



# Microsoft DevOps Transformation

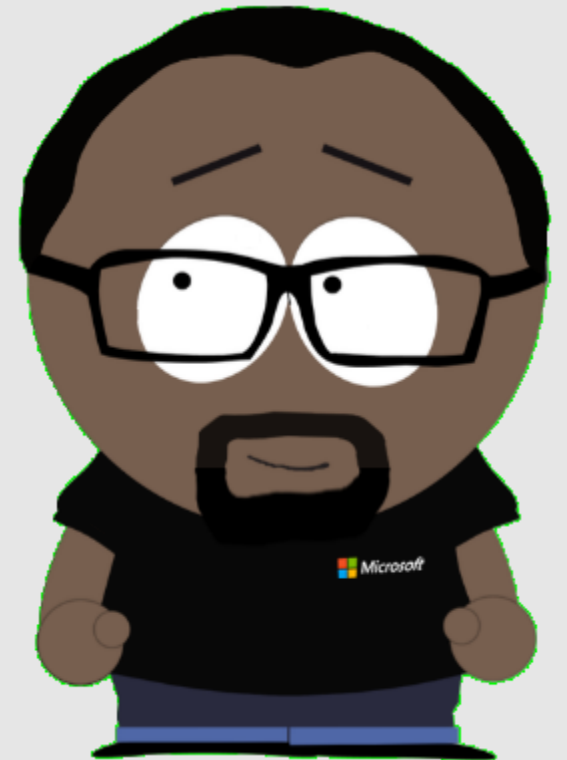
@DonovanBrown  
Principal DevOps Manager  
Microsoft



“DevOps is the union of people, process, and products to enable continuous delivery of value to our end users.”

- Donovan Brown

<http://bit.ly/WhatIs-DevOps>



**Donovan Brown**

@DonovanBrown

Principal DevOps Manager of the #LoECDA.  
@Microsoft for #VSTS and #Azure.

📍 Spring, TX

🌐 [DonovanBrown.com](http://DonovanBrown.com)

📅 Joined June 2009

**Donovan Brown**

@DonovanBrown

## DevOps before and after. :)

**Formula 1 Pit Stops 1950 & Today**

Observe how the art of the Pit Stop has evolved since 1950 Created by the channel CptainCanuck. Footage used taken from <https://www.youtube.com/watch?v=C...>  
[youtube.com](https://www.youtube.com/watch?v=C...)

5:00 PM - 4 Dec 2017

28 Retweets 36 Likes



💬 3 🔄 28 ❤️ 36 📺

**Donovan Brown** @DonovanBrown · 5 Dec 2017

Thanks for the comments they sparked a blog post!  
[donovanbrown.com/post/DevOps-be...](http://donovanbrown.com/post/DevOps-be...)

💬 🔄 ❤️ 3 📺



Add another Tweet



- 4 Dec 2017

Replying to @DonovanBrown

Not really though because there is a huge increase in people in the 2013 version. We need an F1 team that has robots that change the tyres when the car triggers a webhook by arriving.

💬 1 🔄 ❤️ 1 📺



- 5 Dec 2017

Right, thanks to "Enterprise DevOps", the 2013 version has seen great advances in tooling, the outcome of which is that it takes more people to deliver less functionality (they didn't refuel the car).

Sound familiar?

💬 2 🔄 ❤️ 📺

**Donovan Brown** @DonovanBrown · 5 Dec 2017

In all fairness, they changed all four tires instead of just two. So not less functionality but different. :)

💬 🔄 ❤️ 📺

Increase in number of people





# Automation



Shift-Left



Shift-Left



Shift-Left

**2013 MELBOURNE**



How we became agile and  
transformed a box  
software product into  
a service...

# The journey



TFS  
2005



TFS  
2008



TFS  
2010



TFS  
2012



TFS  
2013

TFS  
U1

TFS  
U2

TFS  
U3

TFS  
U4

TFS  
U5



TFS  
2015

Visual Studio

# Our roles



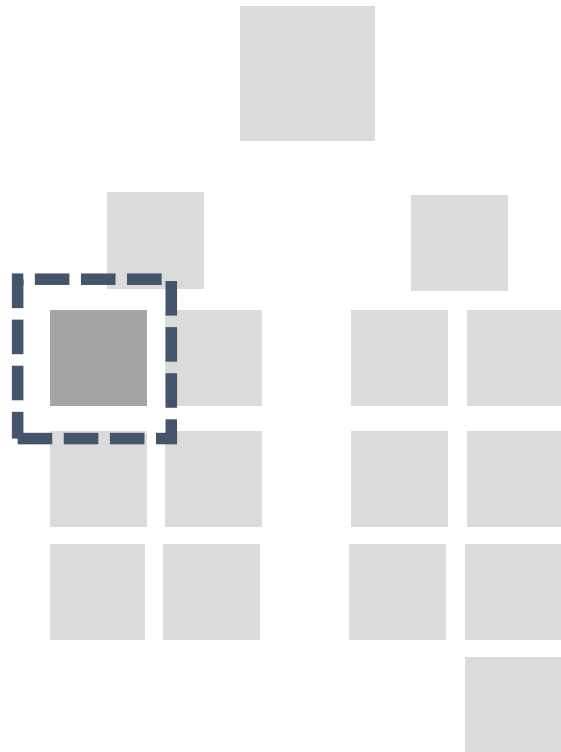
Program Manager – Responsible to ensure **we're building the right thing.**



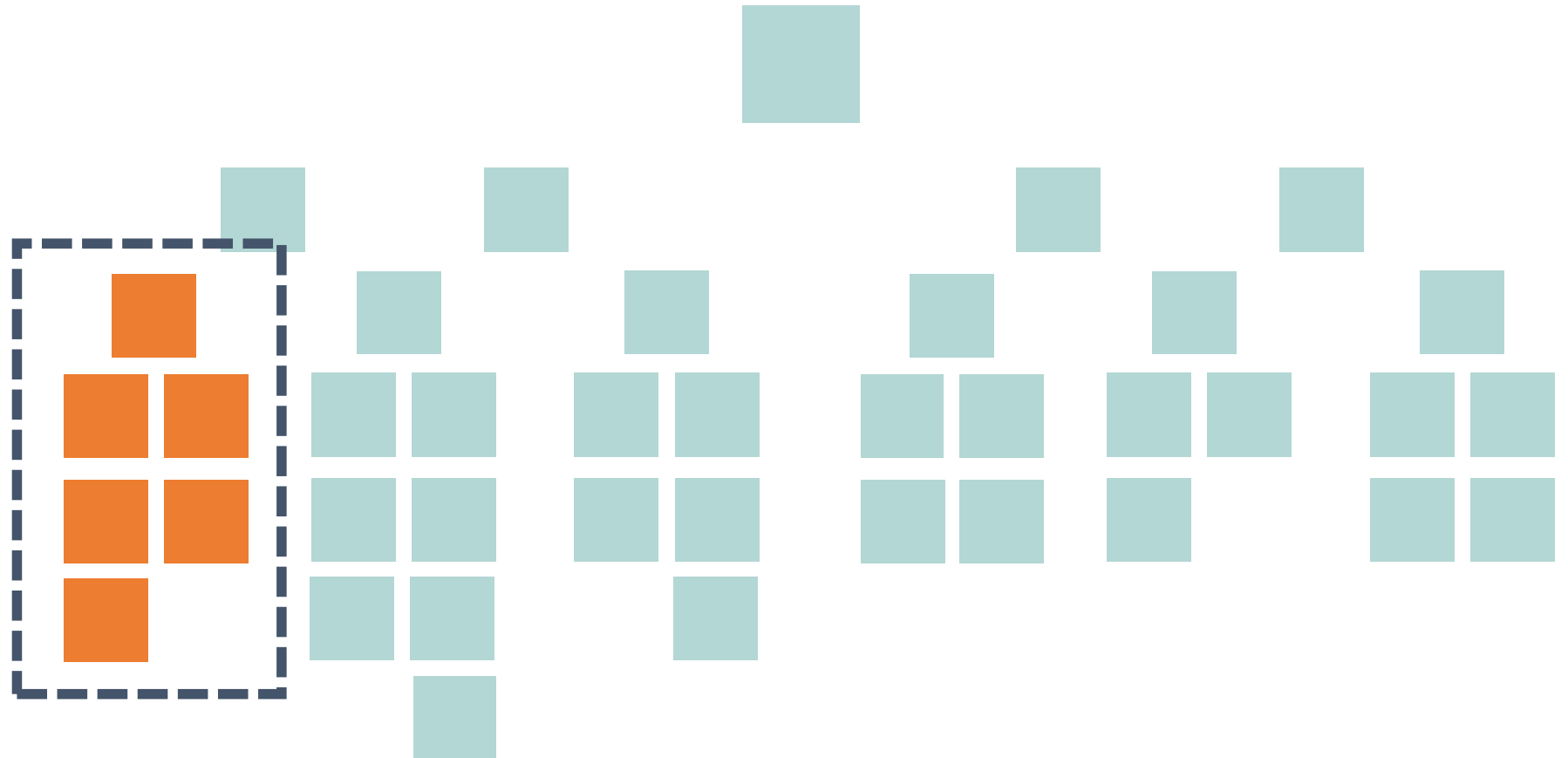
Engineer – Responsible to ensure we're building products that are **fast, reliable, and well engineered AND high quality and meets customers needs.**

# Our teams

## Program Management



## Engineering





# Teams

Cross discipline

10-12 people

Self managing

Autonomous backlog

Intact for 12-18 months

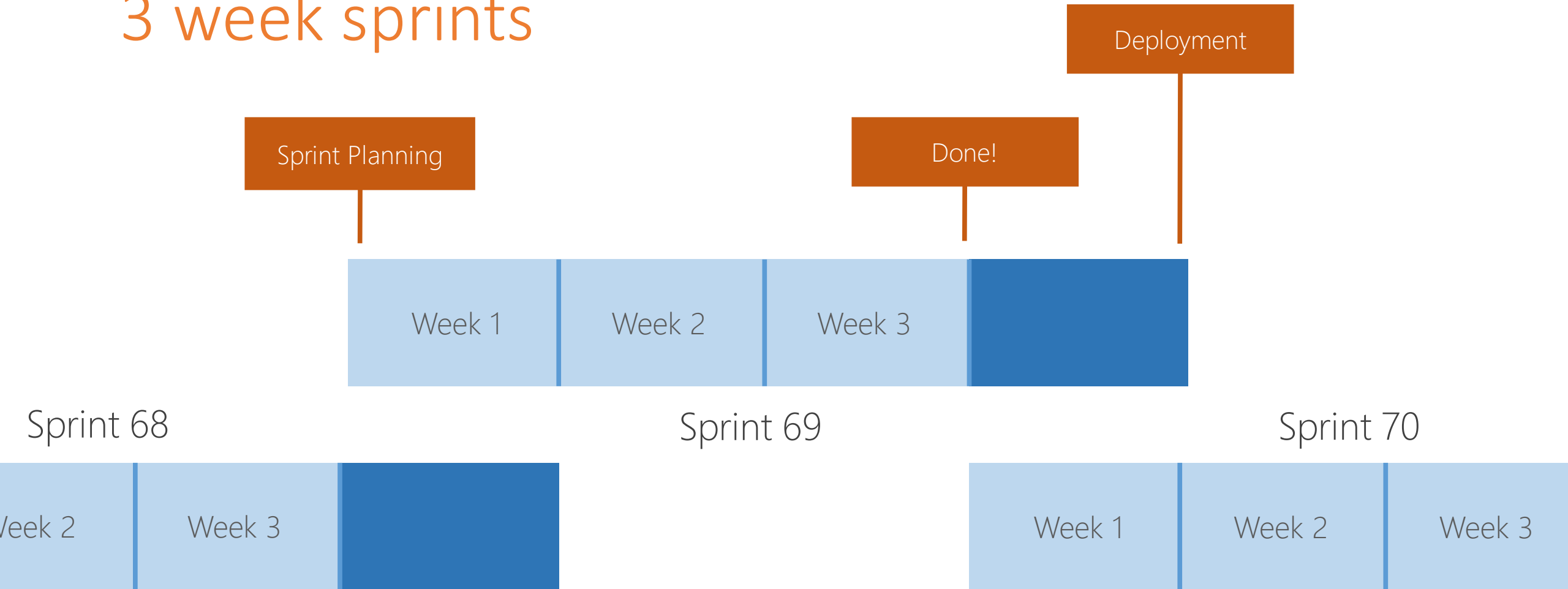
Physical team rooms



# 3 week sprints

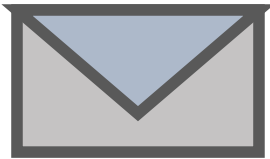


# 3 week sprints

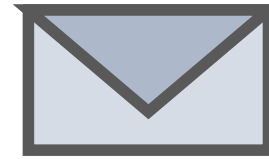


# 3 week sprints

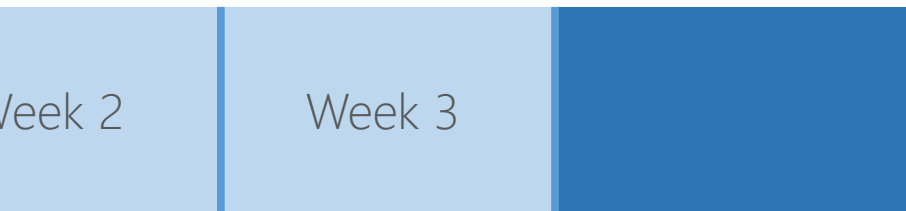
The sprint plan



What we accomplished



Sprint 85



Sprint 86



Sprint 87





# Sprint mails

Plan



Collaboration - Sprint 41 Plan - Message (HTML)

FILE MESSAGE

Mon 12/3/2012 12:42 PM

**David Gorena Elizondo**  
Collaboration - Sprint 41 Plan

To: VS Cloud Services All  
Cc: TFS Collaboration

Retention Policy Delete after 1 year (1 year) Expires Never

Our team has started to collaborate with VC folks on the user story that will enable the E2E for GIT scenarios. We expect to be done with this E2E experience this sprint. We acknowledge the fact that we're entering "holiday" sprints, but our goals will also include remaining under the bug cap, completing our engagement with the Airstream team, and continuing the "Team room" momentum with a more formalized design after the spiking that happened last sprint.

**Goals**

- Remain under the bug cap
- Collaborate with the VC team on enabling the E2E for the GIT story
- Continue the "Team Room" momentum with a more formalized design

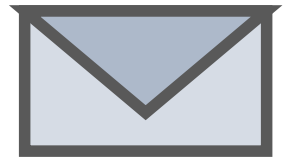
**User Stories**

ID	Title	Goal for end of sprint
<a href="#">832408</a>	Bugs (Starting sprint with 23)	Remain under the bug cap
<a href="#">987548</a>	I can mention a work item (#ID) as part of a GIT commit	Enable, together with the VC team, the E2E story
<a href="#">983673</a>	Airstream	Complete engagement with the Airstream team
<a href="#">1021717</a>	I can understand our design approach for the virtual Team Room	Start on a more formalized design for Team Room

Thanks,  
[The Collaboration team](#)

David Gorena Elizondo RD: Can't edit HTML field in Excel - in some situations

Accomplished



Collaboration - Sprint 41 Results - Message (HTML)

FILE MESSAGE

Thu 1/3/2013 9:38 AM

**Justin Marks**  
Collaboration - Sprint 41 Results

To: VS Cloud Services All  
Cc: TFS Collaboration

You forwarded this message on 1/7/2013 8:54 AM.

Even with the holidays the team was able to get a bunch of stories completed. The Collaboration team has really embraced collaborating with other feature teams:

- We've had a strong collaboration with the VC team on delivering an E2E story around linking GIT commits to work items as can be seen in the below sprint video
- We worked with the Airstream team to pull down and validate the RI so that the discussion service is now being built in production using Airstream
- With the help of the WIX team we added the ability to send email from the product backlog

All the while we continued to stay on top of bugs dropping below 20!

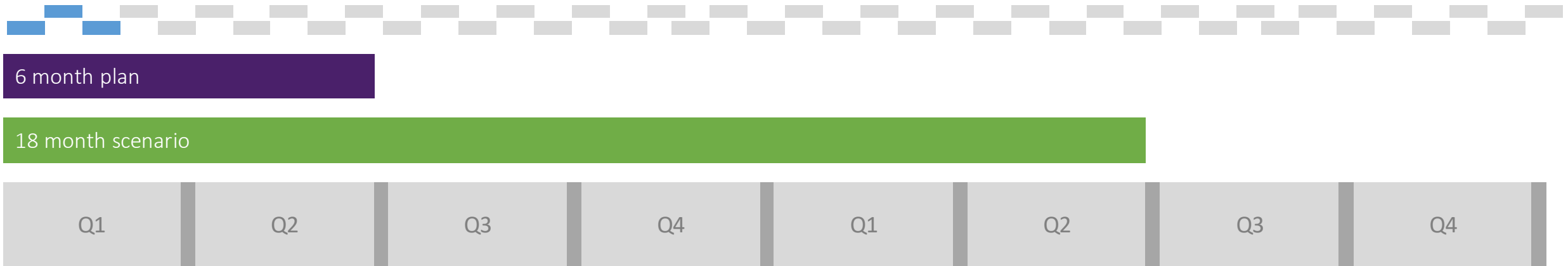
**Sprint Demo**

TFS Collaboration  
Sprint 41 Demo

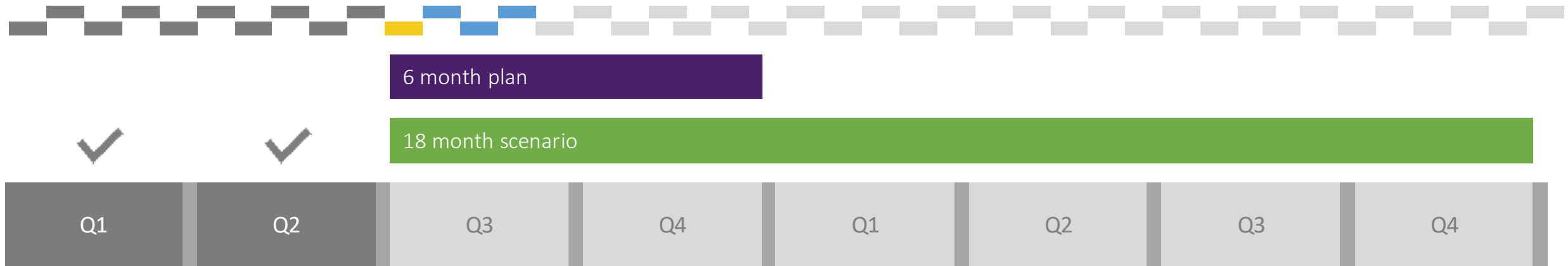
GIT work item association

Justin Marks RD: TFS 2012 - Excel integration: Hide "hidden" work item types

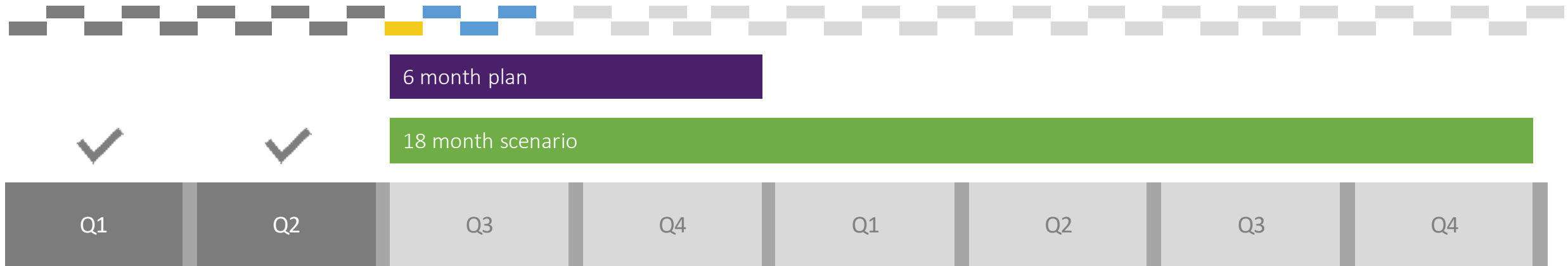
# Planning



# Planning



# Planning





# Planning

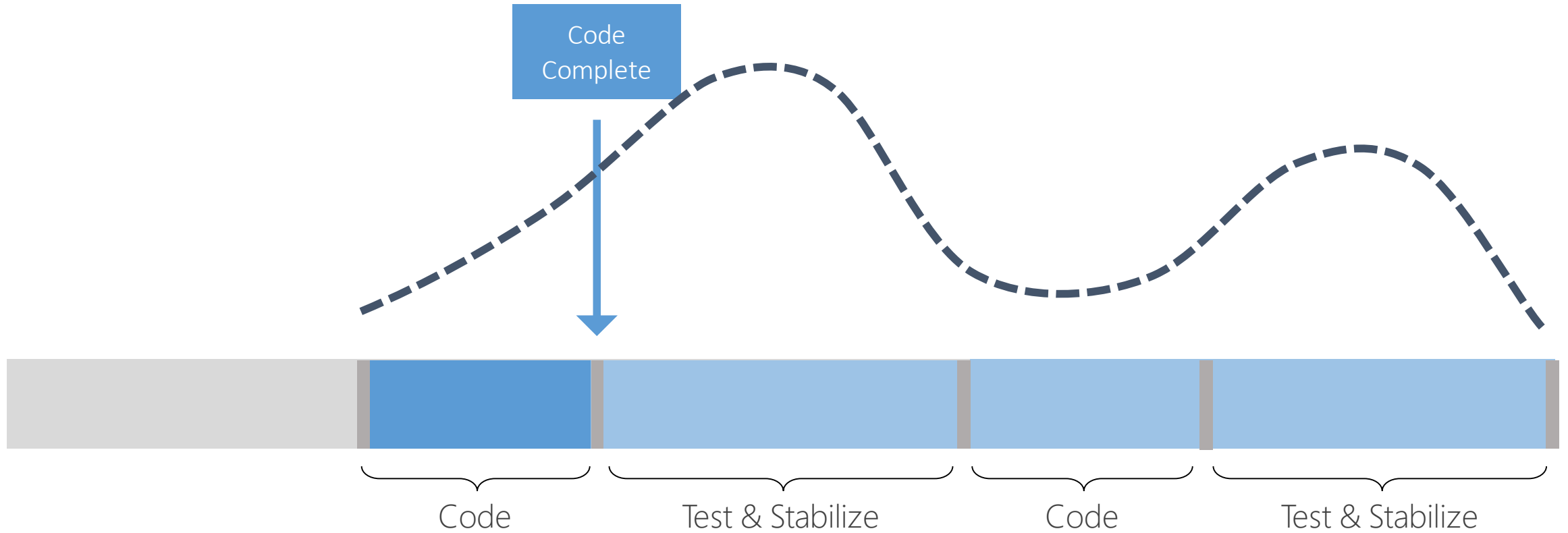


A decorative graphic in the top right corner consisting of a cluster of squares in various shades of blue, purple, and pink, with a bright white square at the center of the cluster.

# Project Planning

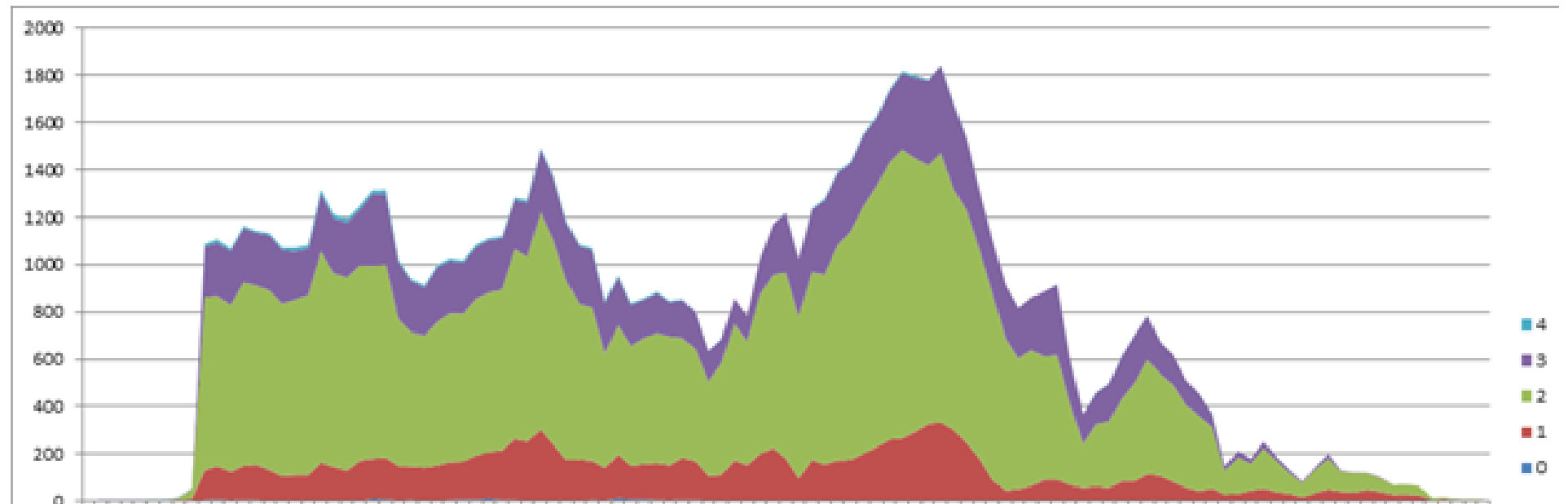
Abel Wang

# Quality before



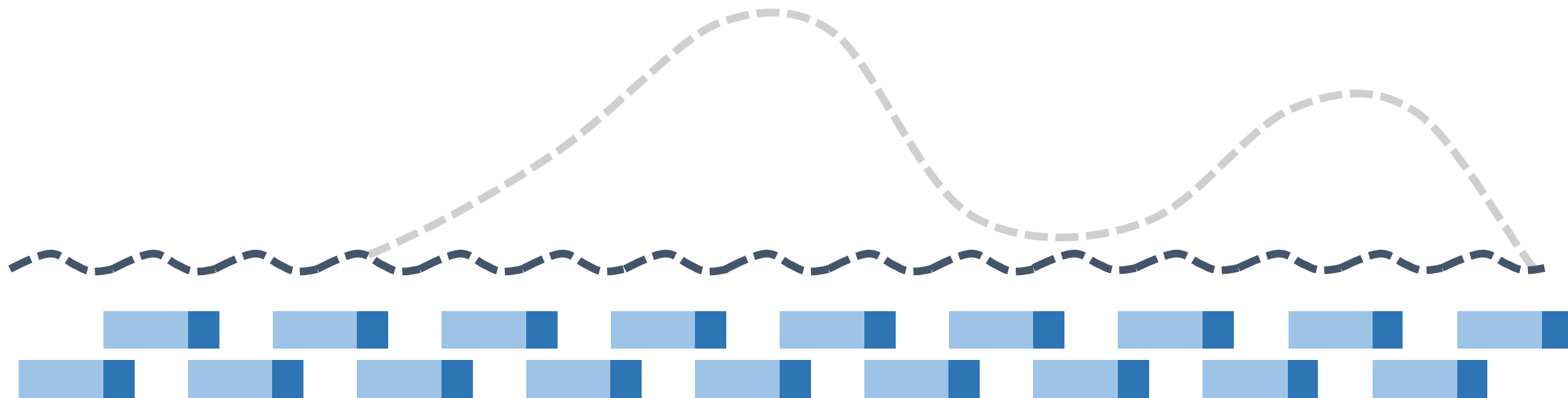
# Quality before

- Multi-year cycles
- Milestones and stabilizations
- Debt





# Quality after



Bugs

Teams	Active								Resolved					Total Resolved	Total Active	Bug Bar	Active Bugs Diff w/Last Report
	P0 Bugs	VSO Bugs	Hosted Sprint 84	Hosted Sprint 85	Dev14 RTM Bugs	Dev14 Update 1	Stale Bugs	Incoming in last week	Fixed last Week	VSO Bugs	Hosted Sprint 84	Dev14 RTM Resolved	7d ZRB				
Agile	1	144				12		107	99	17		1	5	25	158		-3
Agile		12				1		14	1			1		1	13		
Agile IDC		21						32	31	11				13	21	2.63	1
Backlogs		24				2		26	37	2			2	4	27	3.18	1
Kanban		20				4		4	18	2			1	5	24	2.53	-3
Modern WIT		27				1		13	7	2			2	2	29	2.76	-2
WIT IQ	1	40				4		18	5						44	4.19	-1
Cross Site		30					181	1	2	8			9	38	268		-30
Enterprise Social		96				10	27	25	24	102	4		94	105	111		3
Code Sharing		22				2	12	9	12	14			9	14	29	2.32	1
Dashboards		28				4		6	7	25	3		24	28	32	3.05	1
People		46				4	15	10	5	63	1		61	63	50	4.00	1
ESSC	1	60					38	27	15	74	1		82	92	113		5
Engineering Productivity Systems	1	23					8	16	5	8			6	11	42	5.60	6
MSDN Subscriptions		11					12	7	9	1			11	16	42	4.94	-2
Service Insights		26					18	4	1	65	1		65	65	29	3.41	1
NC DevX		80	1	2		107	15	115	63	30	4	2	23	85	192		-49
Build		36	1	2		11	8	43	37	11	1			27	49	4.67	2
Java		1				1		3	1				1	1	4	0.73	0
Version Control Client		7				79		43	20	1			7	27	87	6.96	-57
Version Control Server		36				16	7	26	5	18	3	2	15	30	52	4.16	6
NC Services Platform	2	94	2	2	5	53	24	73	39	23	1		17	27	153		10
Cloud Admin and Tools	2	30	2	2	5	33	16	28	10	2	1		1	4	69	6.57	8
Cloud Services Framework		36				2		21	21	5			2	6	38	3.04	-6
Open ALM		28				18	8	24	8	16			14	17	46	4.38	8
Shared Cloud Services	1	164		3	2	8	45	96	90	95	3	1	71	109	198		-13
Acquisition		15					1	10	11	22	1		19	23	15	2.31	-1
Enterprise Authorization		28			1	2	8	10	7	13			8	14	31	3.88	0
Identity	1	69		1	1	3	22	16	9	21	2		24	26	73	7.68	0
Licensing and Accounts		35		2		2	3	20	23	21		1	11	23	37	6.73	-6
Shared Cloud Services						1				3			3	3	1		1
VSCOM Site		6					11	12	15	1			3	6	30		3
VSO Commerce		11						28	25	14			3	14	11	1.47	-10
TSE		13				2	1	2	3	8			6	8	15		4
Enterprise Analytics		13				2	1	2	3	8			6	8	15	2.73	4
VSCS		4				10		15	4	10			10	12	15		13
Grand Total	5	685	3	7	7	202	331	461	339	367	13	4	317	501	1223		
Difference w/last report	0	9	1	0	0	202	6			-8	2	2	9	50	-60		

Bugs

102	4		94	105	111		3
14			9	14	29	2.32	1
25	3		24	28	32	3.05	1
63	1		61	63	50	4.00	1
74	1		82	92	113		5
8			6	11	42	5.60	6
1			11	16	42	4.94	-2
65	1		65	65	29	3.41	1
30	4	2	23	85	192		-49
11	1			27	49	4.67	2
			1	1	4	0.73	0
1			7	27	87	6.96	-57
18	3	2	15	30	52	4.16	6
23	1		17	27	153		10
2	1		1	4	69	6.57	8
5			2	6	38	3.04	-6
16			14	17	46	4.38	8
95	3	1	71	109	198		-13
22	1		19	23	15	2.31	-1
13			8	14	31	3.88	0
21	2		24	26	73	7.68	0
21		1	11	23	37	6.73	-6
























































































































































































































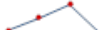

















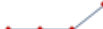




























# Quality

Abel Wang

# Engineering scorecard

		Livesite Health										Engineering Debt									
			% of LSIs automatically detected (Current Quarter)		Max TTM (mins)(Current Quarter)		# LSI repair WIs older than 2 sprints		% LSI repair WIs Within SLA(2 sprints)		# of DTS over SLA		# P0 or P1 bugs > 21 days		# Active bugs per engr		DevFabric NAR Reliability		DevFabric SelfTest & Basics Reliability		Security: # WI > 21 days
Agile	Backlogs		NA		NA		1		80.0		0		1		5.4		97.74		99.85		0
	Kanban		NA		NA		0		100.0		0		0		4.6		92.49		NA		0
	Modern WIT		0		360		3		78.6		1		0		2.3		96.98		100.00		0
	Agile IDC		NA		NA		0		NA		0		1		3.6		88.56		NA		0
	WIT IQ		100		NA		1		93.8		1		2		3.1		89.68		99.71		0
Enterprise Social	People		NA		NA		1		66.7		0		3		3.8		85.2		NA		0
	Code Sharing		NA		NA		0		NA		0		1		2.8		100		NA		0
	Dashboards		NA		NA		0		NA		0		2		3.1		80.83		99.81		0
ESSC	Engineering Productivity Systems		NA		NA		0		100.0		0		3		4.5		NA		NA		0
	MSDN Subscriptions		NA		NA		0		NA		0		1		5.2		NA		NA		0
	Service Insights		NA		NA		1		83.3		0		5		3.2		NA		NA		0
NC DevX	Build		66		890		1		85.7		4		1		5.5		74.07		99.55		0
	Java		NA		NA		0		NA		0		0		0.2		NA		NA		0
	Version Control Client		NA		NA		0		100.0		0		9		7.5		85.25		99.90		0
	Version Control Server		66		687		5		82.1		1		2		4.2		96.52		100.00		0
NC Services Platform	Cloud Admin and Tools		0		26		3		75.0		0		4		4.9		85.26		99.94		0
	Cloud Services Framework		33		24480		4		78.9		2		5		3.7		99.05		100.00		0
	Open ALM		NA		NA		1		66.7		1		3		3.2		85.15		99.81		0
SCS	Acquisition		100		344		0		100.0		0		1		2.2		86.66		NA		0
	Identity		75		14160		8		52.9		0		25		7.3		91.03		100.00		1
	Licensing and Accounts		NA		NA		0		100.0		0		12		6.5		94.35		99.96		0
	Enterprise Authorization		50		620		3		75.0		0		11		3.6		92.23		99.43		0
	VSO Commerce		NA		NA		0		100.0		0		1		2		93.89		NA		0
TSE	Enterprise Analytics		0		686		0		NA		0		0		2		NA		NA		0
Service Delivery	Service Delivery		80		5280		0		100.0		0		2		1.8		NA		NA		2
VSCS	VSCS		71		24480		32		82.1		10		95		4.3		93		99.00		3

# Engineering scorecard

	NA		NA		1		80.0		0			1		5.4		97.74		99.85		0	
	NA		NA		0		100.0		0			0		4.6		92.49		NA		0	
	0		360		3		78.6		1			0		2.3		96.98		100.00		0	
	NA		NA		0		NA		0			1		3.6		88.56		NA		0	
	100		NA		1		93.8		1			2		3.1		89.68		99.71		0	
	NA		NA		1		66.7		0			3		3.8		85.2		NA		0	
	NA		NA		0		NA		0			1		2.8		100		NA		0	
	NA		NA		0		NA		0			2		3.1		80.83		99.81		0	
	NA		NA		0		100.0		0			3		4.5		NA		NA		0	
	NA		NA		0		NA		0			1		5.2		NA		NA		0	
	NA		NA		1		83.3		0			5		3.2		NA		NA		0	
	66		890		1		85.7		4			1		5.5		74.07		99.55		0	
	NA		NA		0		NA		0			0		0.2		NA		NA		0	
	NA		NA		0		100.0		0			9		7.5		85.25		99.90		0	
	66		687		5		82.1		1			2		4.2		96.52		100.00		0	
	0		26		3		75.0		0			4		4.9		85.26		99.94		0	
	33		24480		4		78.9		2			5		3.7		99.05		100.00		0	
	NA		NA		1		66.7		1			3		3.2		85.15		99.81		0	
	100		344		0		100.0		0			1		2.2		86.66		NA		0	
	75		14160		8		52.9		0			25		7.3		91.03		100.00		1	
	NA		NA		0		100.0		0			12		6.5		94.35		99.96		0	
	50		620		3		75.0		0			11		3.6		92.23		99.43		0	
	NA		NA		0		100.0		0			1		2		93.89		NA		0	
	0		686		0		NA		0			0		2		NA		NA		0	
	80		5280		0		100.0		0			2		1.8		NA		NA		2	
	71		24480		32		82.1		10			95		4.3		93		99.00		3	

# Transform engineering

Multi-year cycles → cloud cadence

Box → live site/DevOps

On-premises TFS → Visual Studio Team Services

Dev and QA → engineer

Mostly functional tests → mostly unit

Accepting test failures → 100% reliability and fast



# Deployment principles

No down time

Fully automated

Joint ownership between engineering and ops

Decoupled services: clear contracts

Feature flags

# Feature flags

Decouples engineering and marketing

Control exposure

Granular

Controlled via PowerShell

Supports early feedback, experimentation

Conferences, launches

# Who are we?

- League of Extraordinary Cloud DevOps Advocates
- Cloud Developer Advocates
- #LoECDA







#LoECDA

THE PIKE

BORDERS

WELLS FARGO

BORDE

ADVENTURE

# Resources

- Channel 9

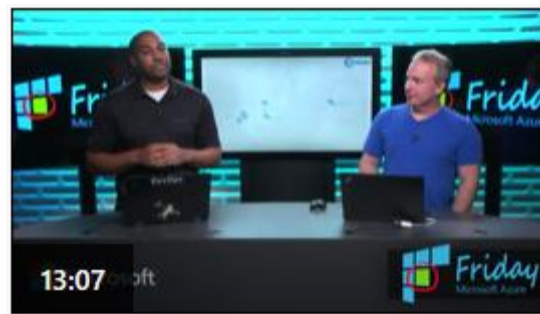
- Azure Friday
- Visual Studio Toolbox
- DevOps Interviews
- The DevOps Lab

- Twitter

- @DonovanBrown
- #LoECDA

- Web

- Welcome to DevOps ([aka.ms/whatisdevops](https://aka.ms/whatisdevops))



Azure Friday  
Azure Container Registry Geo-replication



DevOps Interviews  
Interview with Munil Shah  
(Safe Deployment)



Visual Studio Toolbox  
VSTS Work Item Rules



The DevOps Lab  
The DevOps Lab Kickoff Show #1  
– Connect(); 2017 Recap

