微软全球研发团队在构建统一工程体系过程中的云端架构设计转型实践

Architecting for the Cloud in Creating One Engineering System at Microsoft

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Visual Studio

About Me:

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Product Owner, Visual Studio Cloud Services

>30 years software industry

>13 years Microsoft

2005-2010 led Agile Transformation

- Agile Conference 2014 keynote

2010…from Agile to DevOps

- Rugged DevOps Connect
- DevOps Enterprise Summit (#DOES15 & #DOES16)

@samguckenheimer

http://aka.ms/devops

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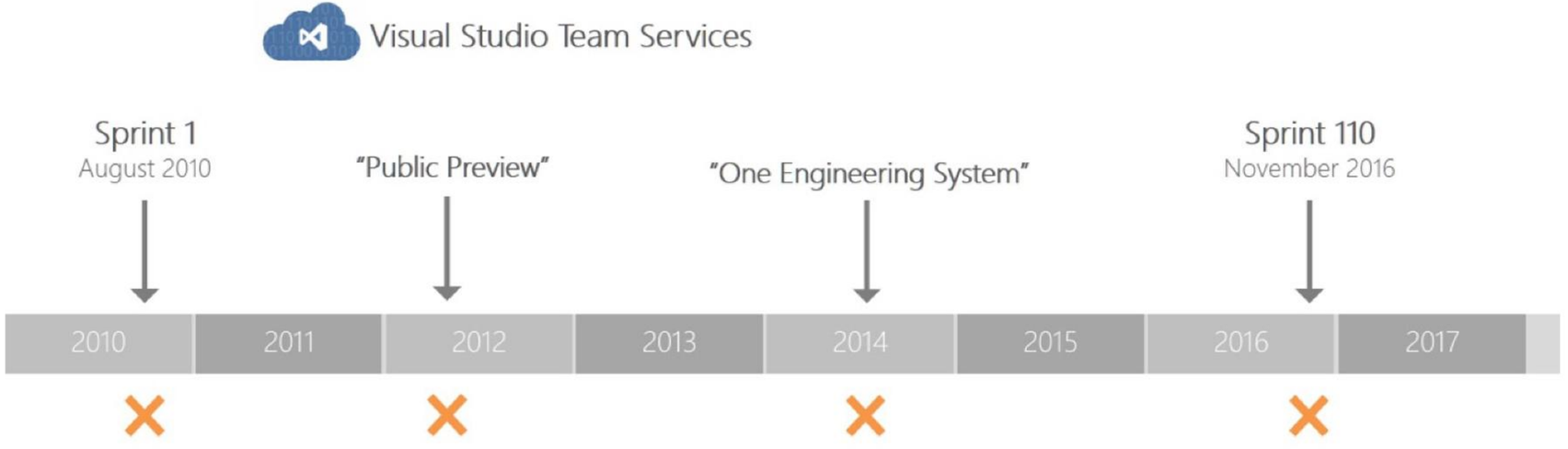
The Journey 微软的研发体系转型之旅



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微软"统一工程体系 (1ES)"的策略目标

Purpose of One Engineering System

If you want to go fast, go alone. If you want to go far, go together. (獨行快，眾行远)

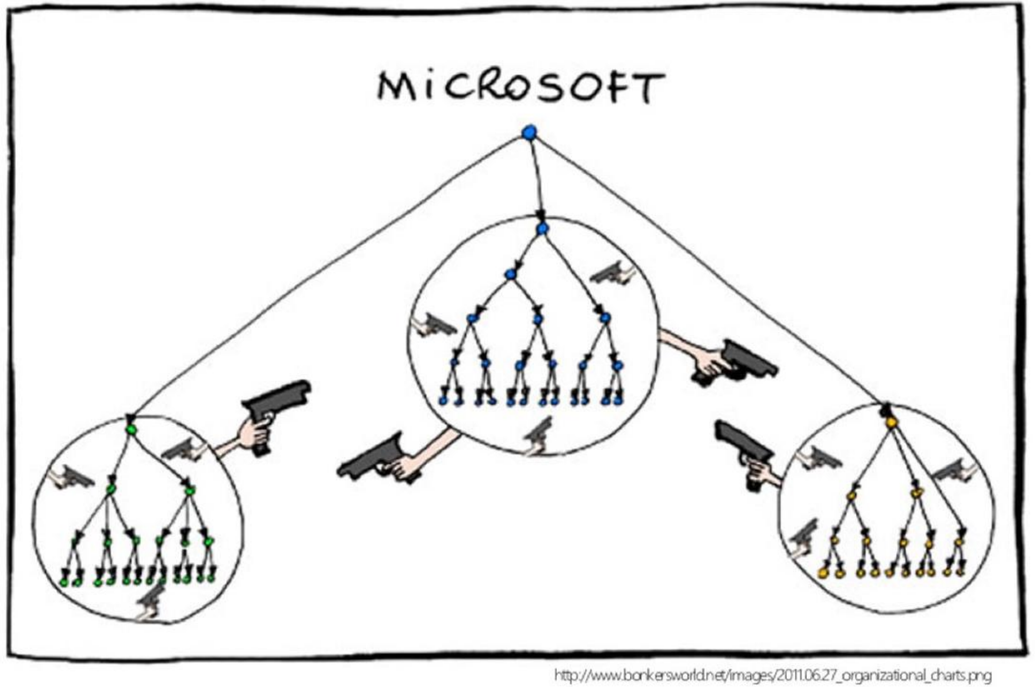
"为了交付客户在移动优先、云优先的世界中所需要的使用体验，我们将会把我们的工程过程现代化，与客户密切联系，讲求数据驱动，重视交付速度，并专注质量。" ~ Satya Nadella，微软公司首席执行官

Before 1ES（在进行统一工程体系构建之前）

Unintended consequence:

No reuse would go unpunished.

意料之外的后果：
各自为政



http://www.bonkersworld.net/images/2011.06.27_organizational_charts.png

An engineering north star...

...the source across the company is available to anyone

...any dev can offer improvements to anything in the company

...the IP the company has built up over the years is made of re-usable components

...anybody can find and potentially re-use components from anywhere else

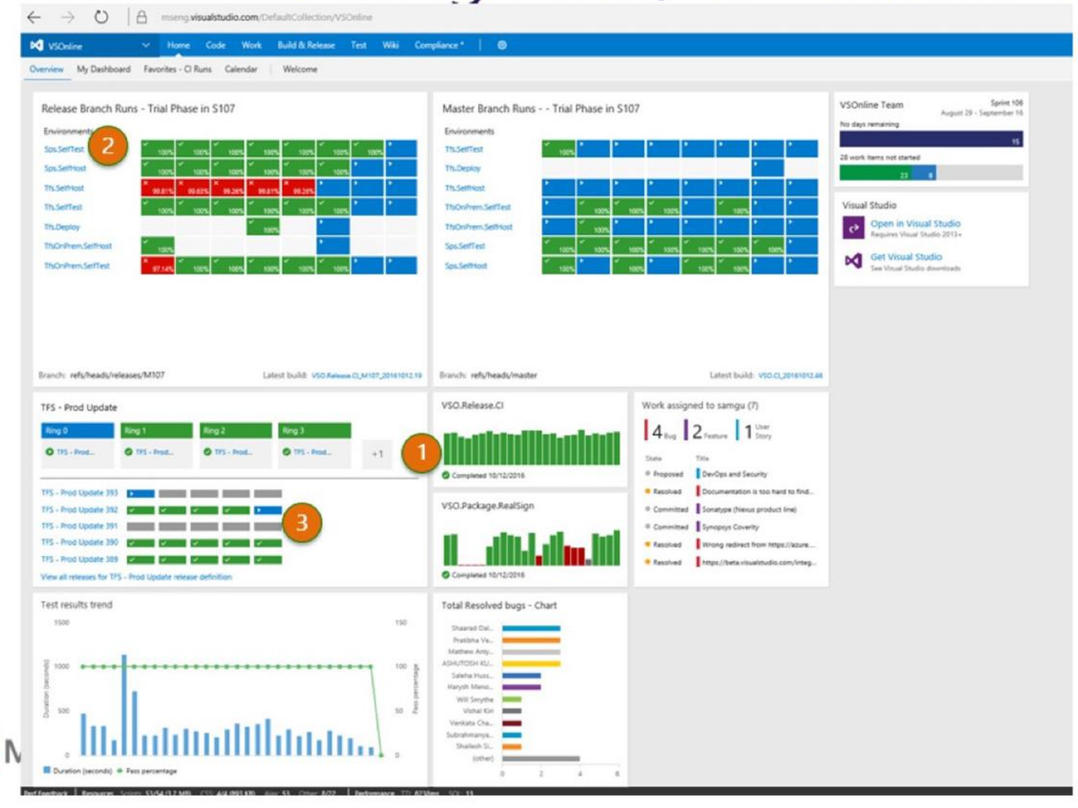
...devs are rewarded for creating popular components

...there is zero lag from when a dev makes a change & when the rest of the company sees it

... build and test time is directly proportional to the change made

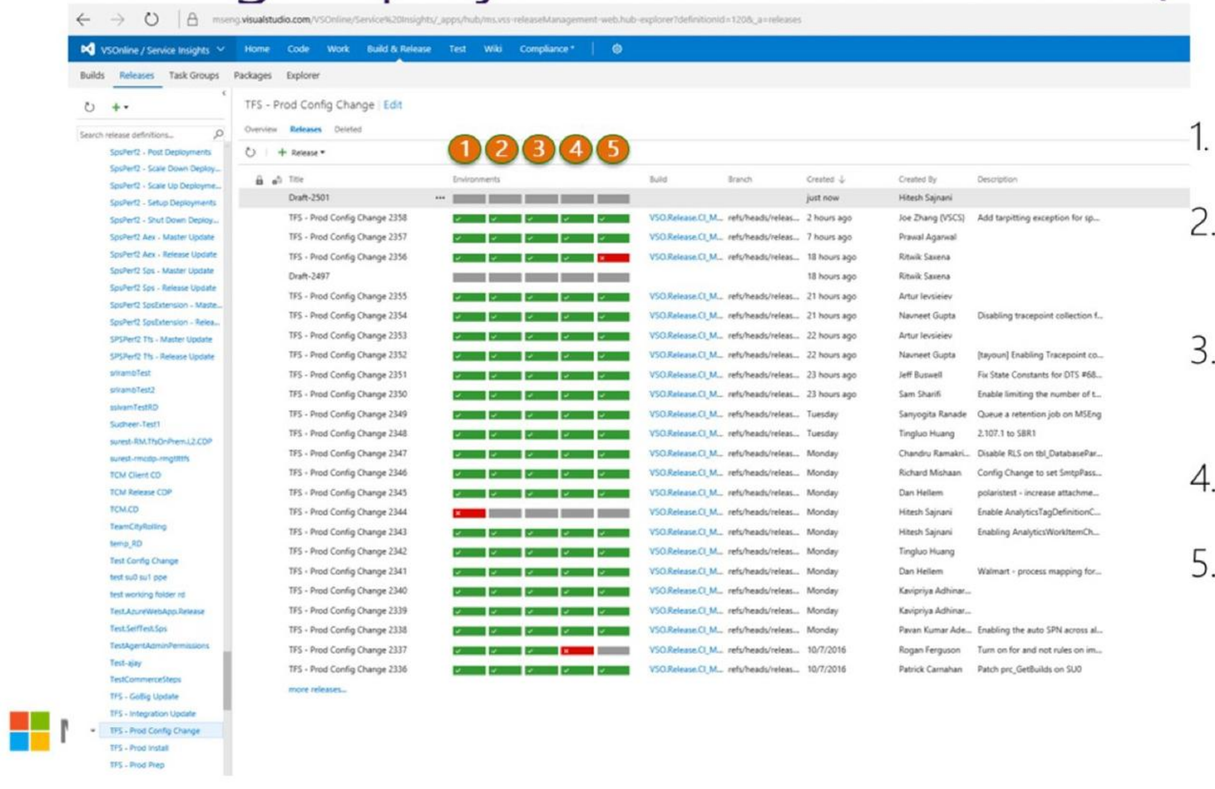
...devs can move to another team and already know how to work

Continuous Integration/Continuous Delivery



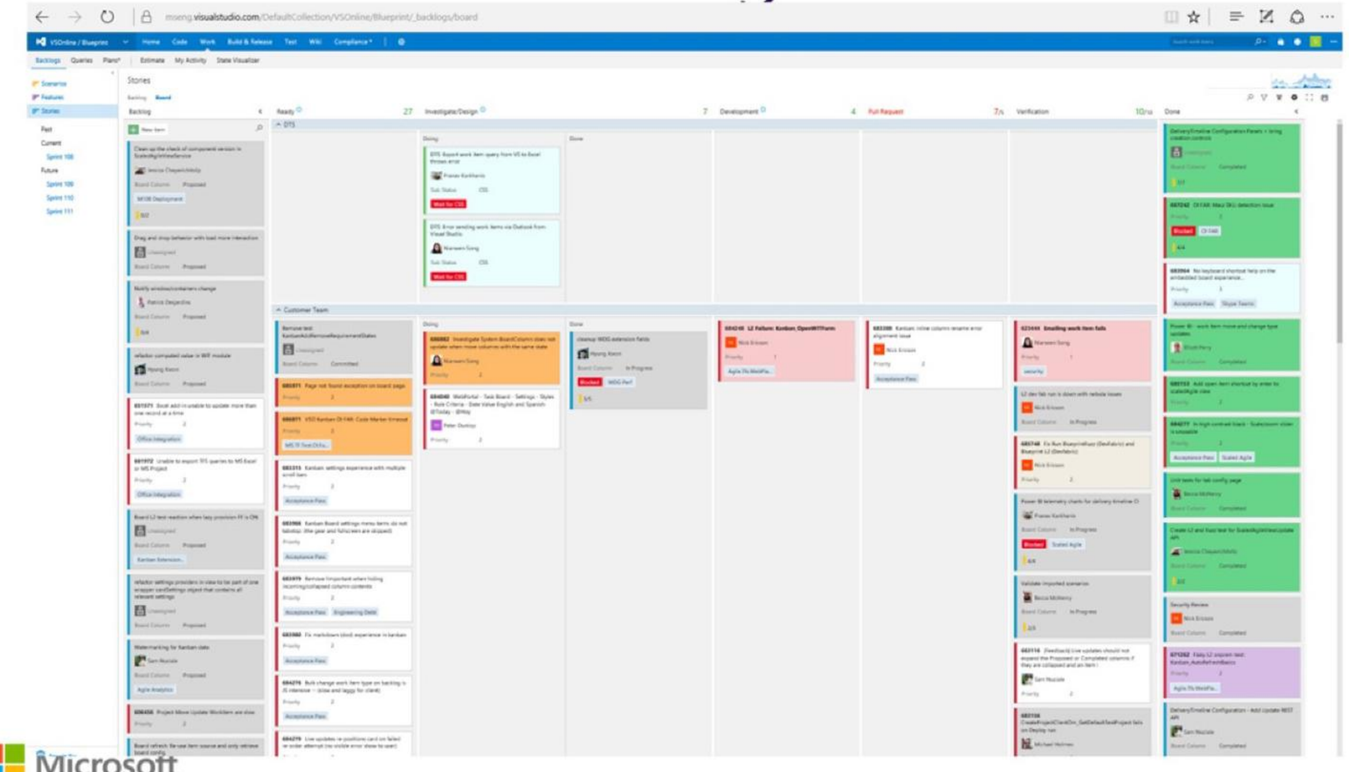
1. Continuous Integration builds on every commit to Master
2. Test runs triggered by CI_Build
3. Deployment across rings triggeredby tests (using exposure control)

Tracking Deployments to Production (5 Rings)



1. Canary (internal users)
2. Smallest external data center
3. Largest external data center
4. International data centers
5. All the rest

Kanban Board for Single Feature Crew



Defaults to current sprint

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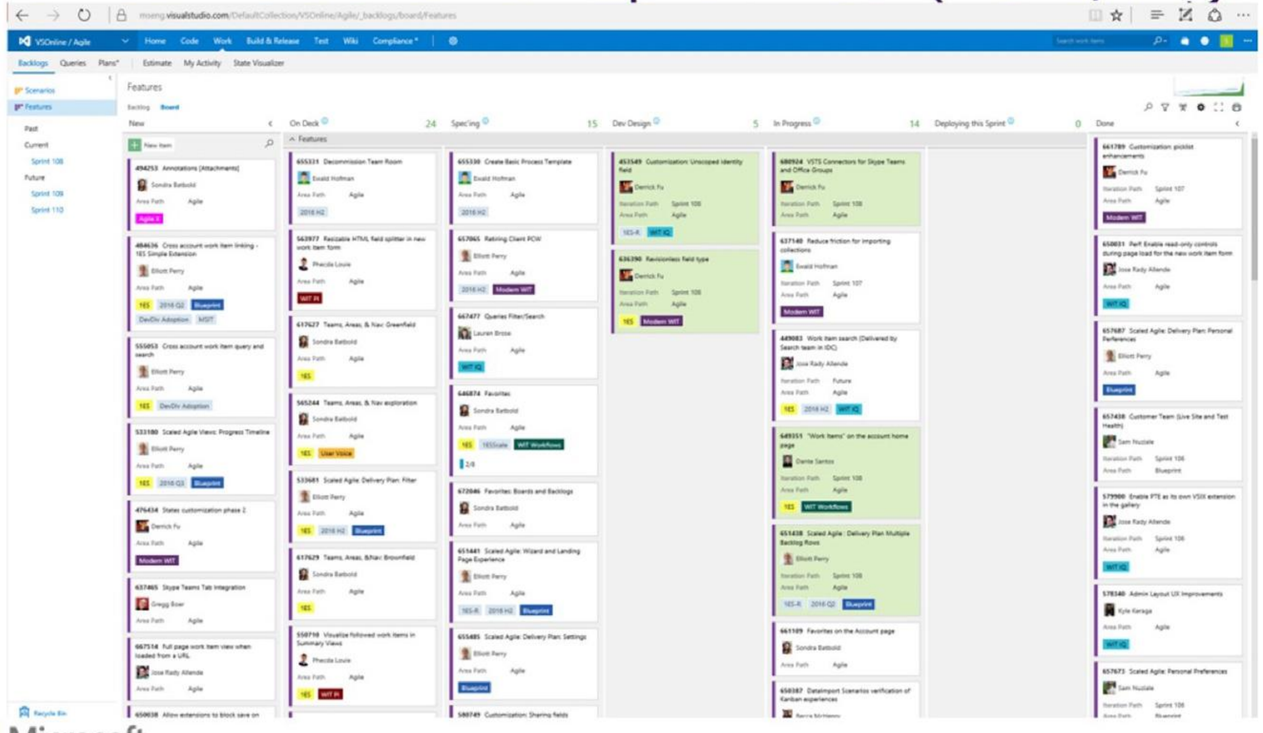
Kanban Board for Epic Area (here, Agile)



All of these boards are customizable (swimlanes, columns, filters, etc.)

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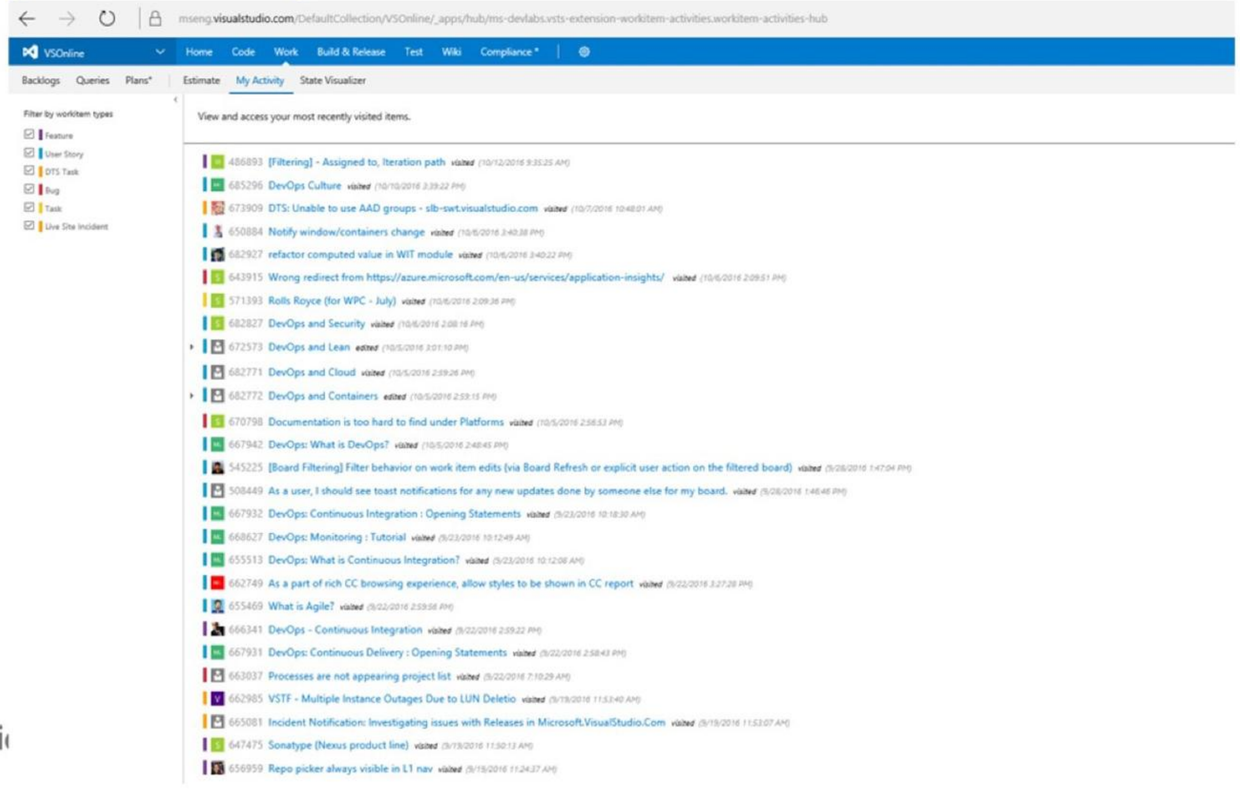
My activity



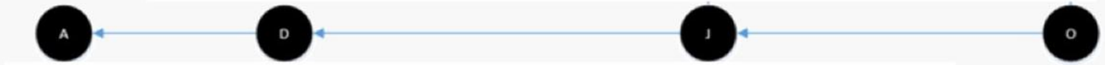
Mi

Tiny Continuous Merging

Everyone is on ONE main master branch

Git helps with lightweight topic branching

Code is fresh in your mind



Feature Flags

All code is deployed, but feature flags control exposure

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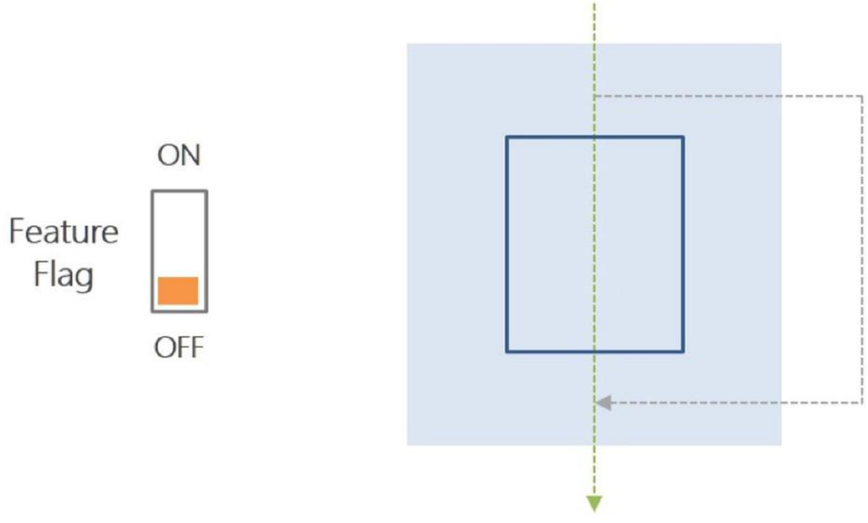

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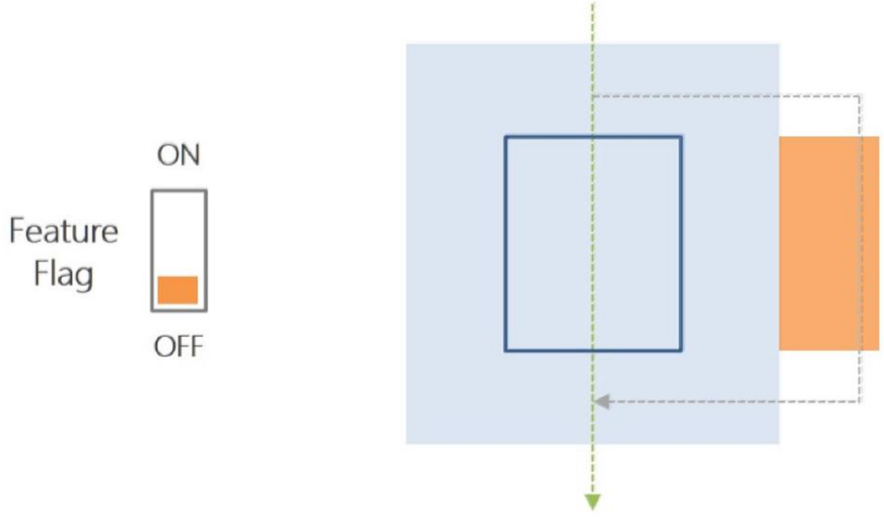

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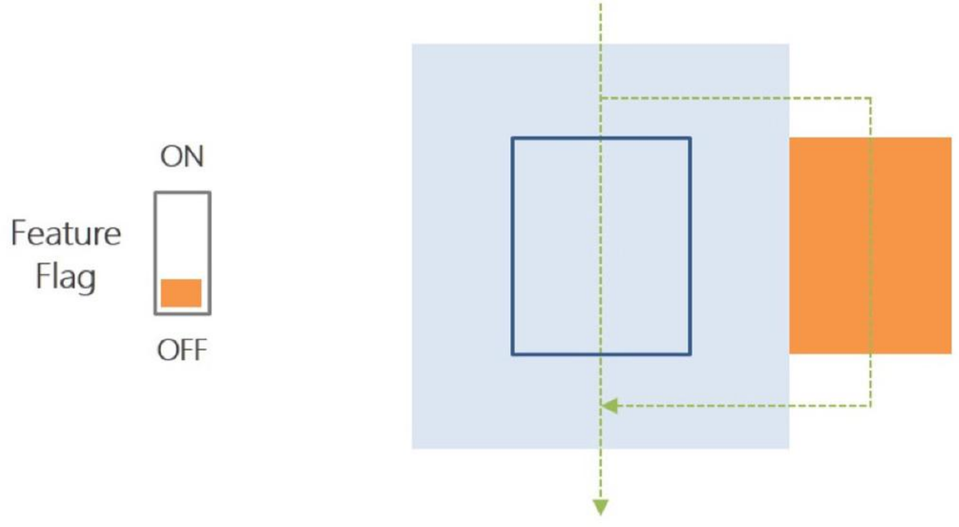

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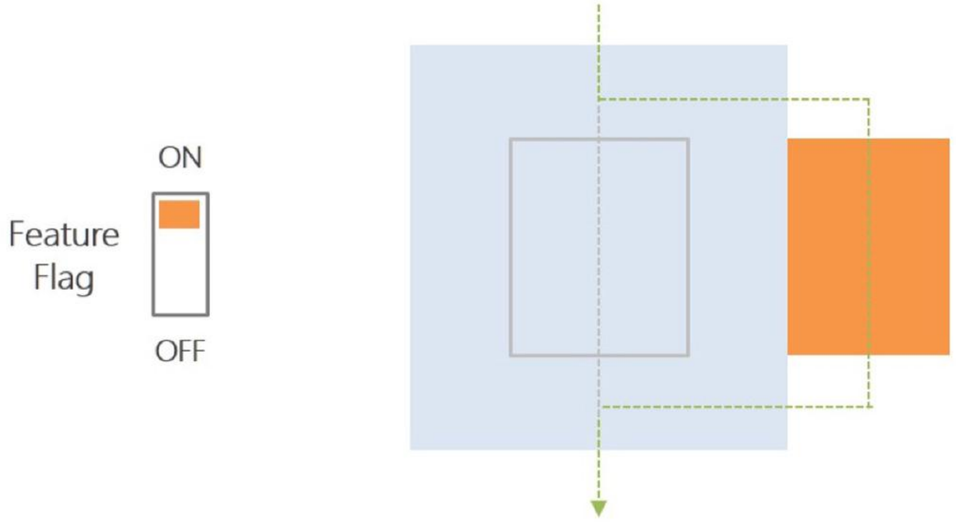

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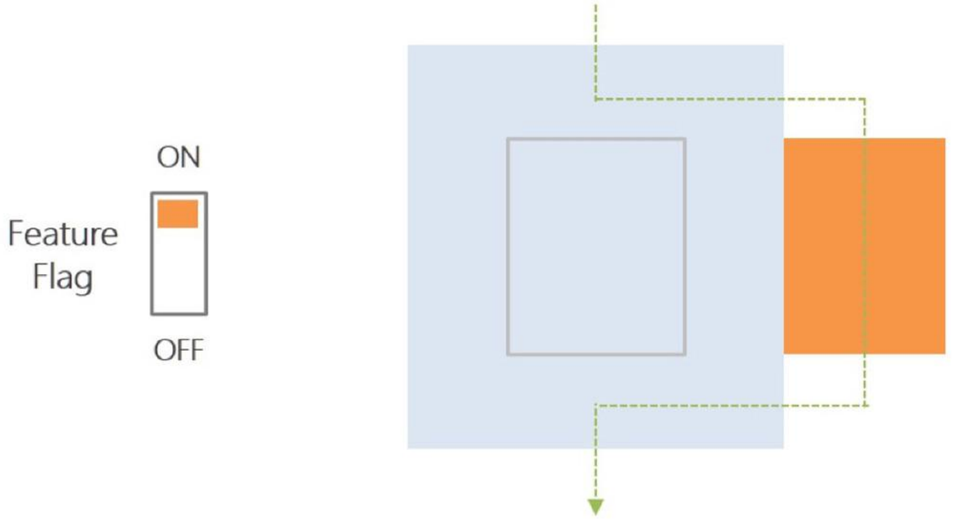

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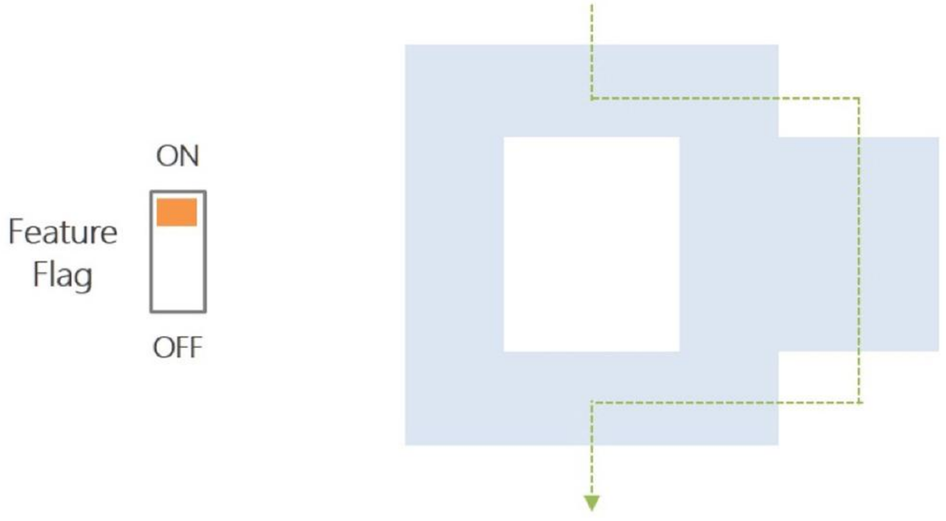

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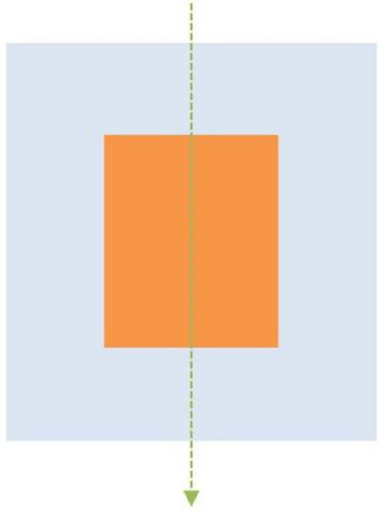

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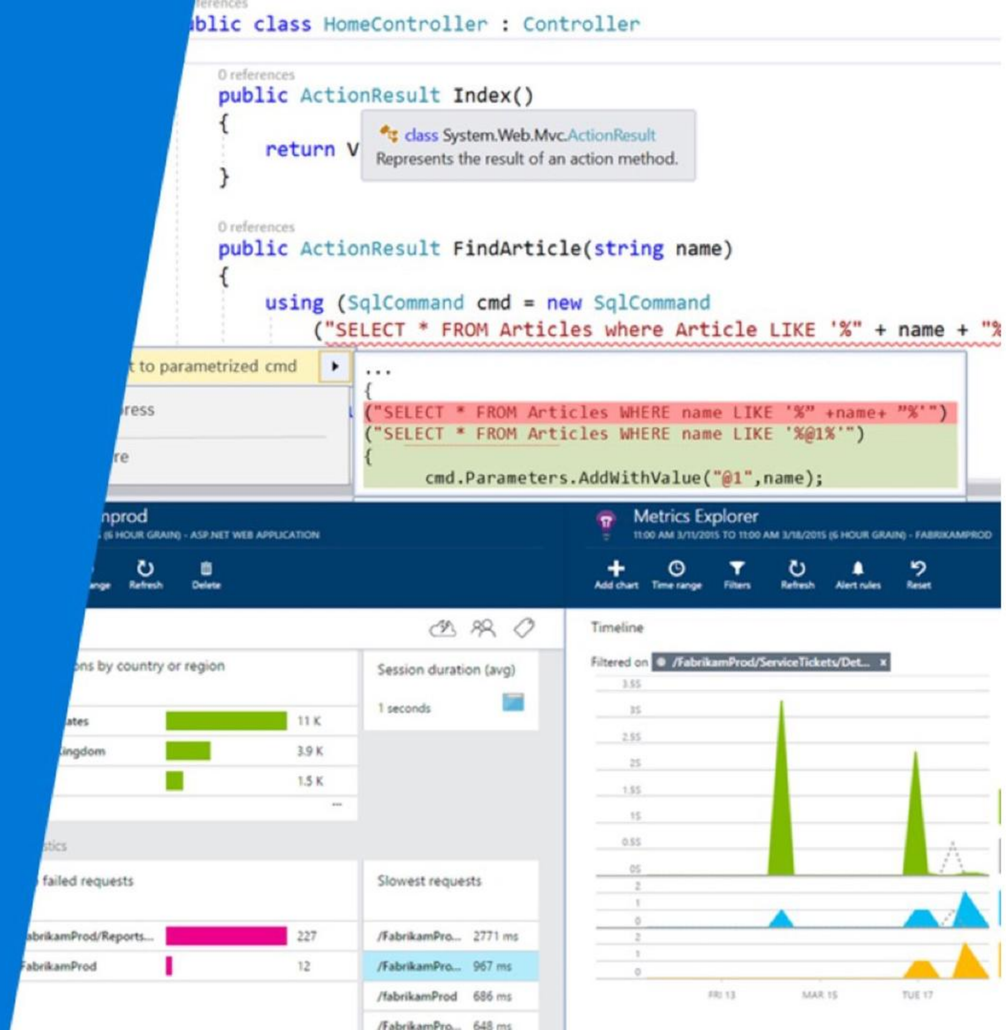
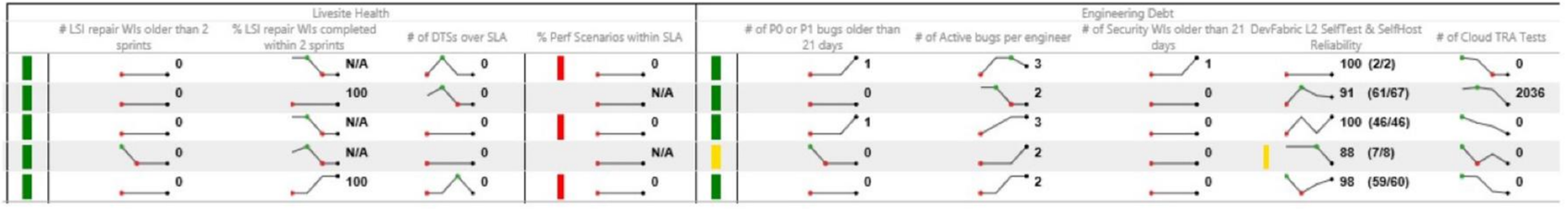
Evolving DevOps

Continuous Integration **+**
Real-time experiences **=**
Shift Left

Continuous data mining **+**
near real-time data **=**
Shift Right



Live Site Culture and Engineering



Live Site Health

Time to Detect
Time to Communicate
Time To Mitigate
Customer Impact
Incident prevention items
Aging live site problems
Customer support metrics
SLA per customer account
(SLA, MPI, top drivers)

Velocity

Time to build
Time to self test
Time to deploy
Time to learn
(Telemetry pipe)

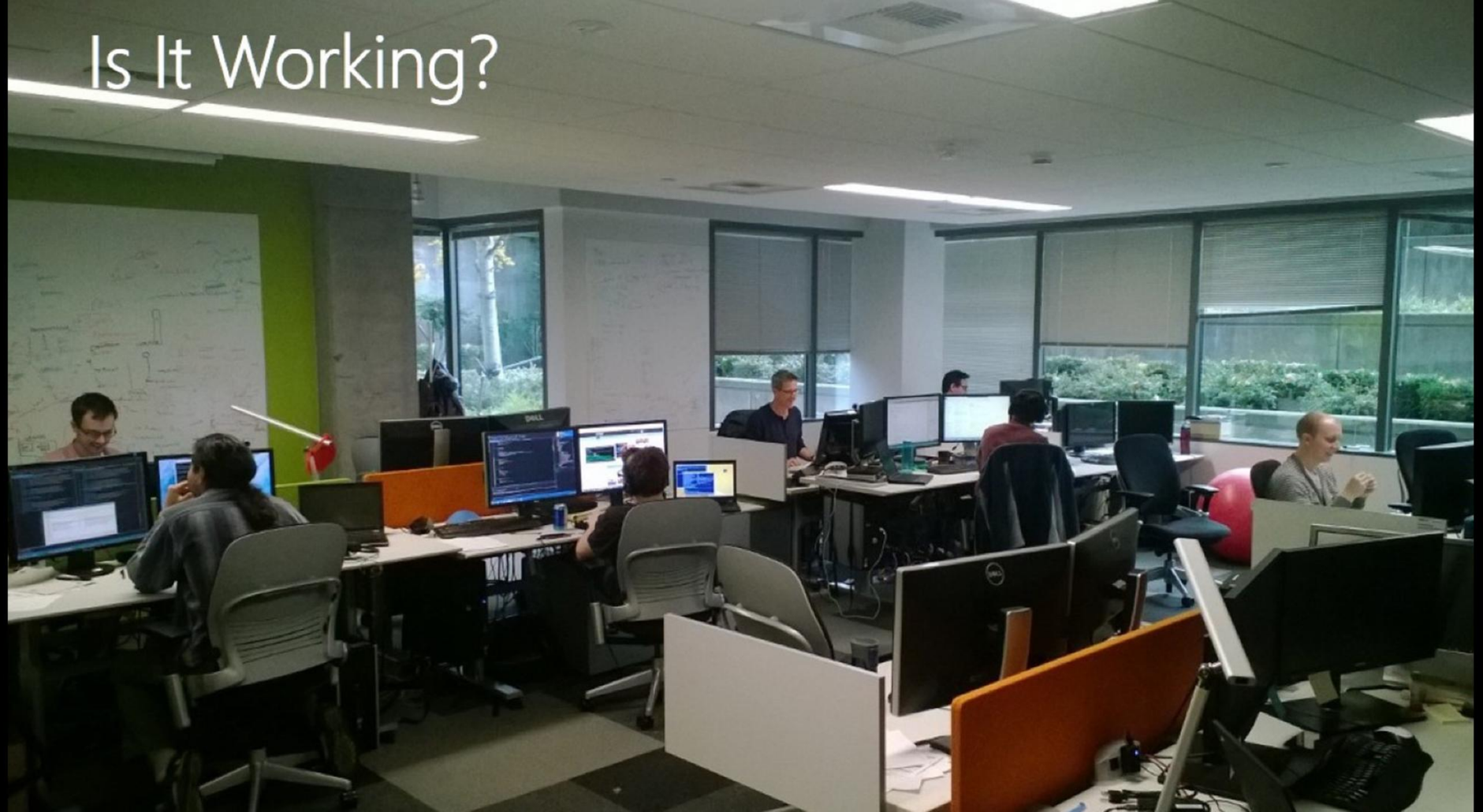
Engineering

Bug cap per engineer
Aging bugs in important categories
Pass rate & coverage by test level

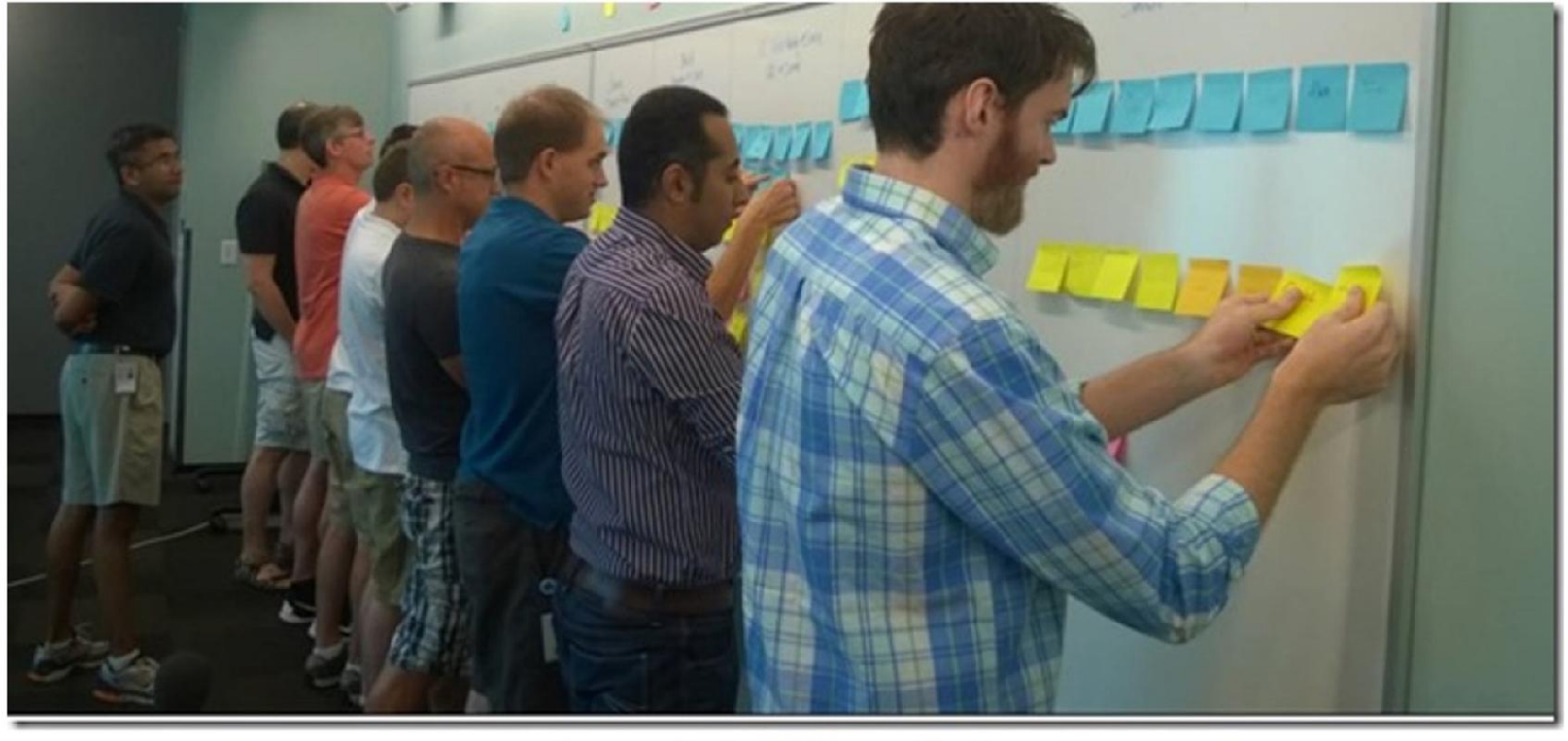
Usage

Acquisition
Engagement
Dedication
Churn
Feature usage

Is It Working?



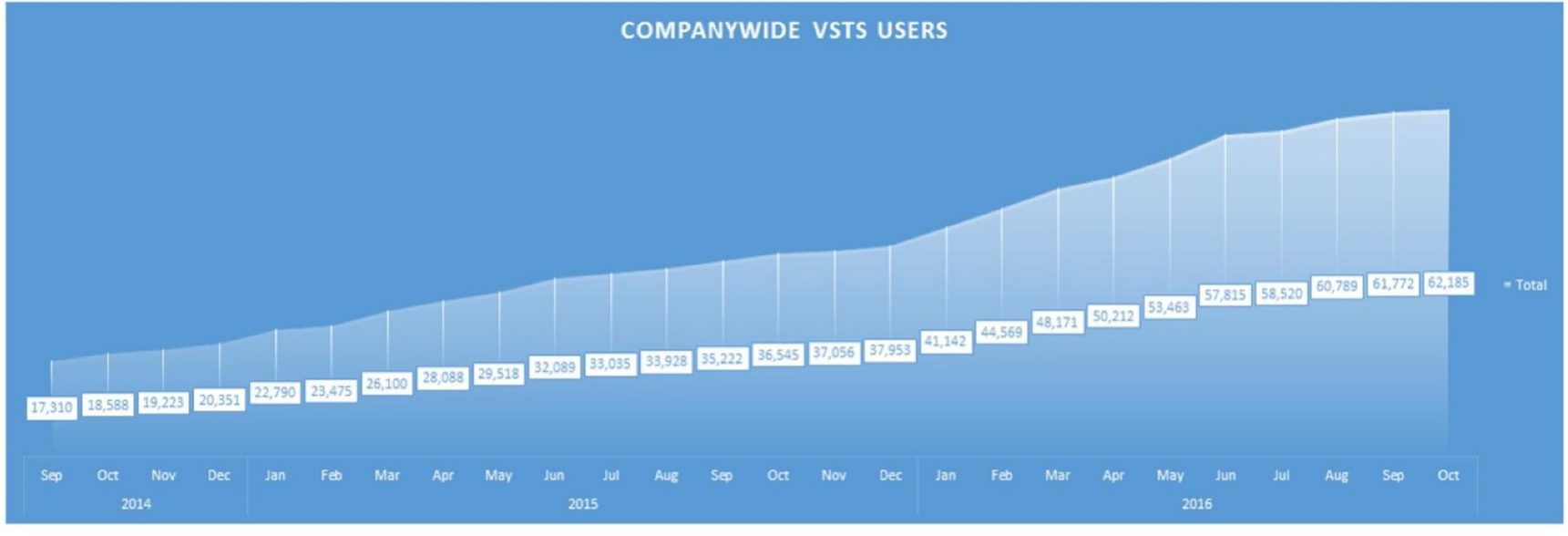
Self-forming teams



https://aka.ms/SelfFormingTeams

Is 1ES Working?

4x active user growth in 2 years to 62,000



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