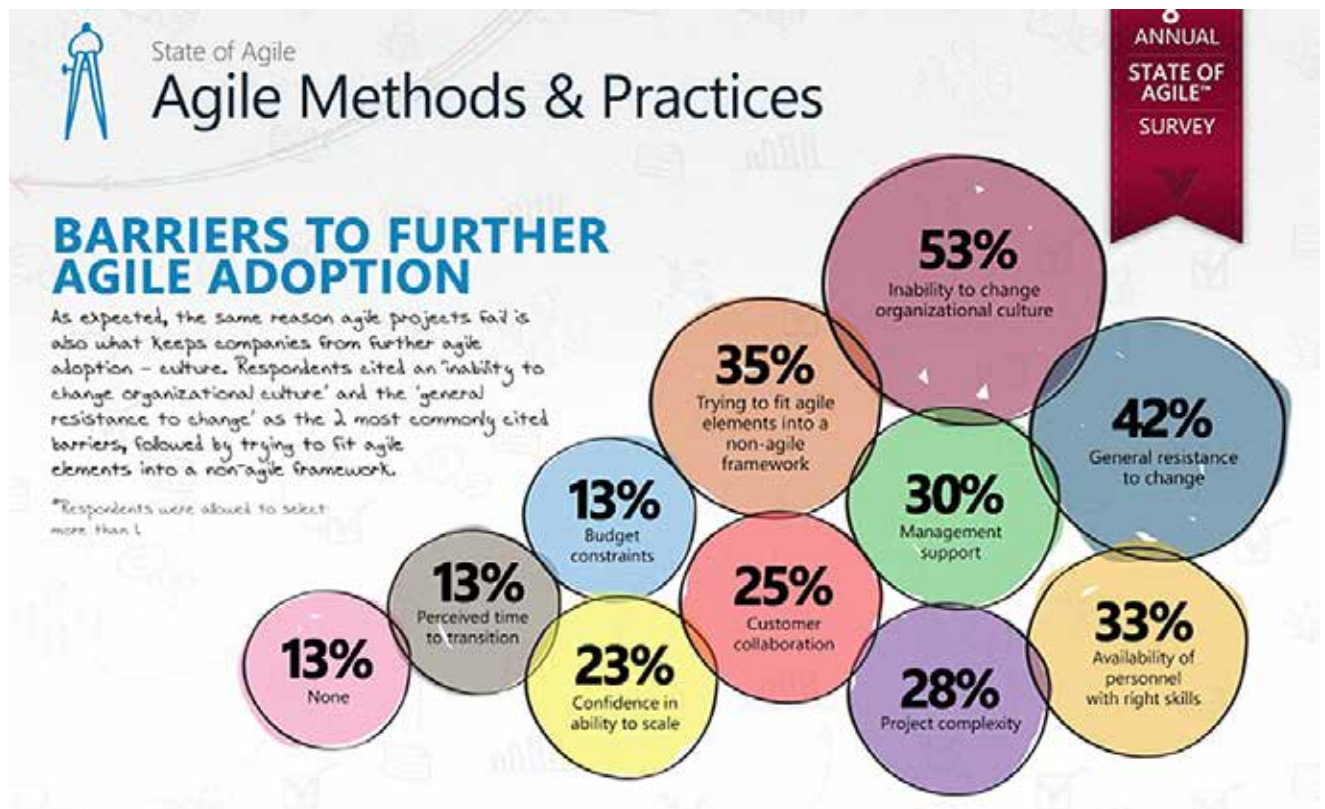


Agile requires a fundamental change in the mindset of teams accustomed to operating in a traditional environment.

As set forth in [The Agile Manifesto](#), Agile development is focused on twelve principles:

1. Early and continuous delivery of products to the customer
2. Welcoming changing requirements, even late in the development process
3. Deliver working products frequently in a short time frame, typically every two weeks
4. Frequent collaboration between the end user and developer
5. Trust motivated teams to get the job done and provide the environment and support that they need
6. Rely on face-to-face conversation as the most efficient and effective means of conveying information
7. Measure progress through the creation of working software
8. Maintain a constant pace indefinitely
9. Pay continuous attention to excellence
10. Keep everything as simple as possible
11. Produce the best work through self-organizing teams
12. Regularly reflect as a team about how to become more effective and adjust behavior accordingly

Agile requires a fundamental change in the mindset of teams accustomed to operating in a traditional environment. It is no surprise that “inability to change organizational culture” and “general resistance to change” were listed as the top two barriers to agile adoption in the “8th Annual State of Agile Survey” released by VersionOne in January 2014.



Source: [StateofAgile.com](#). State of Agile is a trademark of VersionOne and VersionOne is a registered trademark of VersionOne, Inc.

5 Steps to Create a Culture that Embraces Agile

The first step to implement Agile in higher education environments is often the hardest. The institution, or at least pockets within the institution, must embrace a wholesale cultural change that challenges current assumptions and ways of doing things.



Institutions must embrace a wholesale cultural change to effectively implement Agile.

A transition that is imposed on team members is doomed to fail and is contrary to the collaboration that is at the heart of Agile. FreeStanding Agility has successfully guided Agile implementation at higher education institutions through the following steps:

1. **Assess the Culture within Teams**

In *The Reengineering Alternative: A Plan for Making Your Current Culture Work*, author William E. Schneider sets forth four cultural styles:

- Collaboration – Celebrates interaction, egalitarianism and pragmatism
- Competence – Celebrates professionalism, meritocracy, competition and efficiency
- Control – Celebrates order, stability and predictability
- Cultivation – Celebrates creativity, evolution, growth and development

Even within departments, different teams may have very different styles. Teams based upon control or competence might need more help to transition to an Agile mindset.

2. **Start Small and Iterate**

Wholesale change is incredibly difficult. Instead, start by experimenting with Agile on a team that already leans in that direction. Introduce Agile to a team that has a collaborative or cultivative approach and allow them to harness the learning cycles of Agile to go deeper.

3. **Allow Participants to Opt-In**

You can't change a mindset by insisting that it be so. If a team does not feel that Agile is right for them, let them opt out. Once they see successes from teams practicing Agile, they will be far more open to the concept.

4. **Provide Guidance**

Even the most highly motivated teams can struggle when trying a new way of doing things for the first time. Maximize their success by providing coaching to guide them through the process. Early success often dictates whether other teams embrace the Agile approach and change their mindset, or whether they stick to the status quo.

5. **Socialize Successes**

Seeing is believing. The most powerful way to change the mindset of Agile skeptics is to show them Agile in action, talk about the processes and publicly share the successes. Early adopters need to be evangelists for the approach if more widespread cultural change is to take place.

Case History: How a Massachusetts University Embraced Agile

In 2006, a team within a Massachusetts university's Financial Administration department completed a massive, multi-year custom development project. The project had ballooned in scope, was way over budget and the final project was late. Team members knew there had to be a better way to develop a new product. When add-ons to the custom program were needed, they turned to Scrum, the most popular Agile framework. The project goals were met within one month and the project completed within budget, but leadership members within the IT department were not convinced. They preferred the old way of doing things, despite efforts by a core group of people to advocate for agile.

By 2008, the Financial Systems Solutions (FSS) team's business partners were clamoring for faster, more frequent product upgrades. At the same time, the recession took a huge bite out of the university's endowment and all departments were doing more with less. The time seemed right to try something creative.

The FSS team and its IT counterparts went through Agile training. According to one participant, "a lot of investment had been made in training, but no real headway had been made. There were still a lot of skeptics."

Despite confidence issues, the FSS team tried to go Agile without support and the effort flopped. "It was really chaotic and disorganized," recalled one participant.

Fast forward to Fall 2013/Winter 2014 and Agile is being successfully implemented by multiple teams within the university's FSS and Student Information Systems (SIS) departments. Concrete benefits include almost double the number of product enhancements when compared with Waterfall releases with about half the number of bugs, four times the number of bug fixes, expedited testing and more timely documentation (see Table 1).

Table 1 – Concrete Benefits

Item	1_34 (waterfall)	1_35 (struggling with scrum, waterfall)	1_36 and 1_35 stabilization (scrum)
Enhancements released	36	67 (inflated ticket/enhancement count due to team's confusion with user stories)	62
Bug fixes released	5	17	21
Documented research (spikes)	unknown	unknown	9
Total tickets in release (bugs, enhancement, spike, task)	48	110	98
Enhancement bugs logged	153	191	78
Internal documentation completed when	Still outstanding	Still outstanding	12/11/2013
External documentation completed when	unknown	unknown	12/06/2013
% of tickets with a test plan	< 75% (best guess)	< 75% (best guess)	100%
% of tickets with a test plan review	0%	0%	100%
% of tickets with a code review	0%	0%	100%
Majjority of secondary testing completed when	Day of sign off	Day of sign off	10 business days before sign off
Confidence level in code released (1 is low 10 is high)		6	8
Stress level with release (1 is low 10 is high)		6.5	4

The university is discovering that the intangible benefits of Agile are just as significant. As the chart illustrates, team members reported significantly lower stress levels with product releases. The concrete benefits of increased cross knowledge sharing is harder to quantify, but one project manager calls it “hugely beneficial”. “Before, whoever was most experienced just took a task and did it. Now we share expertise and trust levels have gone way up,” he explains.

Other departments have followed the Agile experimentation undertaken by FFS and SIS and are now looking at applying the Agile framework to their own projects.

Key Ingredients for Agile Success

It is valuable to look at the circumstances that changed between this Massachusetts’ university’s failed attempts at Agile to their success today. The following factors emerged as essentials for Agile success:



Teams need to know that senior management will provide the training, coaching and resources necessary for early success.

- **Compelling Reason** – There needs to be consensus that the old ways aren’t good enough anymore. Before talking about specific approaches, there needs to be widespread agreement that operations need to be able to react to opportunities and challenges at a fast pace.
- **Support from Leadership** – Teams need to know that senior management is on board with trying a new approach and will provide the training, coaching and other resources necessary for early success.
- **The Right Team Members** – Agile relies on collaboration and self direction. Team members must be willing to tackle work together, not wait to be told what to do, and willingly share their expertise. It is possible to teach individuals how to work well in a group, but it’s equally important to coordinate with HR on hiring decisions to make sure that soft skills and cultural fit are weighed along with technical expertise.
- **Clear Roles and Responsibilities** – Organizational change needs to happen for Agile to be more than a one-time experiment. This change takes time, work and an organized effort to spread the word about successes. Be sure to assign roles and responsibilities to publicize successes, talk with key leaders and build consensus.
- **Facilitated Learning** – As one Project Manager put it, “you can’t do this from book learning.” Early implementation of Agile will be difficult without guidance from someone who has implemented Agile processes before, knows how to guide the team to success, and can look at situations objectively, without emotional or political baggage.
- **Inspect and Adapt** – The biggest myth about Agile is that documentation and project plans fall by the wayside as teams sprint to complete tasks. In reality, a successful project relies upon upfront and ongoing planning to gather customer expectations and information, establish priorities, set expectations, measure results, document tests and so forth.
- **Sustainability** – The true measure of success is whether Agile has infiltrated the institutional culture so it is embraced even after the initiators have moved on. This longevity requires constant cultivation of new leaders to carry knowledge and commitment forward to future projects.

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RSA Security LLC
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Symbolic LLC
Unidesk Corporation
U.S. Department of Homeland Security
U.S. Government Accountability Office

Agile Adoption in Higher Education

Agile is not new to higher education institutions, but statistics about actual implementation of Agile are scarce. At the EDUCAUSE 2013 Conference, Dawn Nicholls and Bill Lee presented statistics from a survey from 34 different institutions across the UK, USA and Canada. According to the survey, more than 90% of respondents were using agile to some degree. Of those, 39% were using Agile on a small number of projects, 18% were just getting started and 11% were thinking of using Agile.

An ever-changing world that demands responsiveness from its institutions has made agility a priority. Increasingly, universities and colleges are seeing that Agile just might be a viable path to get there.

To find out more, please visit us at FreeStandingAgility.com or call (781) 609-7742.



About FreeStanding Agility

FreeStanding Agility is a team of Agile coaches, consultants and trainers who are focused on helping organizations improve. We believe that training is necessary, and that coaching accelerates a successful transition to an Agile. We hold that long-term dependence on external coaches can prevent organizations from becoming truly Agile. We value working with our clients in ways that enable them to establish Agile practices and free themselves of outside consultants sooner, rather than later.

Our coaches and consultants are distinguished professionals with credentials in Agile coaching, counseling, organizational development, mediation, facilitation, and training.

In serving our clients, we strive to live out our values:

- **Creating Independence** over generating billing
- **Championing Learning** over avoiding risk
- **Building Relationships** over building transactions
- **Inviting Participation** over assigning responsibility

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