

# How Quality is Integrated into Agile Development and Management Processes

3/27/2024

# Intros

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## **Jim Peer** Senior Director of the Paychex Enterprise Program Office

Jim has over 25 years of experience in Information Technology holding positions in all aspects of software development.

He led Paychex from Waterfall to Agile Software Development.

Jim ensures that Paychex has a full product roadmap and ensures that all 206 agile teams are executing on projects according to Paychex standards.

## **Greg Kauffman** Senior Manager of the Paychex Enterprise Program Office

Greg has over 20 years of experience in IT, across multiple industries with many roles in software development, with focus on Project and Program Management.

He was a crucial part of standing up agile, as the original pilot Enterprise Scrummaster and Agile Project Manager at Paychex.

Greg manages the project office and is responsible for project management and agile processes, guidance, tooling and standards for Paychex's Enterprise Program Office.

Our Presentation is a set of our opinions, and doesn't represent the opinion of Paychex, Inc. We are not Agile Instructors.

# Agenda and Goals

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**Goal:** To get you thinking about how Agile concepts can spark ideas to improve quality in your world

**Agenda:**

- What is Agile?
- How is quality built into Agile naturally
- Agile concepts of focus for quality
- Examples from Paychex
- Questions and Collaboration

# What is Agile

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There are several approaches to building software. Agile and Waterfall are the most common.

As of December 2023, 71% of IT Companies use Agile.

Agile is an approach to project management that leans heavily on short time frames, adaptability, and iteration.

Paychex Switched to Agile in 2014 to be more iterative, more adaptable to changing technology and customer needs, decrease time to market and to increase quality, which we have achieved.

# How Quality is Built into Agile

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The Agile framework improves the quality of software by enabling frequent feedback, continuous improvement and quick responses to change.

Agile aims to bring obstacles and opportunities to the surface quicker, enabling more informed decisions to be made earlier.

The synchronized and cohesive approach of agile empowers an agile team to achieve goals and deliver high-quality results efficiently.

Agile can be quickly scaled to spread the quality gains, and provide consistent value.

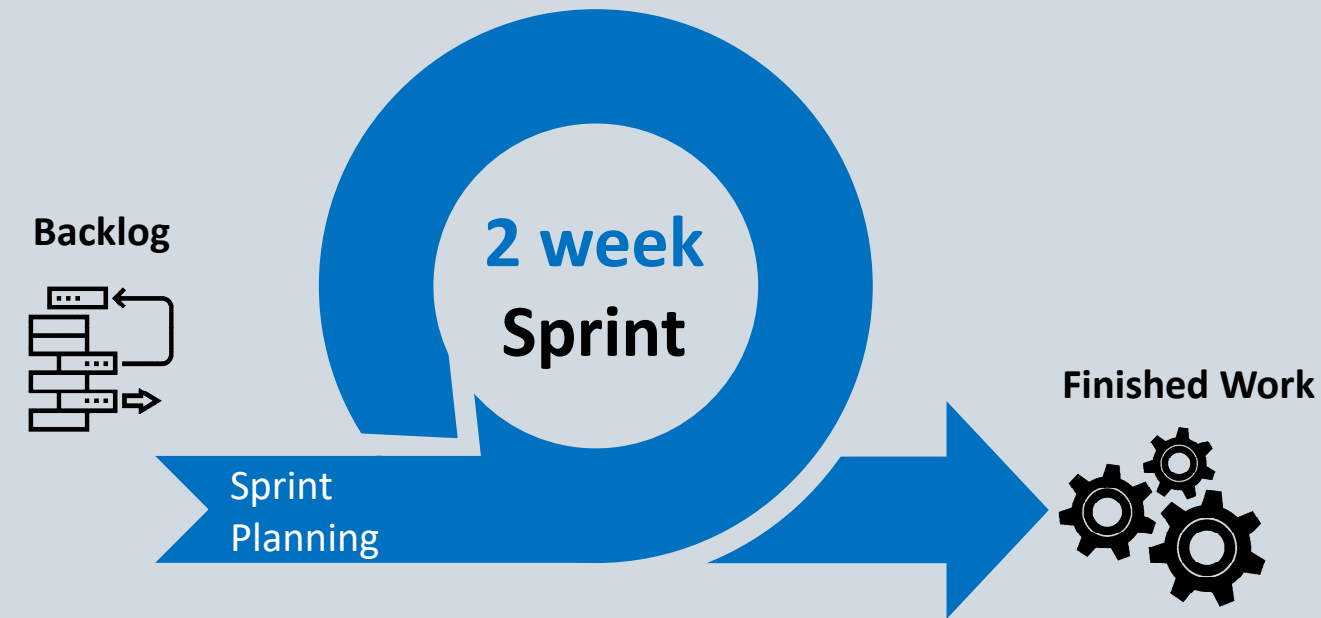


# Foundation

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- Agile Team – 7 people
- Team Gizmo
- 2 week sprints (iterations)
- Sprints are consistent in length – start on Wednesday, end 2 weeks later EOD Tuesday

# Prioritized Backlog and Sprint Planning



## Prioritized Backlog

- Well defined work
- **Definition of Ready** before teams starts
- Backlog of stories (small chunks of work) prioritized by Product, collaborating with team and stakeholders.
- **Quality Enabler:** Clarity of work, reduces churn and context switching during the sprint, resulting in higher quality on the highest priority things

## Sprint Planning

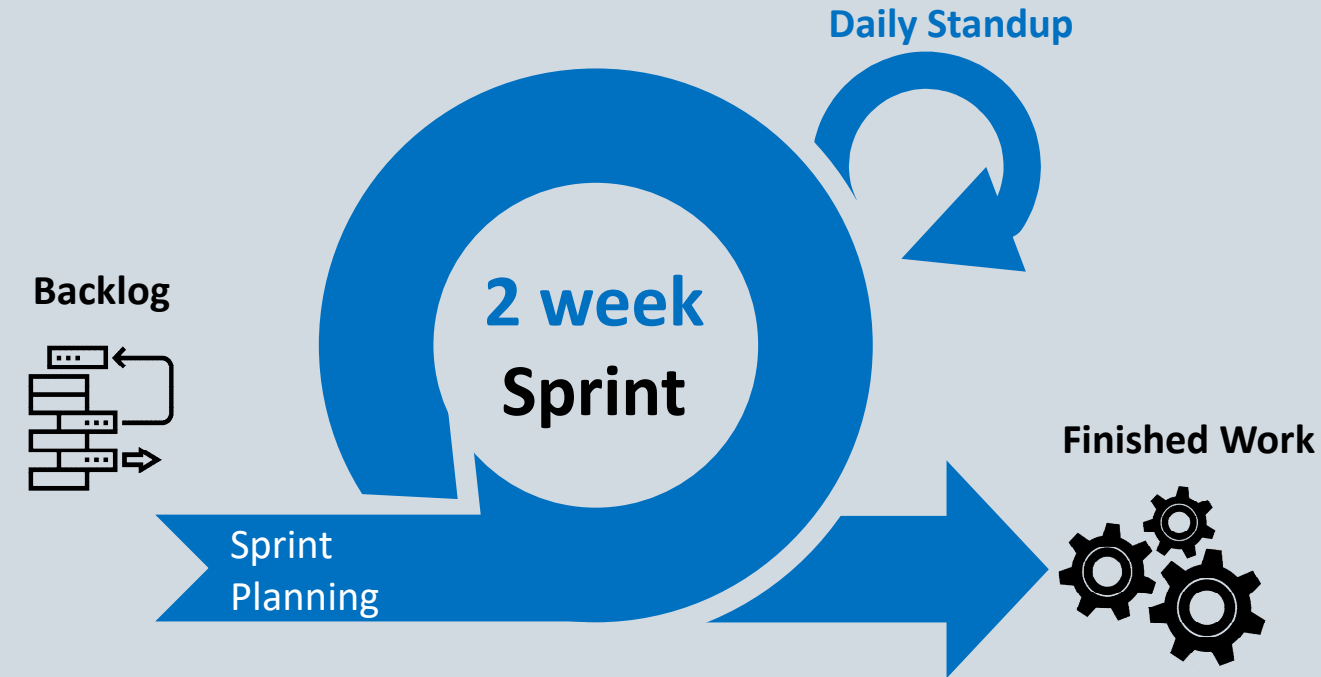
- The team plans out the work and commits to what they can complete in the sprint.
- **Quality Enabler:** Realistic amount of work, prevents overextending team, burnout.

# Daily Standup

- 10-15 minutes daily
- Common approach; Each Team member - What did you accomplished yesterday, what you will accomplish today, blockers or things you need

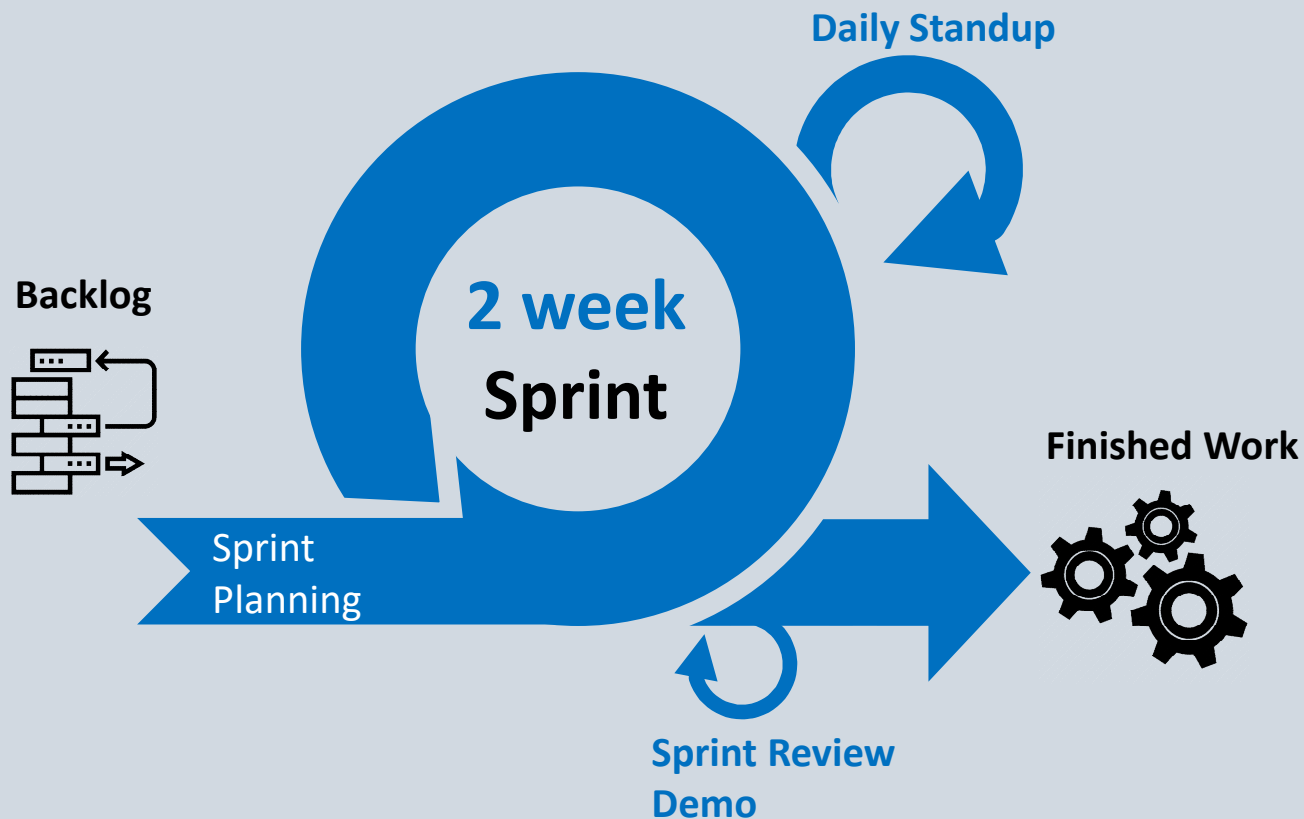
## Quality Enabler

- Brings issues, blockers, challenges, opportunities to the surface daily
- Enables the team to understand current state and to adjust as a team, and remove blockers quickly
- Empowers the team, the people that know the problems and nuances best, to solve the problem, or escalate
- Optimizes how the team spends their time, and ensuring they are working on the top priorities





# Testing

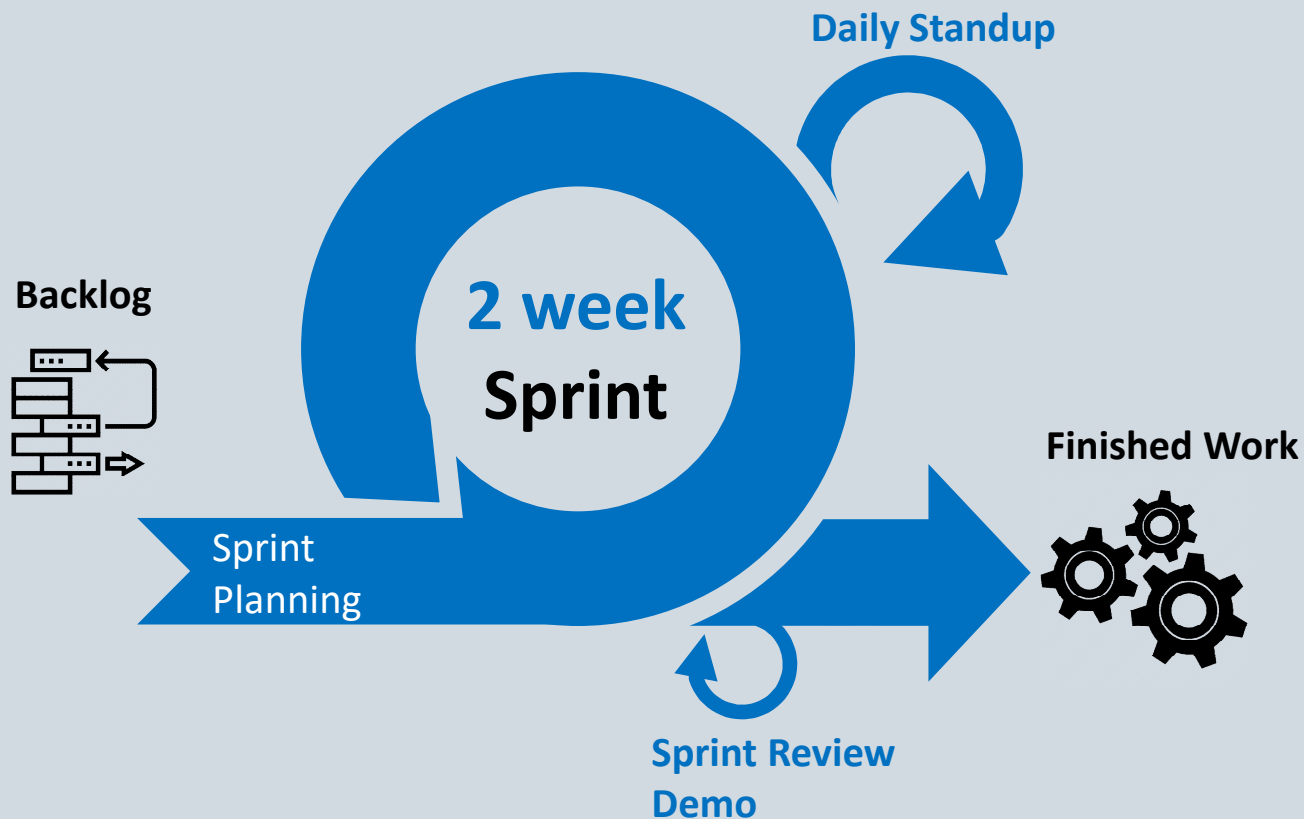


- Iterative Testing brings issues to the surface earlier
- Automated testing enables continuous testing and earlier understanding if issues arise
- Iterative Performance testing enables tracking a quality experience
- Defects Tracked
- Expected to find defects, Agile helps to bring it to the surface quicker

## Quality Enabler:

- Drives quality in increasing the likelihood that issues are discovered internally, and not by users
- Puts a team, a product owner and company in a position to make informed decisions about the quality of a product throughout the lifecycle

# Sprint Review and Demo



## Sprint Review:

- At the end of the sprint, accomplishments, what was completed (done), what's carrying over, and how much of it is carrying over.
- **Definition of Done** for a story is so crucial. Paychex has global standards for this, so when 1 of our 200+ agile teams says something is done, it is. Developed, Tested, Automated tests updated, product signed off.
- Signoff of work by Product is a quality gate

## Demo

- Presenting completed work from the sprint to collect feedback
- “Now that I see it...”
- Iterative checkpoint

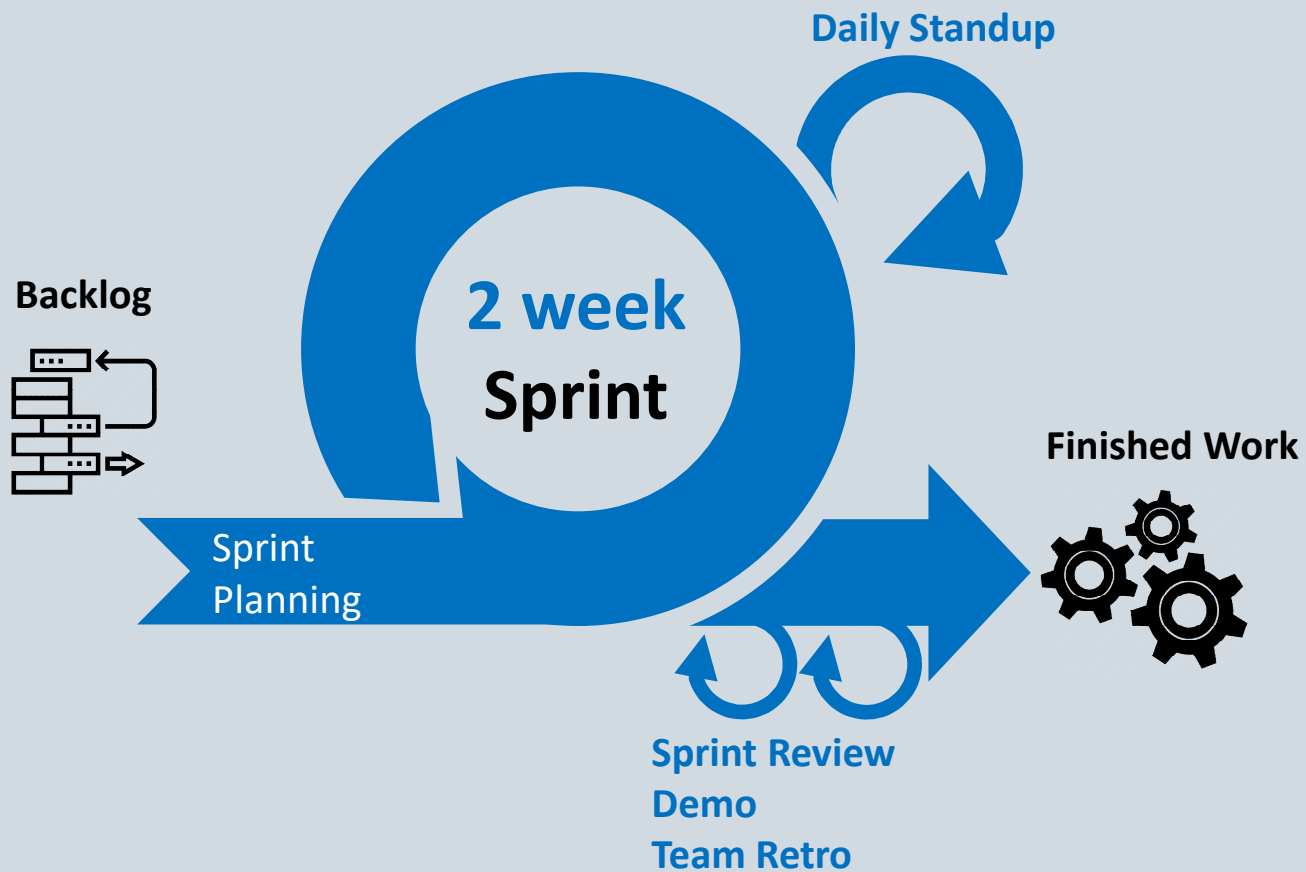
**Quality Enabler:** Iterative reviews and quality checkpoints enable a more polished product

# Definition of Ready to Release

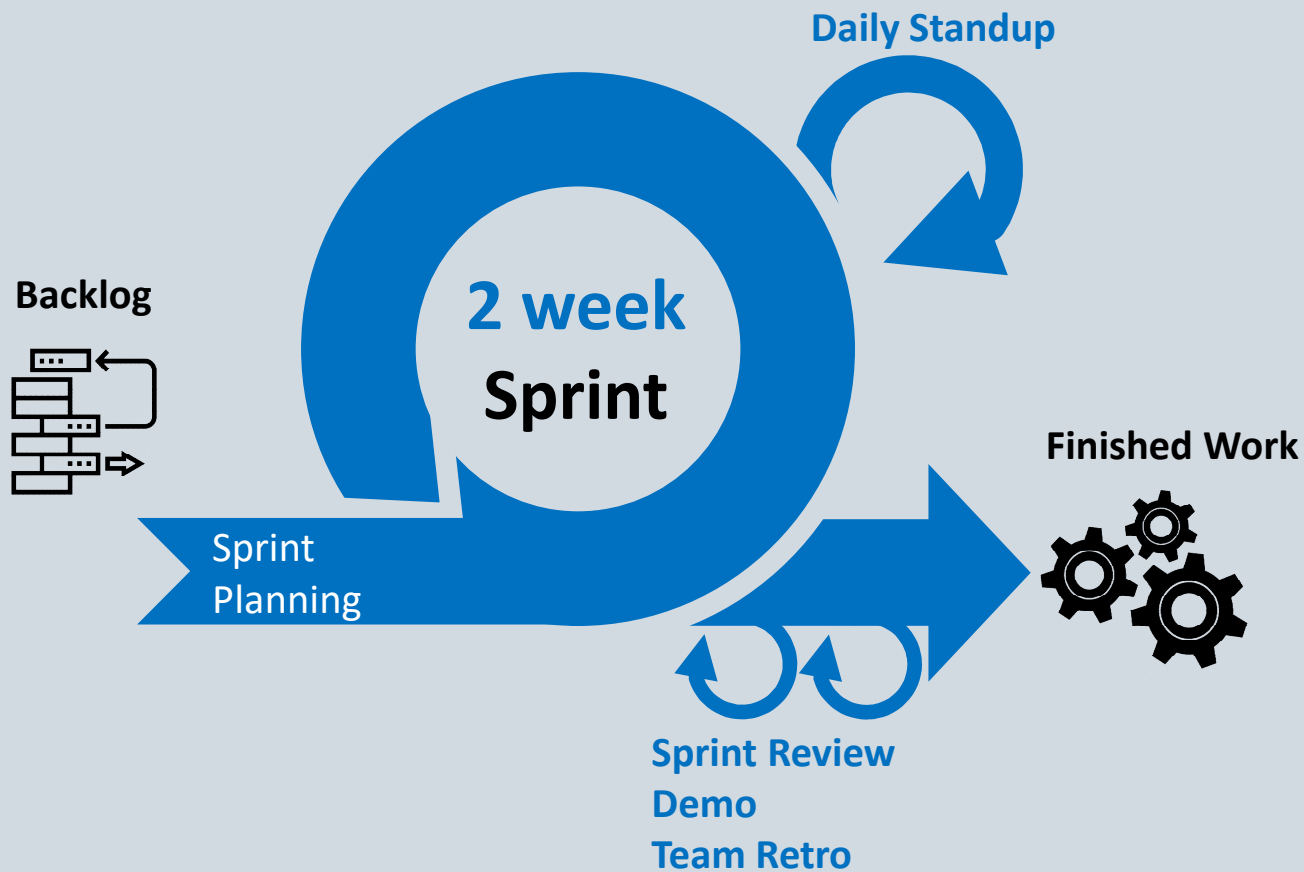
- Quality criteria that must be met prior to releasing code, or a feature
- Automation tests are updated
- Product, IT and others must sign off on the deliverable

## Quality enabler

- A consistent company wide definition ensures consistent quality is delivered to production, and that releases with quality issues are not released



# Team Retrospectives



- Team only, no managers or stakeholders
- The team identifies and prioritizes a few areas to improve, and then identify how we will measure if those improvements work
- Common underlying theme of what went well, where do we have opportunities, where are we going to invest our time
- Culture of quality, inspect and adapt

**Quality Enabler:** Empowers the people doing the work, to adjust and tune the process, to increase the quality of the team and the deliverables the team produces

# Example of Two Teams and Quality

## Team Gizmo

2 week sprints

7 defects found & 9 closed

1 Defect escaped to Production

6 weeks total



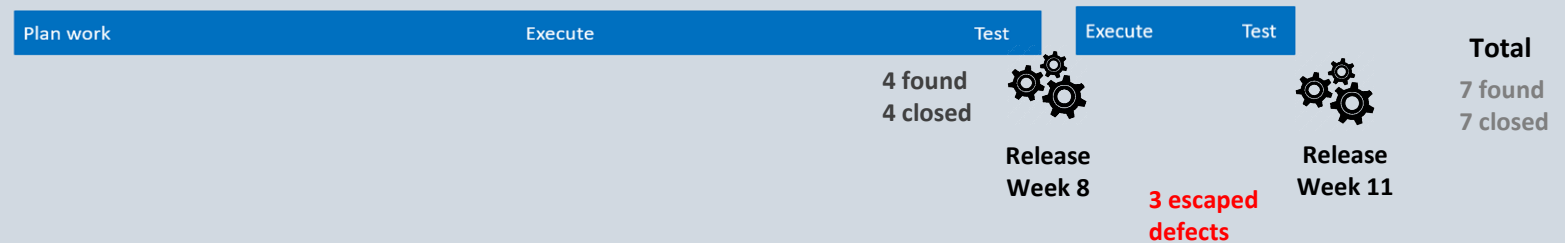
## Team Threat Level Midnight

Waterfall

7 defects found & 6 closed

3 Defects escaped to Production

11 weeks total



# Paychex Measurements

## Agile Health Data

Allows us to see if a team has indicators of being unhealthy or struggling.

Team health issues can result in quality issues.

## Team Resource Data

Help to see if the team is missing key resources or has the potential to burn out.

## Execution Data

Directly track Defect count, and other items that can impact quality.

### Agility Health Data

### Team Resource Data

### Execution Data

Stakeholder Confidence	Team Score	Triangle Score	Team Stability	SM Alloc	PO Alloc	SL Alloc	Open Dev/Test	New Dev/Test	OT %	Defect Count	Story CtoC %	Points CtoC %	Backlog Readiness	Project Readiness	High Performing
82	79	78	93%	0.00	-0.50	0.00	0	4	2%	0.0	91%	107%	2.1	1.2	
94	85	88	100%	0.50	0.50	1.00	0	0	0%	0.0	81%	82%	1.0	0.4	
90	82	83	100%	0.50	0.50	1.00	0	1	2%	0.0	100%	103%	1.6	0.6	★
95	83	85	100%	0.50	0.50	1.00	0	0	2%	0.0	70%	70%	9.1	2.1	
94	89	92	100%	0.50	0.50	1.00	0	0	4%	0.0	100%	101%	0.1	0.1	★
72	78	81	90%	0.50	0.50	1.00	0	0	3%	0.0	93%	106%	1.8	1.2	
71	79	84	90%	0.50	0.50	1.00	0	1	1%	0.0	99%	189%	0.9		
81	82	52	71%	0.50	0.00	1.00	0	2	0%	0.0	99%	113%	2.1		
82	78	76		0.50	0.50	1.00	0			0.0	92%	98%	1.9	1.9	

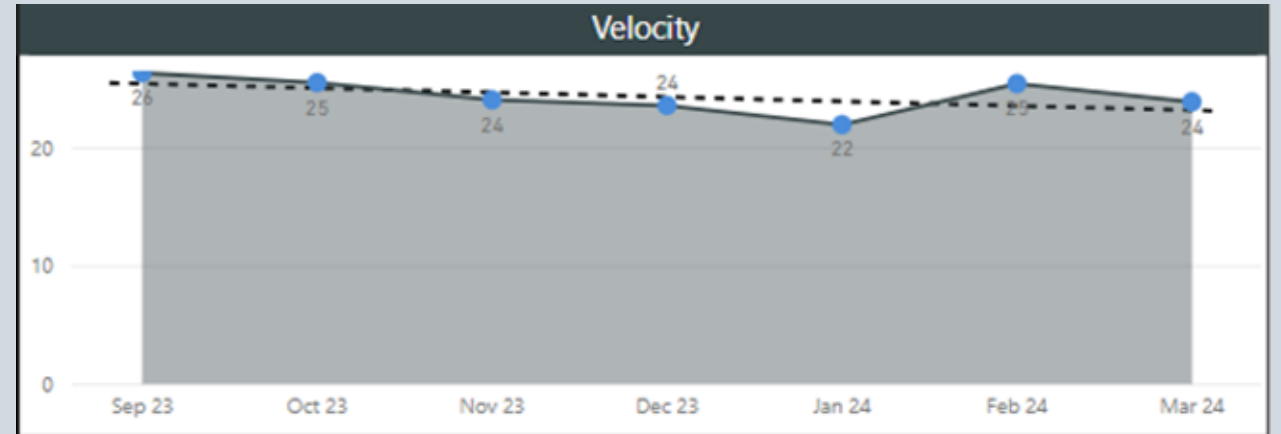
# Trending Data at Paychex

## Velocity

Units of work completed in a sprint or iteration

Helps to give us an indication of team output

A reduction in Velocity may be caused by quality issues the team needs to spend time on

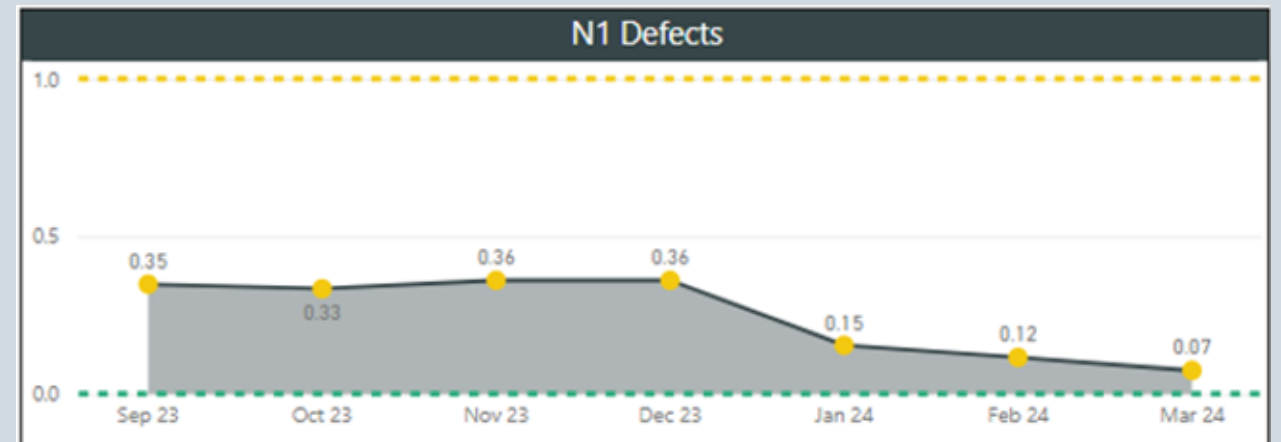


## Escaped Defects

Avg number of escaped defects per sprint

Changes were made in Q4 2024 to our process with the goal of reducing defects and increasing quality.

Because we track the data consistently enterprise wide, we were able to see if the if our change worked. And It did!



# How has quality impacted culture at Paychex

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Agile in itself is a mindset and culture.

Its greatly improved culture by giving teams clarity, a sense of ownership and empowerment.

Our data shows higher quality deliverables, faster, and with higher team morale and less overtime.



# Other Applications of Agile

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## **Greg's Wedding**

- We planned our wedding in 6 weeks, using 1 week sprints, for 250 guests
- Included a rehearsal dinner, a dinner and event for out of town guests, that everyone came to
- We used a board with To do, In progress, Done, in our guest bedroom
- Greg was not the Product Owner
- Once we went to agile, the process became so much smoother

## **Golf Tournament**

- I reuse a board every year for planning a smaller golf tournament for 50 golfers and 100 people at a picnic after

## **Events**

- Using agile to plan Agile Connect 2024 in September

# Summary

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The Agile Mindset is both mechanical and cultural. **It's a Mindset.**

The Agile approach of winning iteratively, enables quality by bringing defects, issues, and problems to the surface quicker.

Standards for Definition of Ready, Definition of Done, and Releases can further boost quality in Agile and beyond.

# Questions and Collaboration