Agile principles in practice

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In this article

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Aaron Bjork discusses how we incorporate Agile principles and what that looks like in practice. Everything about how we manage teams, roles, planning, sprints, and flow has brought improvement to the software we build and use daily that customers can depend on.

Introduction to Azure DevOps and TFS

The Azure DevOps team is made of about 800 people that contribute to either the subscription-based cloud service (Azure DevOps Server) or the on-permise product (TFS). Azure DevOps and TFS are platforms for software development teams to collaborate, plan, write, build, test, and deploy their code.

The Azure DevOps development teams work in 3-week sprints, shipping at the end of each sprint. About 3-4 times a year, the updates are packaged and applied to TFS via updates.

Before vs After

Below you can find some of the changes our development team made as we made the leap to apply Agile practices to our workflow.

Before	After

Before	After
4-6 month milestones	3-week sprints
Horizontal teams	Vertical teams
Personal offices	Team rooms
Long planning cycles	Continual Planning and learning
PM, Dev, Test	PM and Engineering
Yearly customer engagement	Continual customer engagement
Feature branches	Everyone in master
20+ person teams	8-12 person teams
Secret roadmap	Publicly shared roadmap
Bug debt	Zero debt
100 page spec documents	Specs in PPT
Private repositories	Open source
Deep organization hierarchy	Flattened organization hierarchy
Success is a measure of install numbers	User satisfaction determines success
Features shipped once a year	Features shipped every sprint

Instrumental changes

There are four key changes that we decided to make to really make our development and shipping cycles efficient and healthy.

We changed our culture

"*Culture eats strategy for breakfast.*" - Peter Drucker

We've found that the key motivating factors for people are **autonomy, mastery,** and **purpose.** At Microsoft, we are looking for ways to bring those factors to our PMs, developers, and designers so that they feel empowered to build the right things.

Two items we heavily consider for our approach are **alignment** and **autonomy**:

- Alignment: Happens from the top down, ensures people understand what we're going to do and that people are lined up on business goals, aspects, and why we're trying to do what we're doing
- Autonomy: Happens from the bottom up, ensures people come into work every day and feel like they have a big impact on day-to-day activities and decisions

There is a delicate balance between the two - too much alignment and a negative culture gets created where people punch in, punch out, because that's what the "manual" says to do; too much autonomy and there's no structure or direction, leading to inefficient decisions and plans.

We changed our approach to teams

We started thinking about teams more than individuals in Azure DevOps. We organized people and teams into two groups: PMs and engineers.

- PMs: Responsible for what we're building and why we're building it
- Engineers: Responsible for how we're building it and ensuring we build it with quality

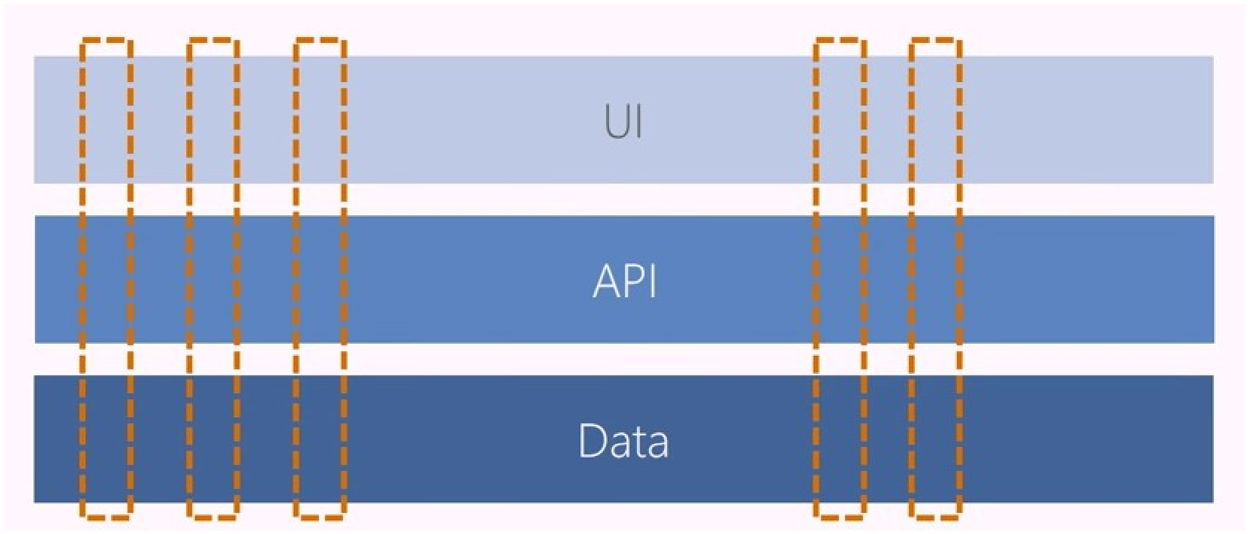
The characteristics of our teams:

- Cross discipline
- 10-12 people
- Self-managing
- Clear charter and goals for 12-18 months
- Physical team rooms
- Own features in production
- Own deployment of features

Makeup of teams:

Before, teams would be horizontal - they would either cover **all** UI, **all** data, **all** API, etc. But now what we want are teams that own their area end-to-end in the product. We implement strict guidelines in certain tiers to ensure uniformity across the product among teams.

We strive for vertical teams:



Self-forming teams

Every ~18 months we practice what we call the "yellow sticky exercise". This is an activity in which developers are able to choose which areas of the product they're interested in and would like to work on for the next couple of planning periods. This exercise provides the teams with autonomy - able to choose what they work on, and also helps the organization with alignment as it makes sure we have balance among the teams.

About 80% of the people in this exercise end up going back to the team they currently work for, but they go back feeling empowered that they had a choice.

Transparency and accountability

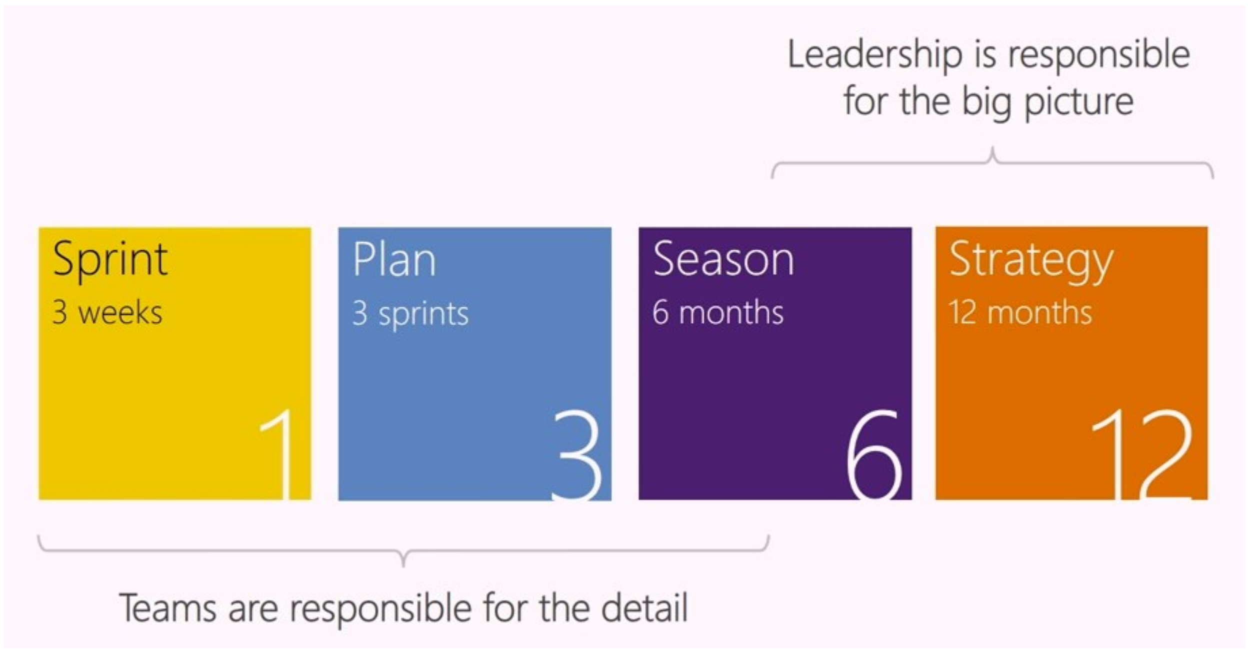
At the end of every sprint, every team sends a mail saying what they've accomplished in the previous sprint, and what they plan on doing in the next sprint.

We changed how we plan and learn

"Plans are worthless, but planning is everything" - Dwight Eisenhower

Our planning is broken down as follows:

- Sprints (3 weeks)
- Plans (3 sprints)
- Seasons (6 months)
- Strategies (12 months)


Leadership is responsible for the big picture
Sprint
3 weeks
1
Plan
3 sprints
3
Season
6 months
6
Strategy
12 months
12
Teams are responsible for the detail

With engineers and teams responsbile mostly for Sprints and Plans, and leadership responsible for Seasons and Strategies.

We've found that this planning structure helps us maximize our ***learning*** while we do our planning. We're able to get feedback, deploy, find out what customers want and actually implement those things quickly and efficiently.

Created new ways to stay healthy

Before, we would let code bugs build up until the end of a code phase (the "code complete). We would then discover them, work on fixing them, rinse and repeat. This created a "roller coaster" of bugs, and as the number of bugs dropped, so did team morale as they did nothing but work on bug fixes instead of implementing new and fun features.

Now, we implement what we call a "bug cap". A bug cap is calculated by the following formula:

- `# of engineers x 5 = bug cap`

If a team's bug count exceeds the bug cap at the end of a sprint, they stop working on new features until they are back down under their cap. A version of paying down their debt as they go.

Shielding distractions

Teams have come up with their own way to provide focus and assist with an interrupt culture in the form of bugs and live-site incidents.

Teams will self-organize itself each sprint into two distinct teams: **Features (F team)** and **Shielding (L teams)**. The F-team works on commited features and the L-team deals with all live site issues and interruptions. The rotating cadence is established by the team and it allows for members to plan activities outside of work mcuh easier.

Four key takeaways

1. Take agile science seriously, but don't be overly prescriptive. Agile can become too strict, let it grow like a mindset or culture.
2. Stop celebrating activity and start celebrating results. Lines of code shouldn't outweigh functionality deployments.
3. You can't cheat shipping. Until you get into the mindset of updating services/products at the end of Sprints, you won't find all of the work that needs to be done. Shipping every Sprint helps establish a rhythm and cadence.
4. ***Build the culture you want and you'll get the behavior you're looking for***

Aaron is the PM working on the Azure DevOps team.