

Fighting The #FinTech Wave With DevOps

Benjamin Wootton

@benjaminwootton

Benjamin.Wootton@sendachi.com



sendachi

A hand holding a pencil points to a bar chart on a clipboard. The chart has several blue bars of varying heights. The background is a blurred office setting with another person's hand visible on the right.

Aims For Talk

Why Banking Needs DevOps To Fight #FinTech Disruption
[Some Of] The Ingredients Of DevOps Transformation
How To Be Successful With DevOps In A Banking Environment

DevOps Is Hitting The Financial Services Industry



2014 - Media



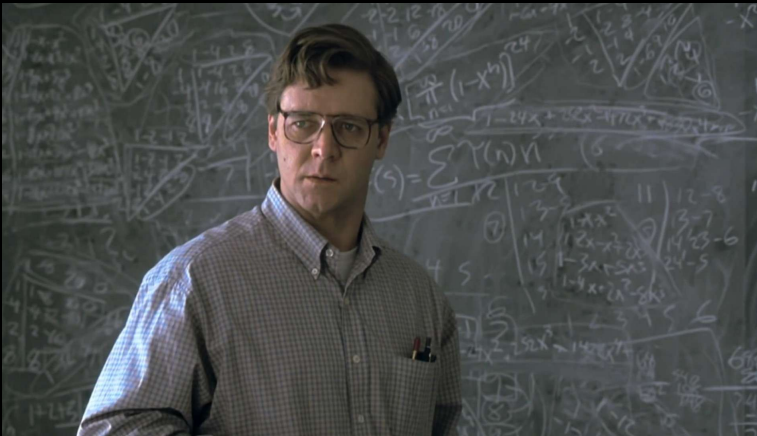
2015 - Retail



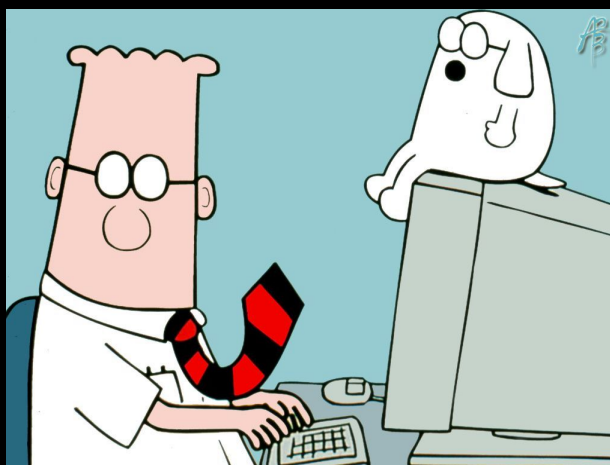
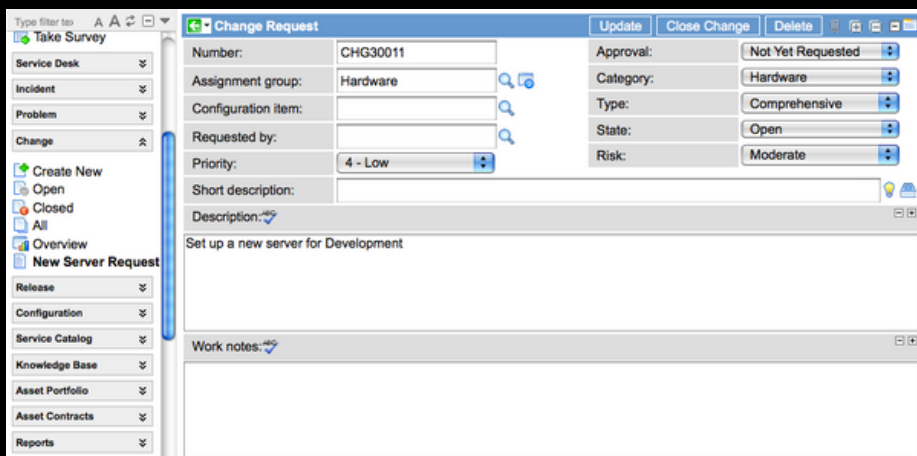
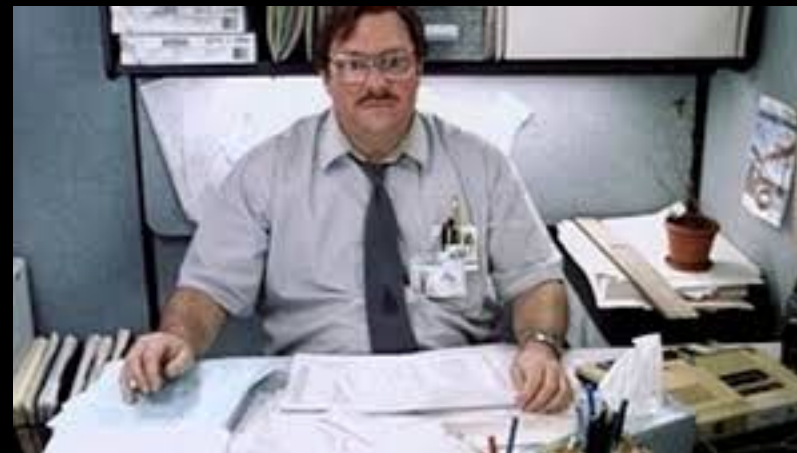
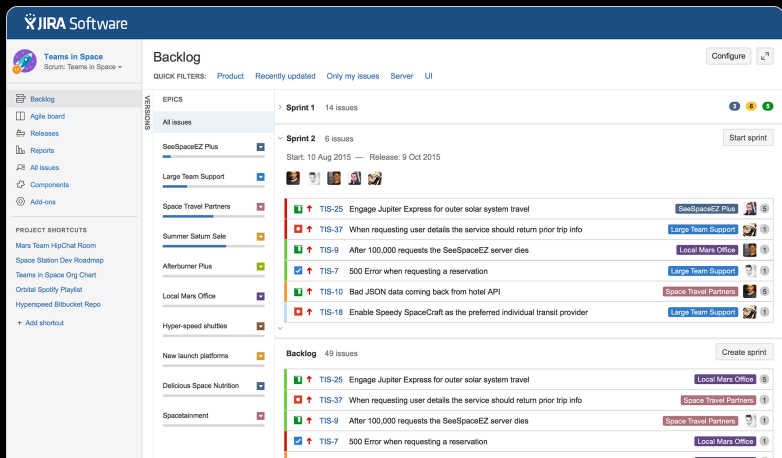
2016 – FS & Insurance



```
252 ...changer fotoDescription( cell ) {  
253   document.getElementById( 'bigimageDesc' ).innerHTML = description[img] + ' - ' + id + ' - ' + i;  
254 }  
255 function updatePhotoDescription() {  
256   if ( descriptions.length > ( page * 3 ) + ( currentImage.substring( 0, 1 ) ) ) {  
257     document.getElementById( 'bigimageDesc' ).innerHTML = description[img] + ' - ' + id + ' - ' + i;  
258   }  
259 }  
260  
261 function updateAllImages() {  
262   var i = 1;  
263   while ( i < 10 ) {  
264     var elementId = 'foto' + i;  
265     var elementIdBig = 'bigimage' + i;  
266     // ...  
267   }  
268 }
```



What I Think I Do



What I Really Do

Development Team 1

App Support Team 1

Development Team 2

Infrastructure Team

App Support Team 2

Development Team 3

Infrastructure Team

DBA Team

Development Team 4

Infrastructure Team

Network Team

Development Team 5

Infrastructure Team

Wintel Team

Development Team 6 - Mobile

Infrastructure Team

Unix Team

Development Team 7 - Vendor

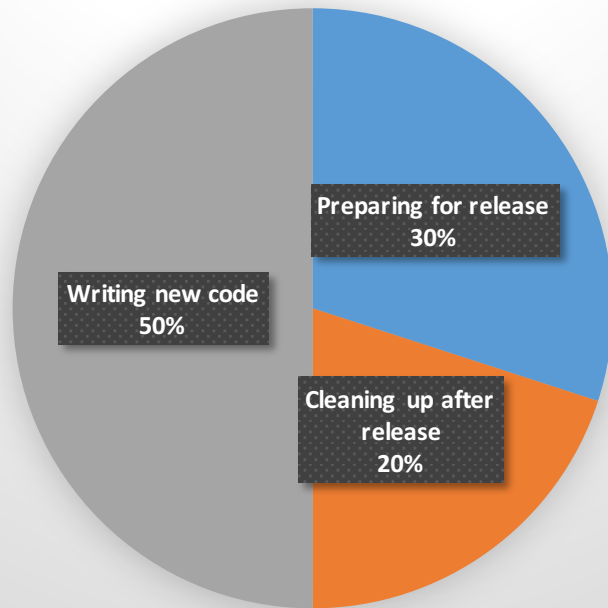
Infrastructure Team

Infrastructure

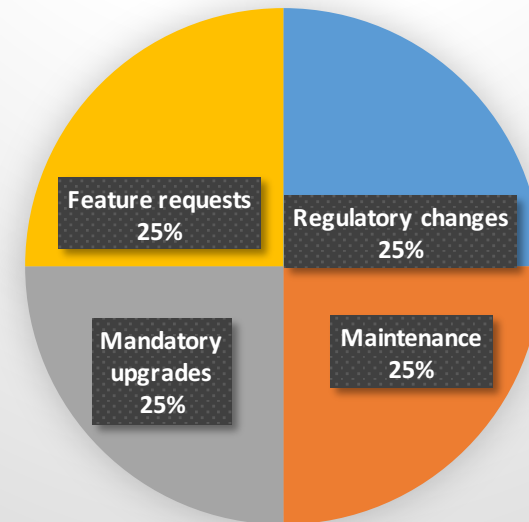


Six Weekly Release Cycle

How We Spent Our Time



How We Spent Our Development Time



12.5% Of Total Time For Innovation

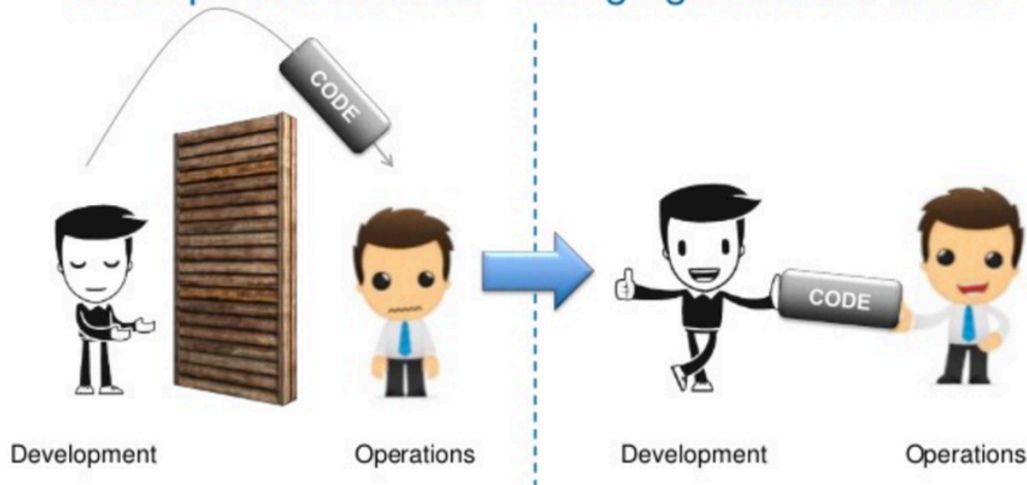




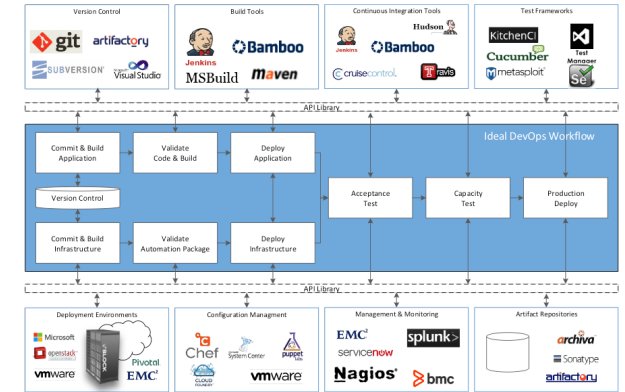
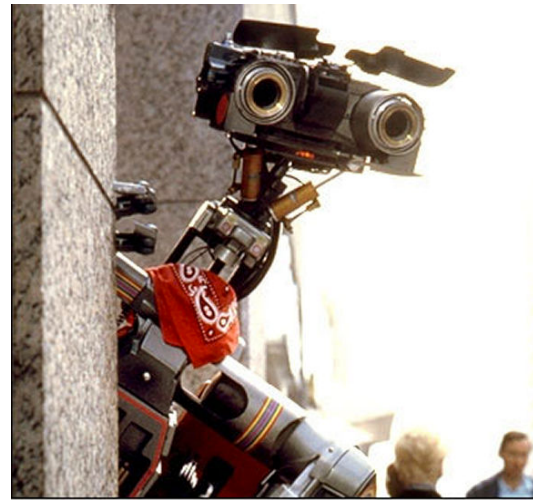
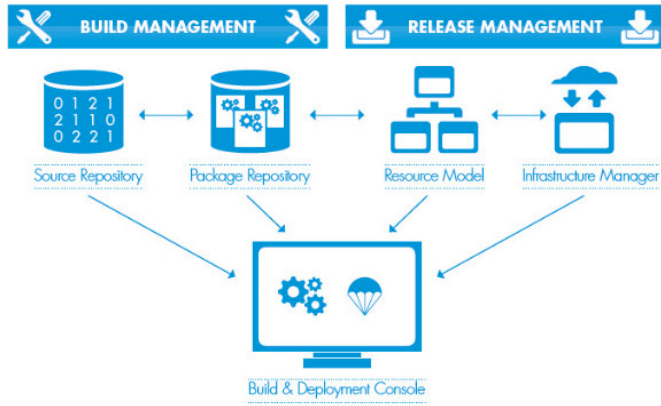
DevOps?



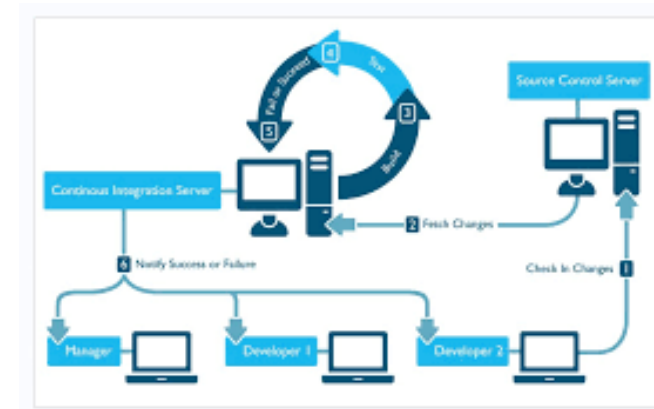
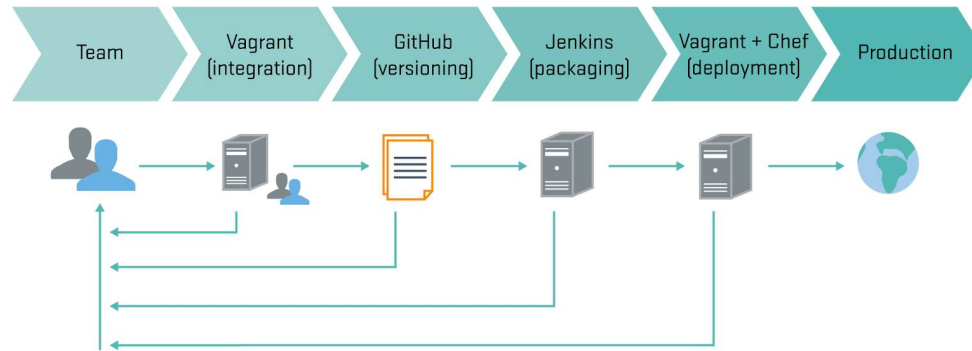
DevOps in a Nutshell – bringing down the walls!



- Improving the collaboration between the traditionally siloed development and operations functions
- An extension of agile software development. Agile is very development focussed, but often moved the bottleneck downstream
- Want to continue agile principles such as automated testing in the sprint to bring operational concerns forward and automate our infrastructure



Automation



1 En O 12c	
3 Os My MySQL	4 Os Gt Git
11 En Mq MSSQL	12 Os Sv Subversion

PERIODIC TABLE OF DEVOPS TOOLS (V1)

XebiaLabs
Deliver Faster

- Os Open Source
- Fr Free
- Fm Freemium
- Pd Paid
- En Enterprise

Database	SCM	Build
CI	Repo Mgmt	Testing
Deployment	Config / Provisioning	Containerization
Cloud / Iaas / Paas	Release Mgmt	Collaboration
BI / Monitoring	Logging	Security

2 Fm Aws Amazon Web Services

5 En Ch Chef	6 En Pu Puppet	7 Os An Ansible	8 En Sl Salt	9 Os Dk Docker	10 Pd Az Azure												
13 Fr Ssh SSH	14 En Bl BladeLogic	15 Os Va Vagrant	16 Fr Tf Terraform	17 Os Rk rkt	18 Fm Hk Heroku												
19 Os Pq PostgreSQL	20 Fr Mc Mercurial	21 Os Mv Maven	22 Os Gr Gradle	23 En Mr Meister	24 Os Jn Jenkins	25 Pd Bb Bamboo	26 Os Tr Travis CI	27 Fr Ar Archiva	28 Os Fn FitNesse	29 Fr Se Selenium	30 Os Gn Gatling	31 Pd Gd Deployment Manager	32 Os Sf SmartFrog	33 Fr Cb Cobbler	34 Os Bc Bcfg2	35 Os Kb Kubernetes	36 En Rs Rackspace
37 Os Mg MongoDB	38 Fm Gh Github	39 Os Br Buildr	40 Os At ANT	41 Fm Bm BuildMaster	42 Fm Cs Codeship	43 Fm Sn Snap CI	44 Fm Cr CircleCI	45 Os Nx Nexus	46 Fr Cu Cucumber	47 Os Cj Cucumber.js	48 Fr Qu Qunit	49 Fr Cp Capistrano	50 Fr Ju JuJu	51 Os Rd Rundeck	52 Os Cf CFEngine	53 Fr Pk Packer	54 Fm Bx Bluemix
55 En Db DB2	56 Fm Bb Bitbucket	57 Fm Qb QuickBuild	58 En Ub UrbanCode Build	59 Pd Ta Visual Build	60 Fm Tc TeamCity	61 Fm Sh Shippable	62 Os Cc CruiseControl	63 Os Ay Artifactory	64 Fr Ju JUnit	65 Fr Jm JMeter	66 Fr Tn TestNG	67 En Rd RapidDeploy	68 Fm Cy CodeDeploy	69 En Oc Octopus Deploy	70 Os No CA Nolio	71 En Eb ElasticBox	72 En Ad Apprenda
73 Fr Cs Cassandra	74 En Hx Helix	75 Os Msb MSBuild	76 Os Rk Rake	77 Os Lb LuntBuild	78 Os Cu Continuum	79 Fm Ca Continua CI	80 Os Gu Gump	81 Os Ng NuGet	82 Os Ap Appium	83 En Xltv XL TestView	84 En Tc TestComplete	85 Os Go Go	86 En Ef ElectricFlow	87 En Xld XL Deploy	88 En Ud UrbanCode Deploy	89 Os Mo Mesos	90 Os Cf Cloud Foundry

Share

Embed

Become Excellent!

Subscribe here!

91 En Xlr XL Release	92 En Ur UrbanCode Release	93 En Ls CA Service Virtualization	94 En Bm BMC Release Process	95 En Hp HP Codar	96 Pd Ex Excel	97 En Pl Plutora Release	98 En Sr Serena Release	99 Fm Tr Trello	100 Pd Jr Jira	101 Fm Rf HipChat	102 Fm Sl Slack	103 Fm Fd Flowdock	104 Pd Pv Pivotal Tracker	105 En Sn ServiceNow
106 En Sp Splunk	107 Os Ki Kibana	108 Fm Nr New Relic	109 Os Ni Nagios	110 Os Gg Ganglia	111 Os Ct Cacti	112 Os Gr Graphite	113 Os Ic Icinga	114 Fm Sl Sumo Logic	115 Os Ls Logstash	116 Fm Lg Loggly	117 Os Gr Graylog	118 Os Sn Snort	119 Os Tr Tripwire	120 En Cy CyberArk



Collaboration

Benefits

**More efficient pipeline from
developer desktop to production**

Increased efficiencies (cost savings)

Earlier delivery of value (innovation)

A person in a grey suit is holding a silver pen over a clipboard. The clipboard has a bar chart and a pie chart on it. The background is a blurred office setting.

Why Banking & Financial Services Industries Need DevOps

Half of the world's banks set to fall by the digital wayside - BBVA

04 February 2015 | 39797 views | 5 



Up to half of the world's banks will disappear through the cracks opened up by digital disruption of the industry, forecasts BBVA chairman and CEO Francisco Gonzalez.

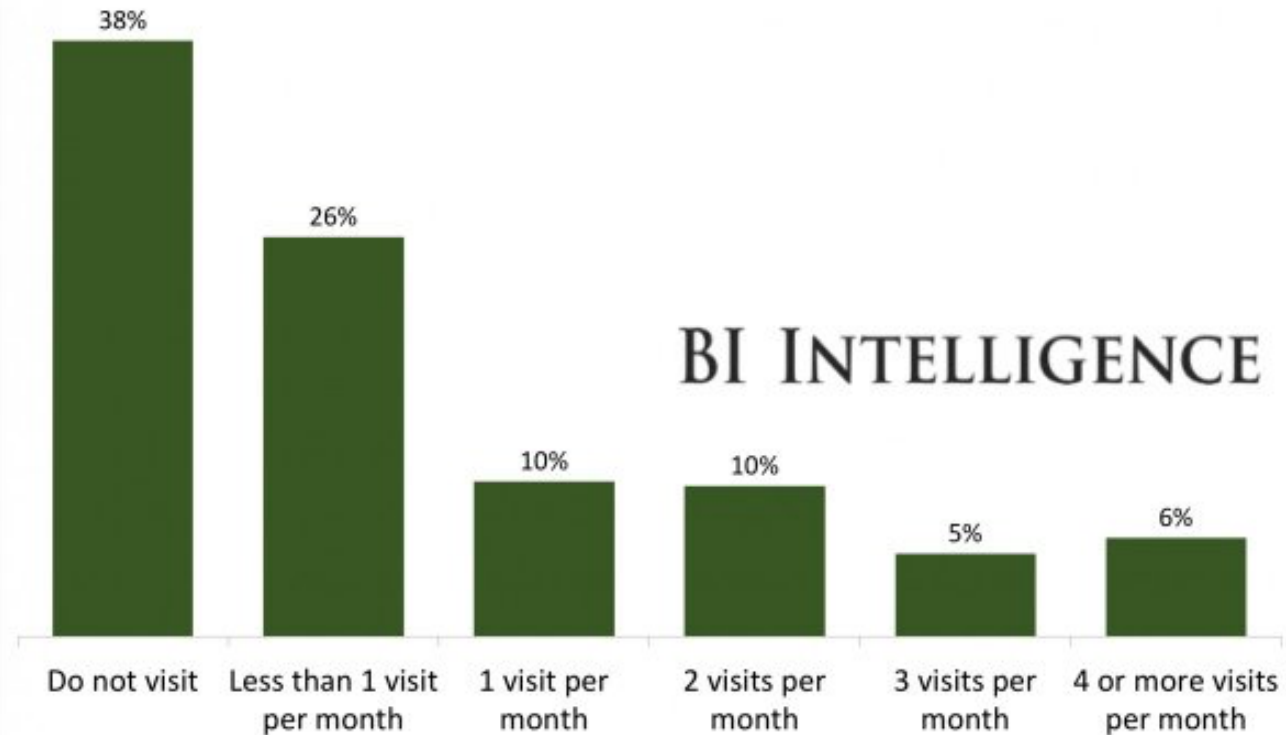
Fintech Growth Poised to Disrupt Banking Industry

January 7, 2016 | [Subscribe to The Financial Brand for Free](#)

[Twitter](#) [Facebook](#) [LinkedIn](#) [Email](#) [Print](#) [0 Comments](#)

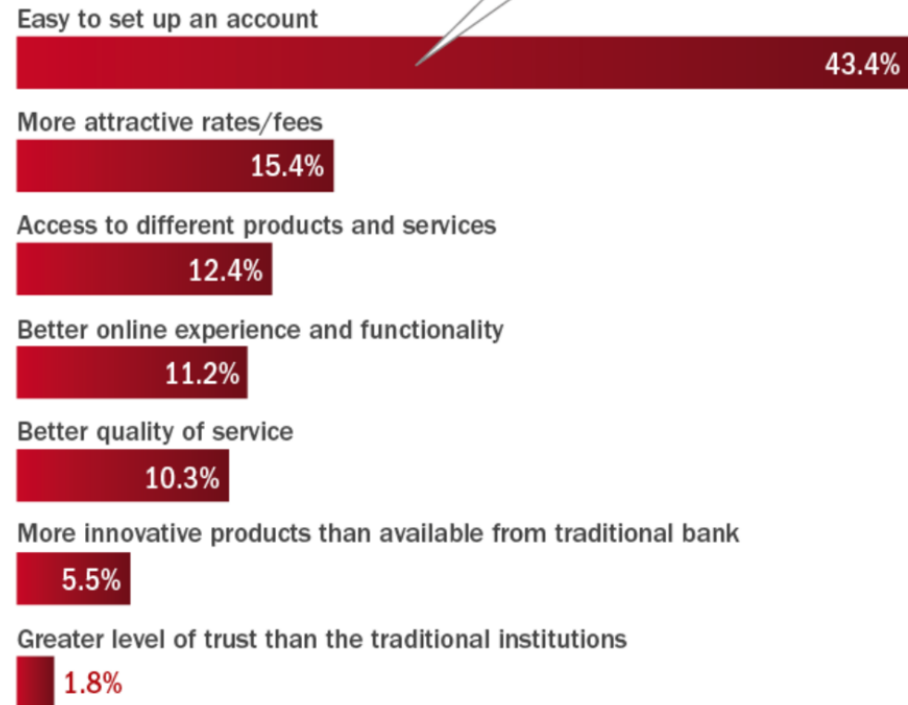
It is time for banks to take the fintech movement seriously as adoption of fintech could double among digitally active consumers in 2016.

Frequency Of Bank Visits Among US Millennials Who Use Bank Branches*



*Millennials who use bank branches to perform activities other than using an ATM.
Source: BI Intelligence Digital Banking survey, Q3 2015. n=1,500

Top reasons consumers adopt fintech solutions



Source: Ernst & Young © December 2015 The Financial Brand



**Better
Faster
Cheaper**



Regulation

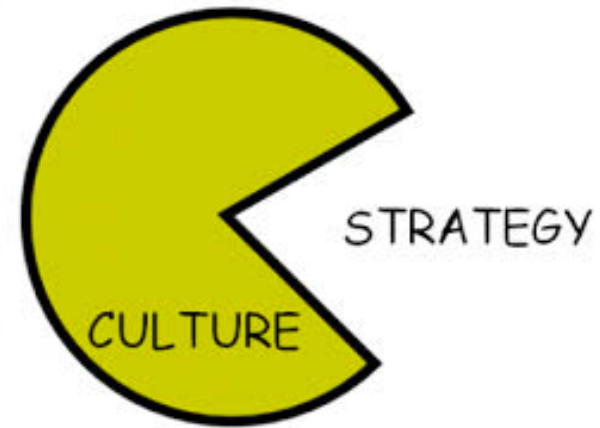
Threat & Opportunity



Ingredients Of DevOps

A close-up photograph of a person's hands in a grey suit jacket. The right hand holds a silver pencil, pointing it at a blue bar chart on a white document held on a clipboard. The left hand is visible at the bottom, pointing towards the chart. The document also features a pie chart and some text. The background is blurred, showing a desk and another person's hand. The word "People" is overlaid in a large, bold, black serif font.

People



“DevOps Is Not A Culture – It’s A Concrete Activity”

Cross Functional Teams

Cross Functional Dev/Ops Team

Agile Team



Developer



Developer



Developer



Tester



Tester



Sysadmin



DBA



Middleware

Team Makeup (Before)

Team	Engineers	Engineers5	Engineers2	Engineers3	Engineers
		Unix	Wintel	Sysadmin	Testing
Delivery Team					
Development Team A	8	0	0	1	3
Development Team B	5	0	0	0	2
Development Team C	16	0	0	1	3
Development Team D	5	0	0	0	2
Development Team E	7	0	0	0	1
Development Team F	8	0	0	0	3

Shared Service Teams	Engineers
Testing	17
Oracle	8
Wintel	14
Unix	22
Middleware	18

Total

12
7
20
7
8
11

Team Size 144
Cost / Day £50,400.00

Shared service teams – the root of much evil
In enterprise IT

DevOps can mean breaking up shared service
teams to reduce dependencies

Shared service teams remain, deep technology
focussed

Team Makeup (After)

Team	Engineers	Engineers2	Engineers3	Engineers4	Engineers
	Before	Unix	Wintel	Sysadmin	Testing
Delivery Team					
Development Team A	8	2	1	1	1
Development Team B	5	3	2	3	2
Development Team C	16	2	2	1	2
Development Team D	5	2	1	1	2
Development Team E	7	3	1	2	1
Development Team F	8	2	1	2	3

Shared Service Teams	Engineers
Testing	11
Oracle	7
Wintel	8
Unix	18
Middleware	13

Total

13
15
23
11
14
16

Team Size 149
Cost / Day £52,150.00

Size of delivery teams increases

Net headcount goes up

BUT efficiencies are restored

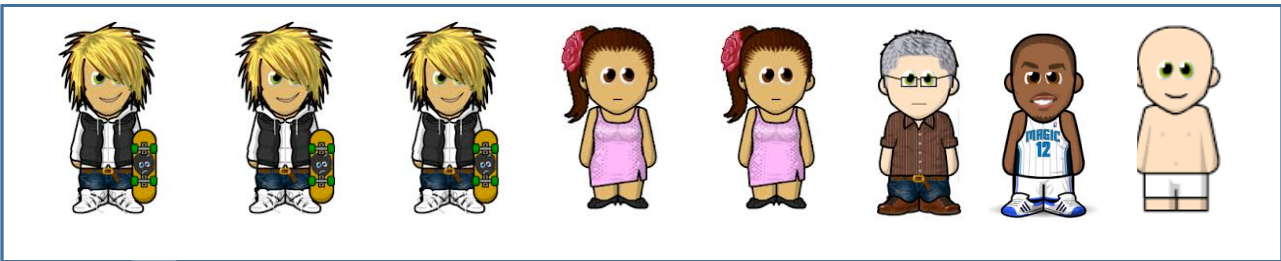
Product Aligned Dev/Ops Team



Product Aligned Dev/Ops Team



Product Aligned Dev/Ops Team



“DevOps Team”

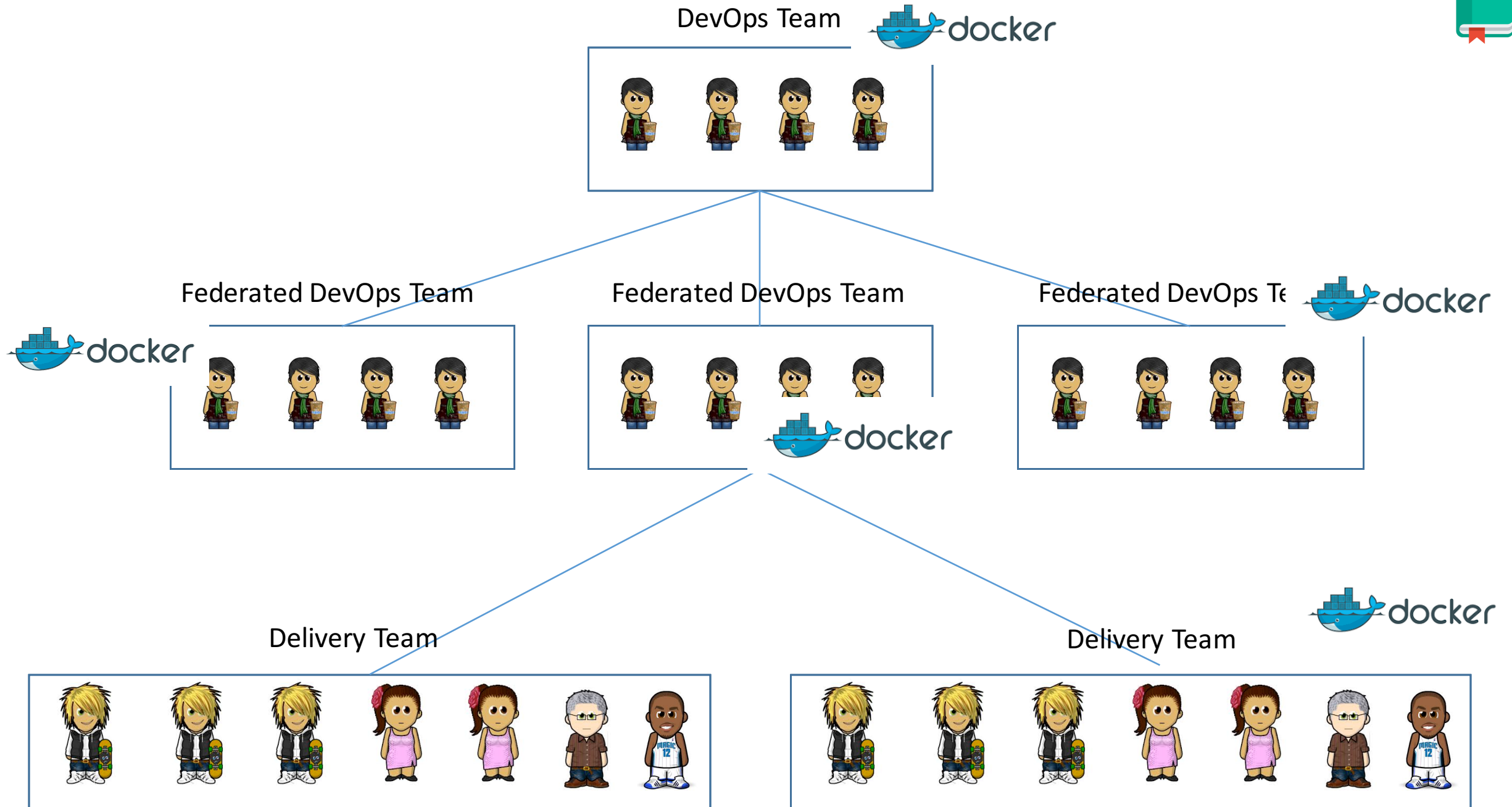


Tips to make DevOps team a success:

- Enable other teams
- Don't become a silo
- Coaching and training
- Reference Architecture
- Automate relentlessly
- Self service

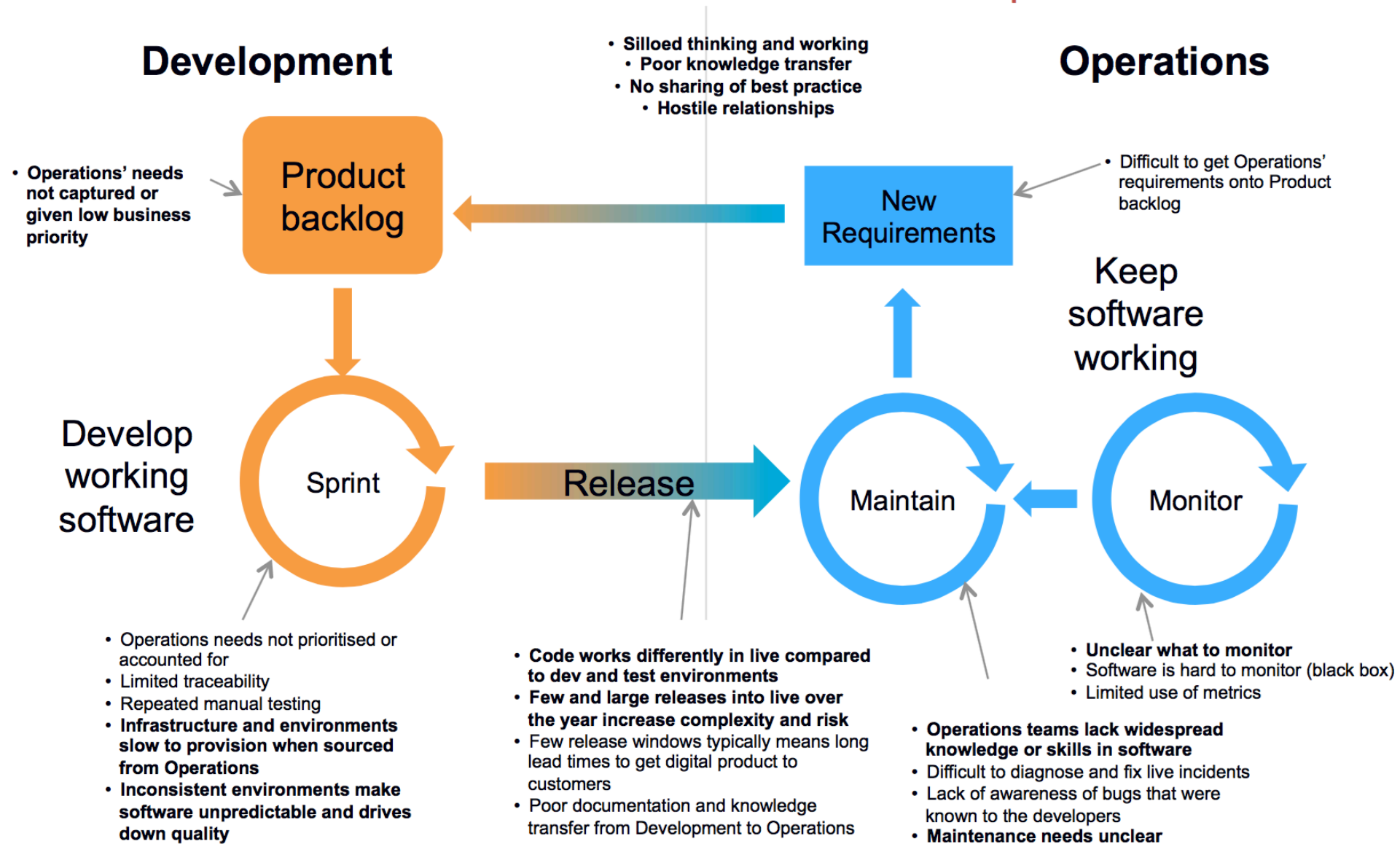


Centralisation Vs Innovation

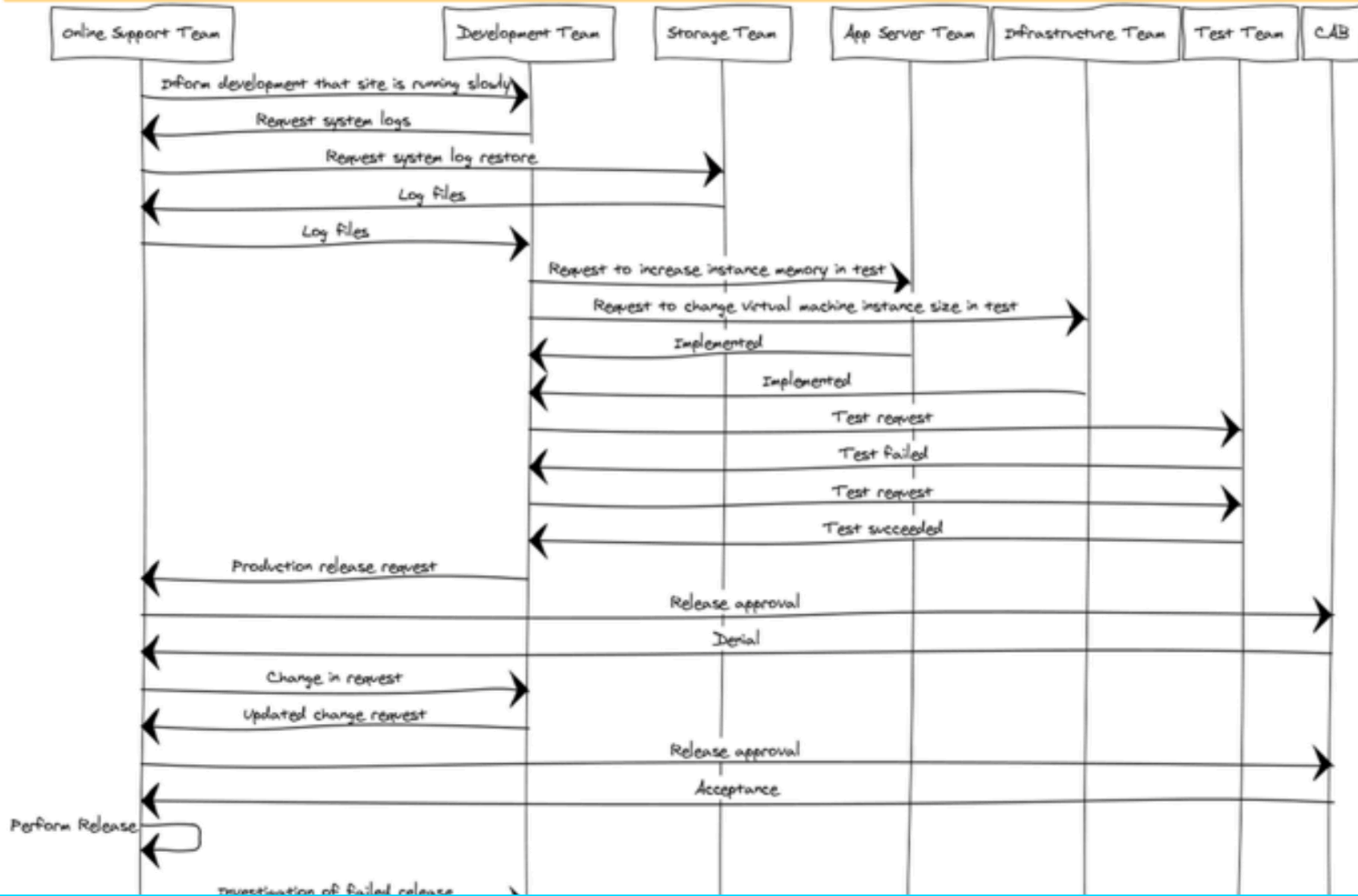


A close-up photograph of a person's hands in a dark suit jacket. The right hand holds a silver pencil, pointing it at a blue bar chart on a document held by a clipboard. The left hand is visible at the bottom, holding the edge of the document. The document also features a pie chart and some text. The background is blurred, showing another person's hand and a white folder. The word "Process" is overlaid in large, bold, black serif font in the center of the image.

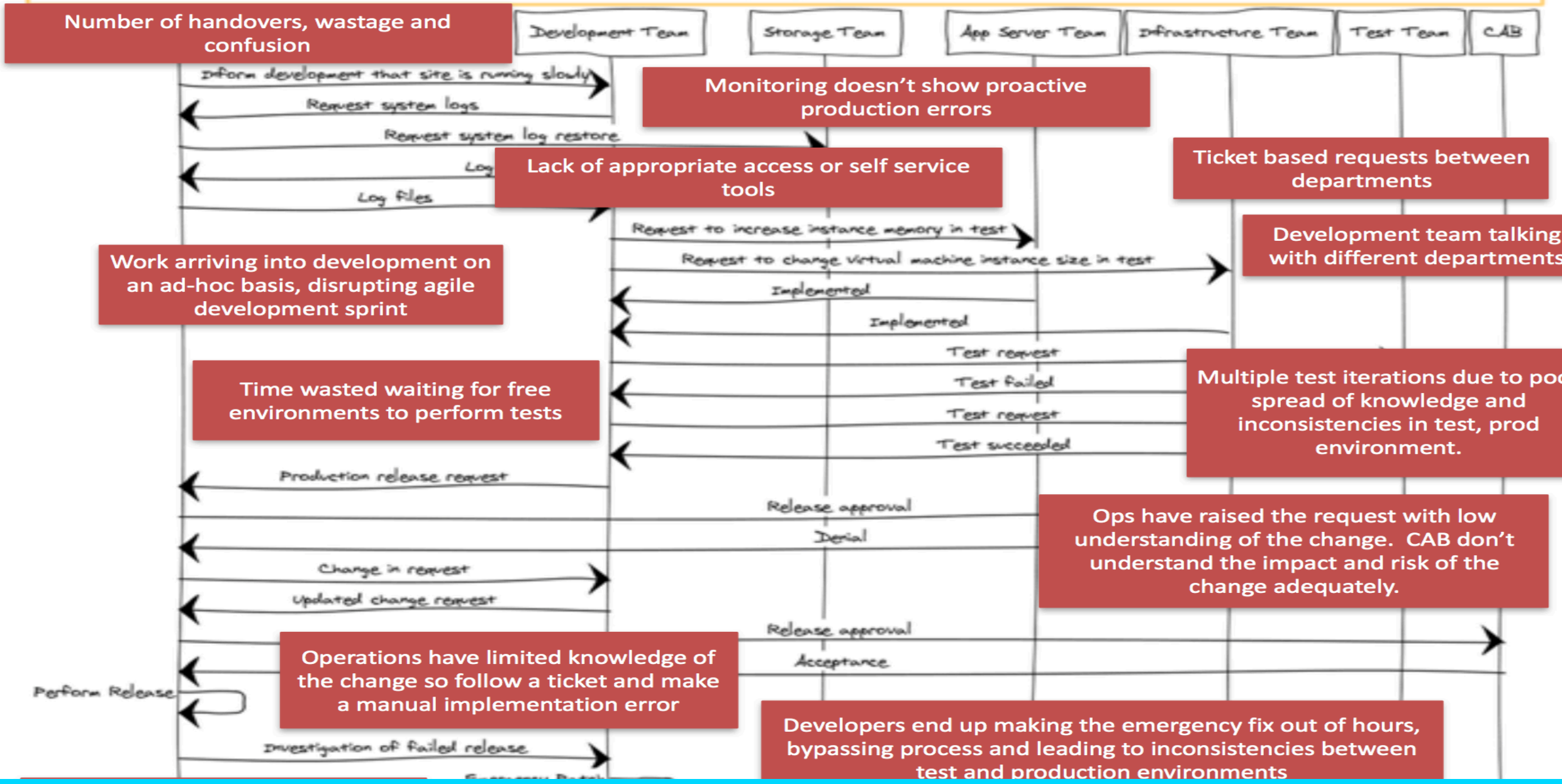
Process



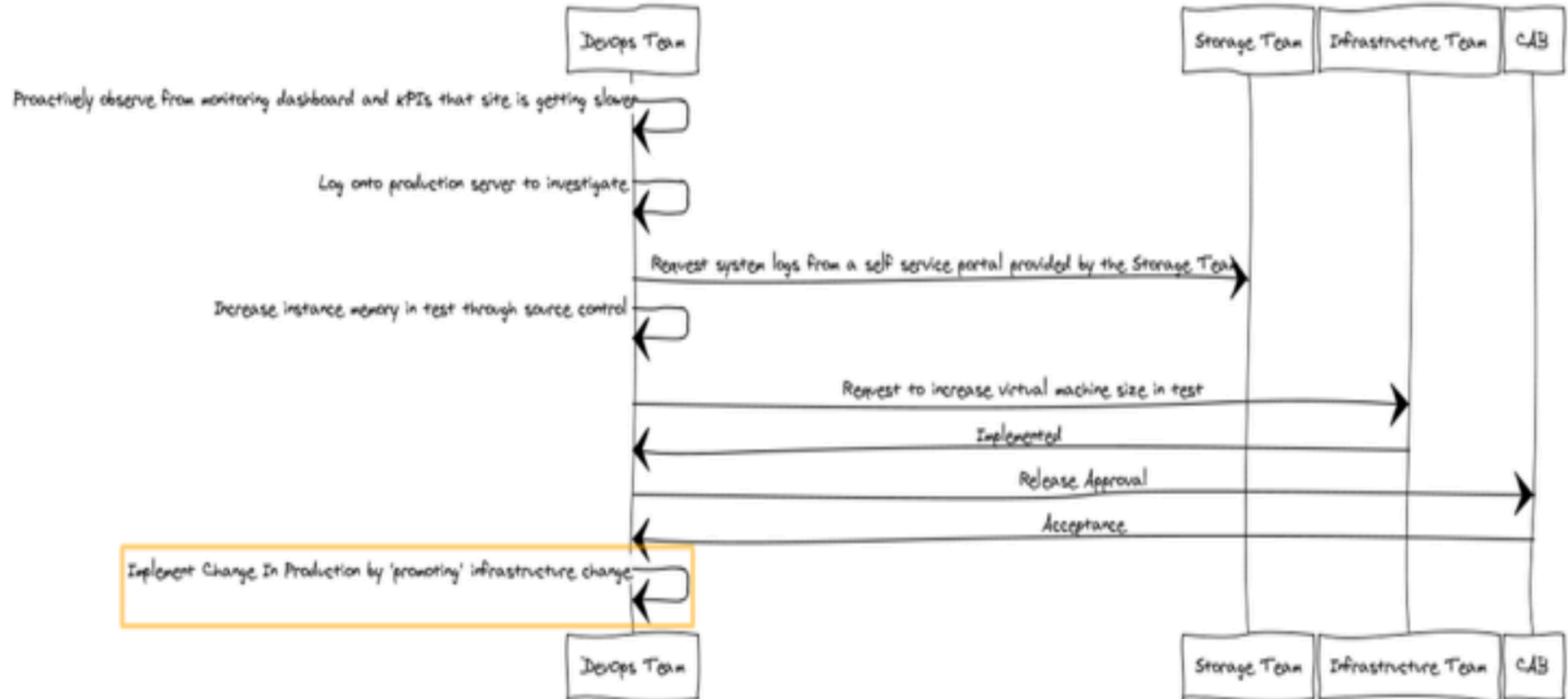
Slow Website Scenario



Slow Website Scenario

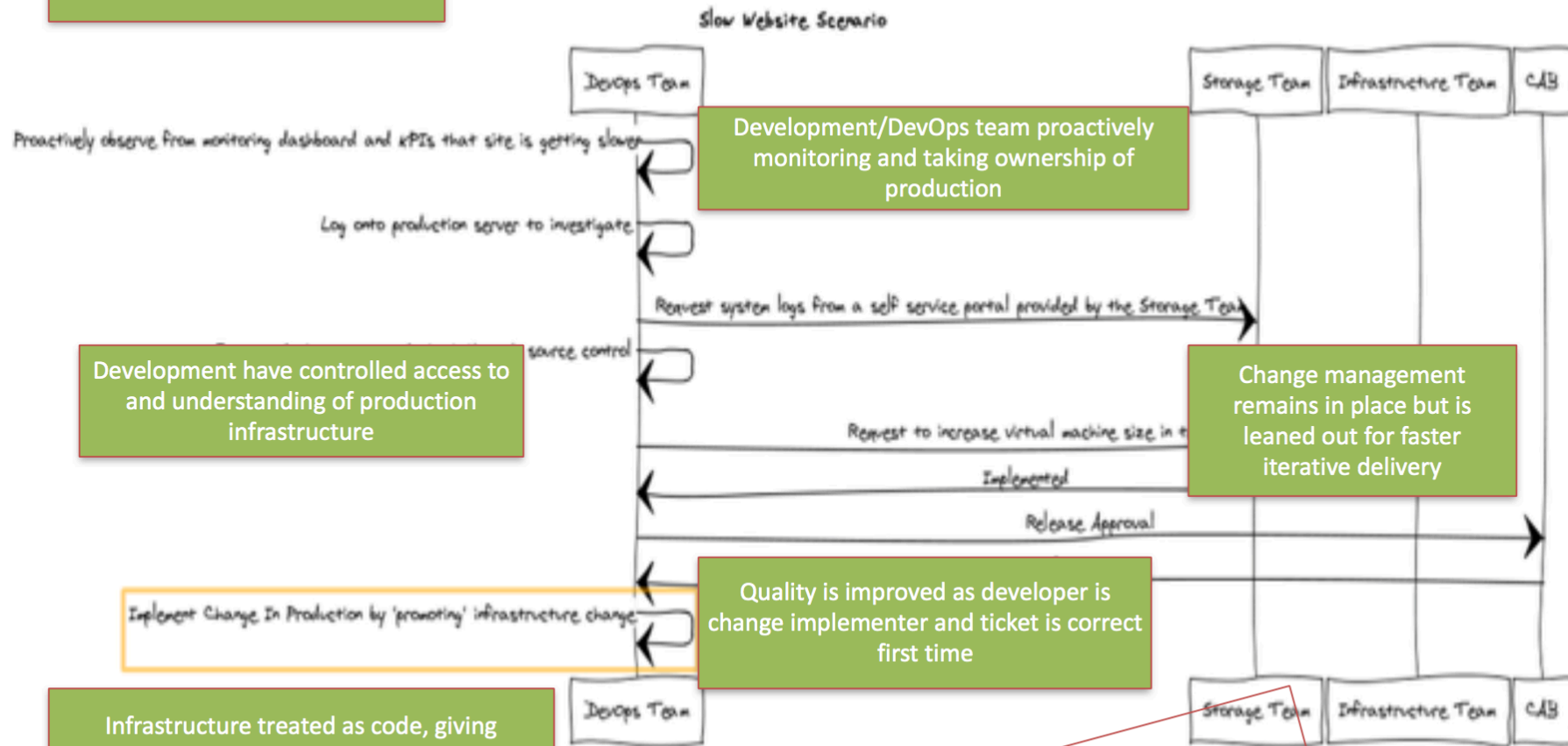


Slow Website Scenario





Fewer handovers with less scope for error and less delay



Development have controlled access to and understanding of production infrastructure

Infrastructure treated as code, giving consistency across environments and the ability to scale, flex and provision new environments quickly

DevOps At Scale Challenges:
Large scale process change...
Retraining, KPIs
Always Law

A close-up photograph of a person's hands in a dark suit jacket, holding a silver pencil and pointing at a bar chart on a clipboard. The clipboard is held by another hand. The background is blurred, showing a desk with papers and a laptop. The word "Technology" is overlaid in a large, bold, black serif font.

Technology



UNBLOCKING THE
ENVIRONMENT
LOGJAM WITH
A DEVOPS
APPROACH_



sendachi

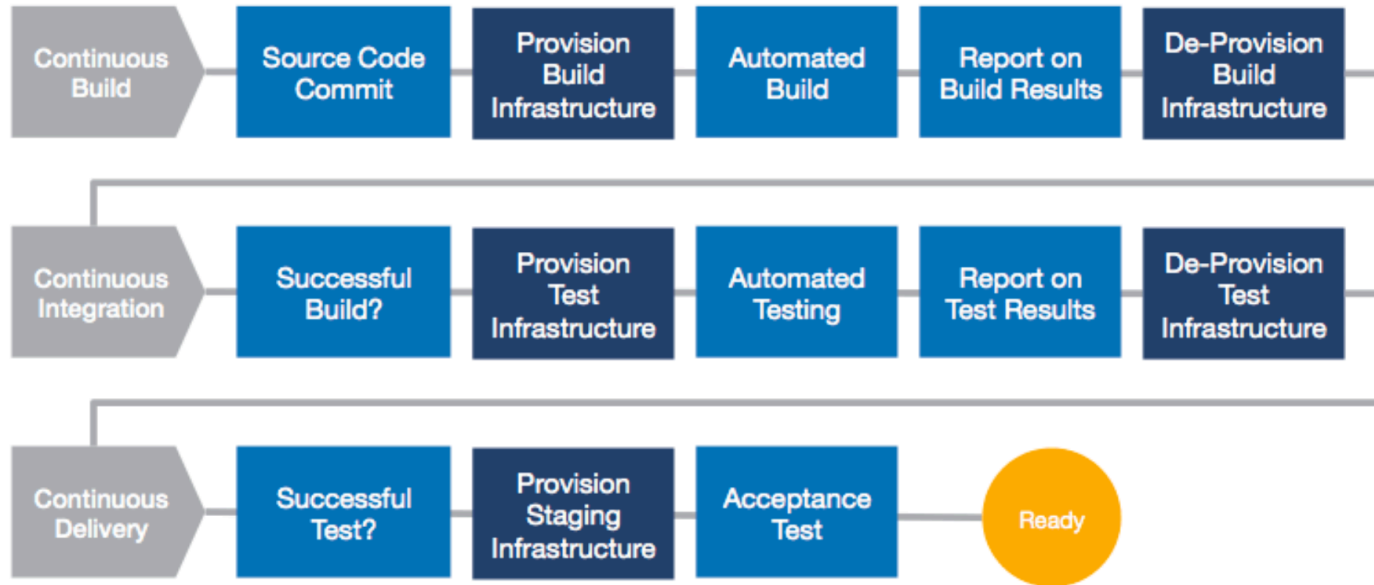
Briefing



Infrastructure as code pipelines

Infrastructure – it's just code

Raise consistency across environments



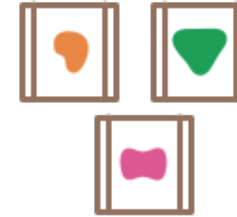
Decoupling Monolith To Microservices!



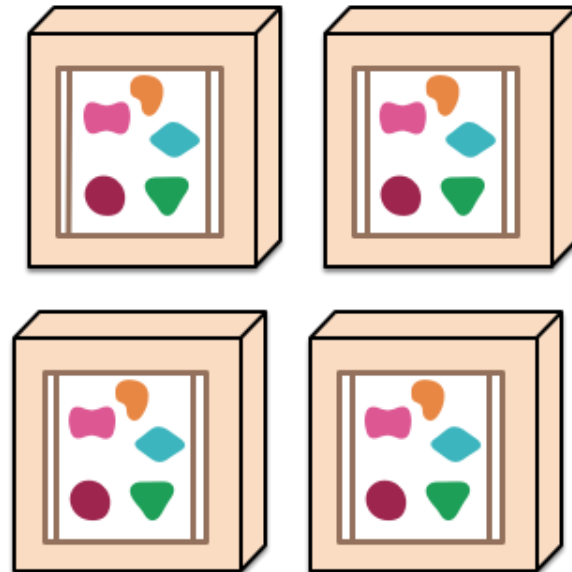
A monolithic application puts all its functionality into a single process...



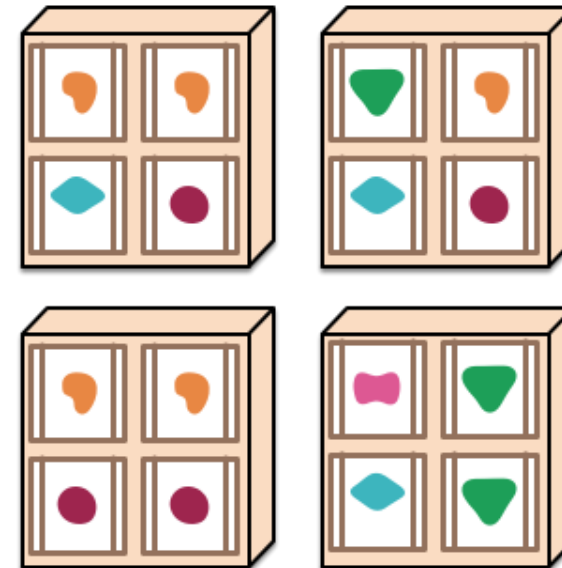
A microservices architecture puts each element of functionality into a separate service...



... and scales by replicating the monolith on multiple servers

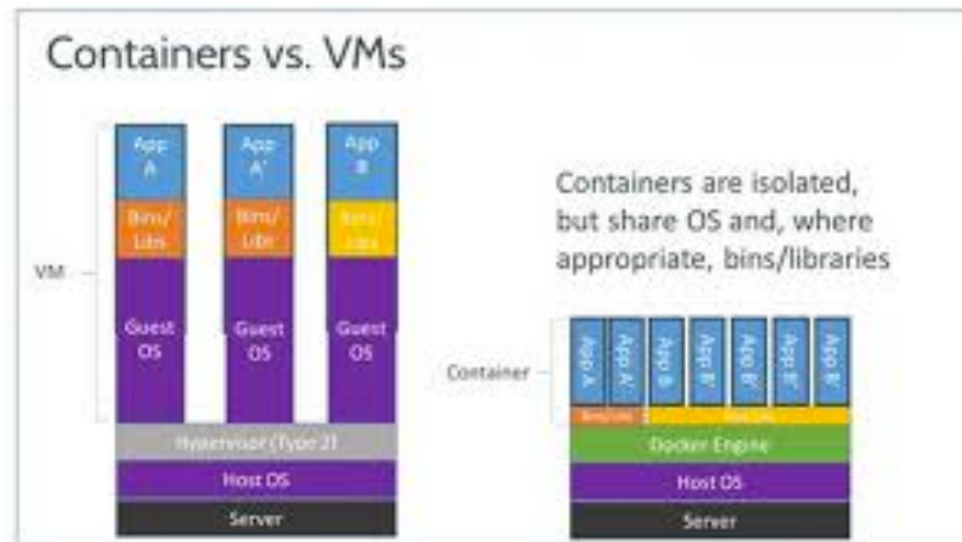


... and scales by distributing these services across servers, replicating as needed.





Docker & Containerisation





Continuous Delivery

**Moving Away From Big, Risky Releases To
Smaller Batches OF Change Delivered More Often**

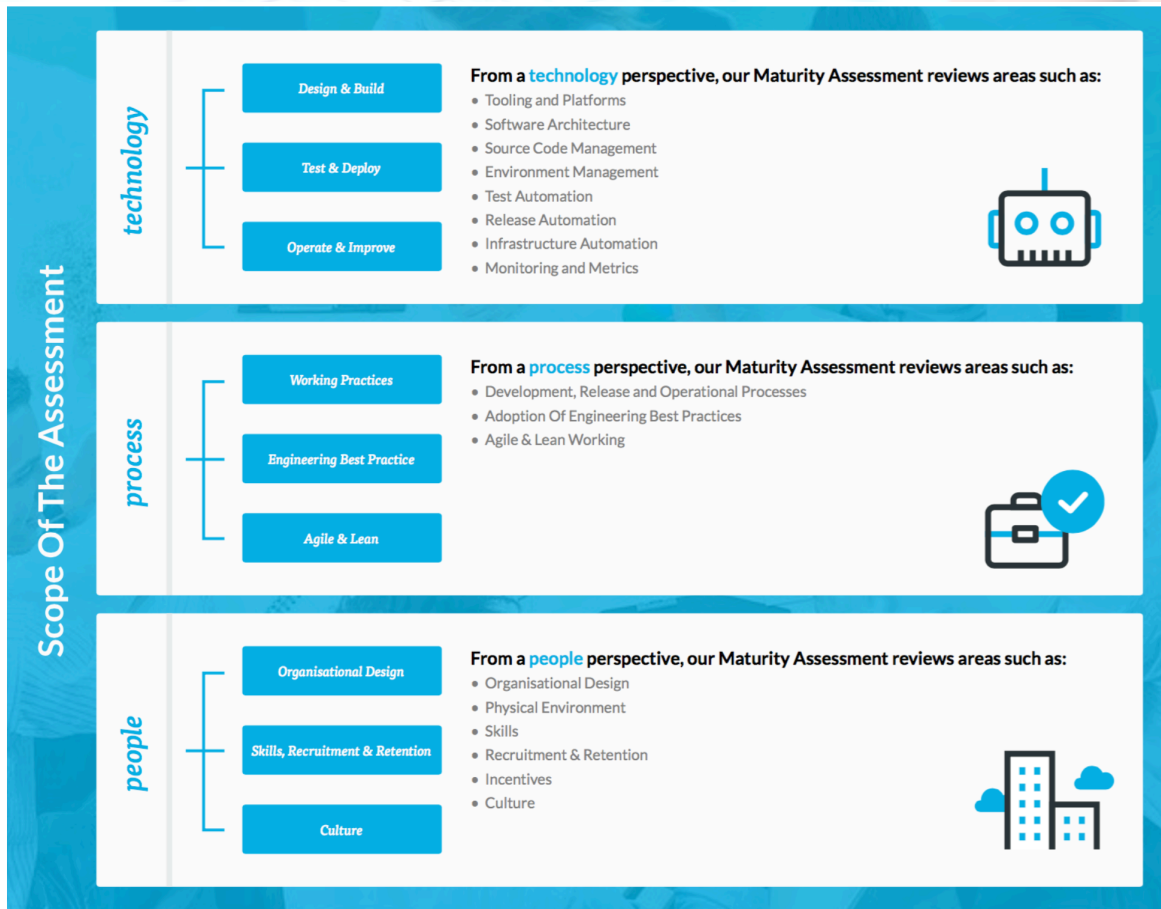


Surprise! **Banks Are Surprisingly DevOps Mature!**

Agile Adoption
Good Dev/Test Integration
Good Dev/Ops Integration
SOA Architecture
High Levels Of Automation
SHTF Moments

Better Than Many Other Industries!

Measuring, Benchmarking And Assessing DevOps Maturity

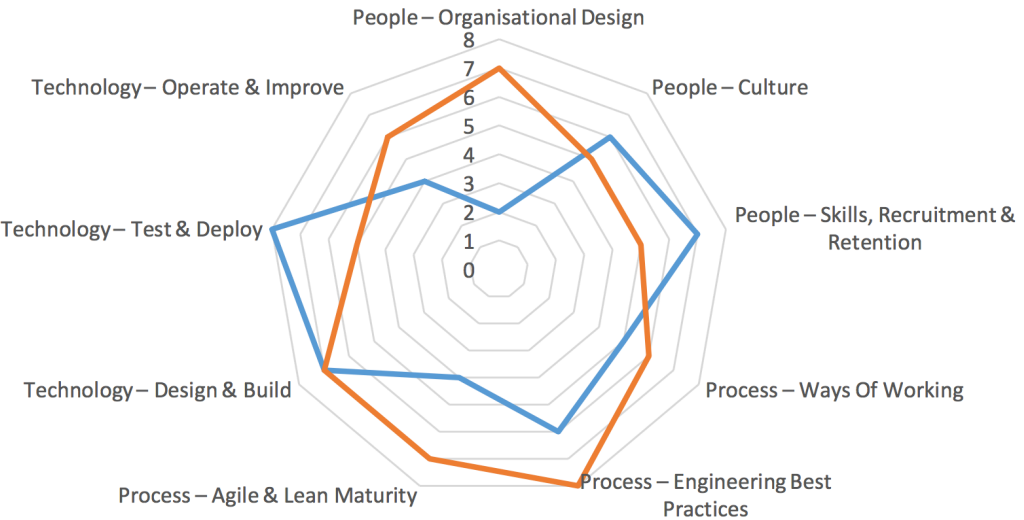
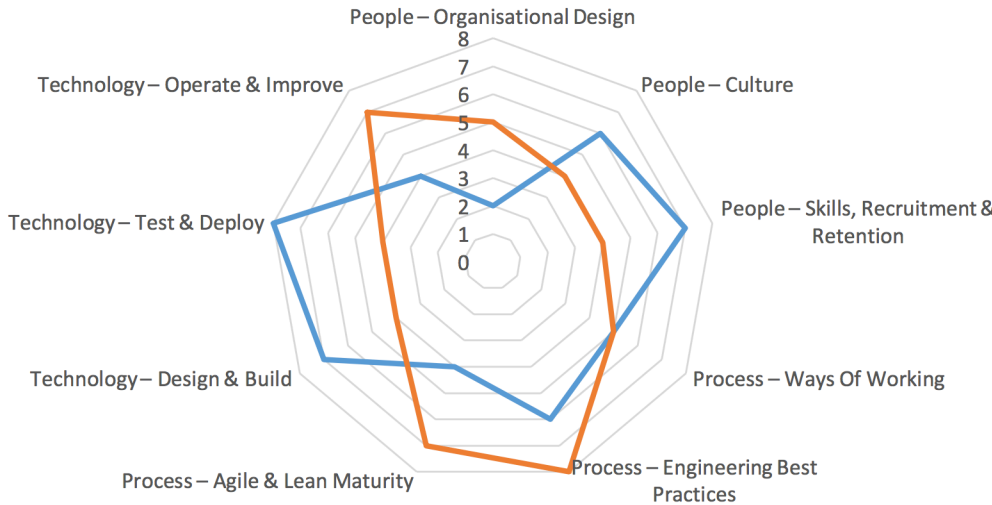


The key to DevOps in a traditional banking environment is a rigorous approach

We need to articulate the benefits to the business case clearly and in hard numbers

We need to benchmark, measure and improve with hard numbers behind it

Measuring, Benchmarking And Assessing DevOps Maturity



Building The Business Case

Efficiency Benefits

Paradigm	Category	Subcategory	Efficiency Factor	Your Maturity Score	Potential Efficiency Benefit Uplift	SDLC Phase
Technology	Engineering Best Practice	Automated merge activity	2.00%	20.00%	1.60%	Development
Technology	Engineering Best Practice	Earlier integration	3.00%	10.00%	2.70%	Release
Technology	Operate & Improve	Raising percent of succesful deploym	4.00%	15.00%	3.40%	Development
Technology	Operate & Improve	Reduced wait time for environment	2.00%	20.00%	1.60%	Test
Technology	Operate & Improve	Reduced environment inconsistency	2.00%	20.00%	1.60%	Test
Technology	Test & Deploy	Increased unit testing	4.00%	60.00%	1.60%	Test
Technology	Test & Deploy	Increased acceptance testing	3.00%	50.00%	1.50%	Test
Technology	Test & Deploy	Earlier performance testing	4.00%	60.00%	1.60%	Test
Technology	Test & Deploy	Reduced project management activit	3.00%	25.00%	2.25%	Release
Technology	Test & Deploy	Reduced release co-ordination	2.00%	20.00%	1.60%	Release
Technology	Operate & Improve	Self service database activities	3.00%	50.00%	1.50%	Development
Technology	Operate & Improve	Self service administer application se	2.00%	10.00%	1.80%	Project Management



Project Phase By Cost (Post Efficiency Savings)

Column1	Development Onshore	Development Offshore	Test Onshore	Test Offshore	Release	Project Management	Total
Project A	£99,324.00	£24,670.80	£26,524.80	£7,460.10	£4,205.25	£14,054.63	£176,239.58
Project B	£96,120.00	£5,253.60	£23,577.60	£6,631.20	£5,046.30	£28,109.25	£164,737.95
Project C	£131,364.00	£2,407.90	£11,199.36	£3,149.82	£5,607.00	£68,711.50	£222,439.58
Project D	£25,632.00	£3,940.20	£38,313.60	£10,775.70	£4,765.95	£24,986.00	£108,413.45
Project E	£52,866.00	£2,451.68	£26,524.80	£7,460.10	£5,887.35	£14,054.63	£109,244.56
Project F	£46,137.60	£6,348.10	£29,472.00	£8,289.00	£6,167.70	£18,739.50	£115,153.90
Total:	£451,443.60	£45,072.28	£155,612.16	£43,765.92	£31,679.55	£168,655.50	£896,229.01
Saving	£112,156.40	£88,247.72	£13,347.84	£3,754.08	£187,520.45	£6,844.50	£411,870.99

The Surprising Truth About DevOps in Banks



Posted by [Benjamin Wootton](#) on Nov 23, 2015 | [5](#) [Discuss](#)

Share        

[My Reading List](#)

[Read later](#)

I have spent much of my career as a software engineer within four global Investment Banks, working on a mixture of trading, risk management, and middle office systems. Overall, I spent around around five years working on development and DevOps work in this industry.

Since establishing [Contino](#), a DevOps transformation consultancy, I have worked across a much more diverse set of industries including retail, media, insurance, education and manufacturing, where I have been advising our clients on DevOps, Continuous Delivery and related agile practices with the aim of speeding up their software delivery and release cycles.

One thing that has been fascinating from this experience is looking at the contrast between banking and other industries. I have observed first hand that banks are a very different animal to the rest of enterprise IT when it comes to DevOps adoption, with their own challenges, but also their own unique opportunities.

Though many of the people within banking will be surprised by this, I actually think banks are in many ways relatively DevOps mature and in an even better situation for

Related Vendor Content

 [How to Set Up a Git Repository](#)

RELATED CONTENT

[Nurturing and Growing Agile Teams](#) Mar 02, 2016

[Q&A on the Lean IT Field Guide](#)
Feb 24, 2016



[Living with Passion in an Agile Age](#)
Feb 13, 2016



[Agile Projects to Agile Organizations: The Journey](#) Jan 02, 2016



[Hacking Culture with Chat Robots](#)
Oct 01, 2015



A close-up photograph of a person's hands holding a pencil over a clipboard. The clipboard contains a document with a bar chart and a pie chart. The background is slightly blurred, showing another person's hand and a stack of papers.

Thanks! Questions?

Benjamin.Wootton@sendachi.com