

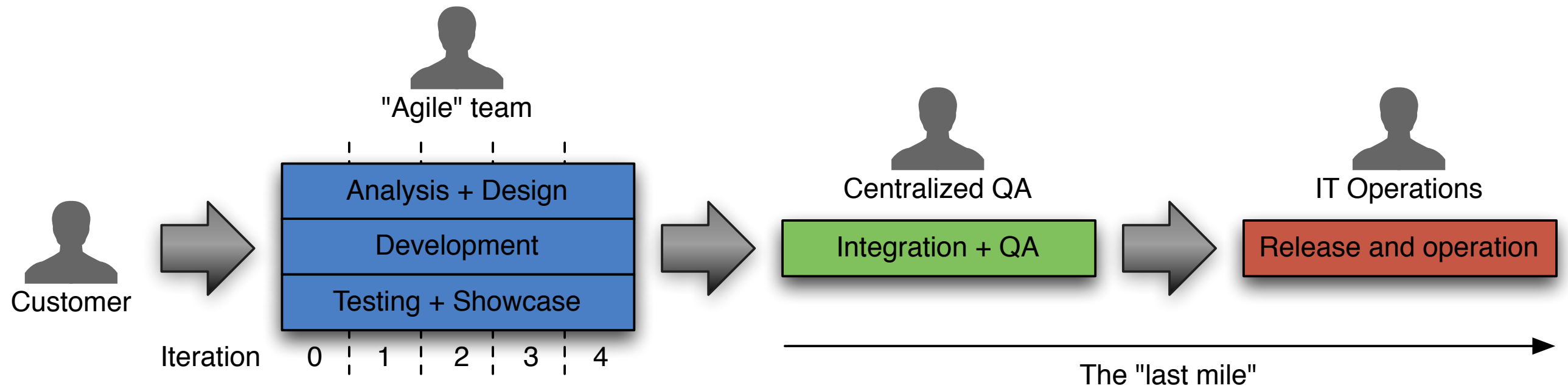
# Continuous Delivery

**Martin Fowler, Jez Humble**

YOW! Melbourne, 2 December 2011

<http://thoughtworks-studios.com/>

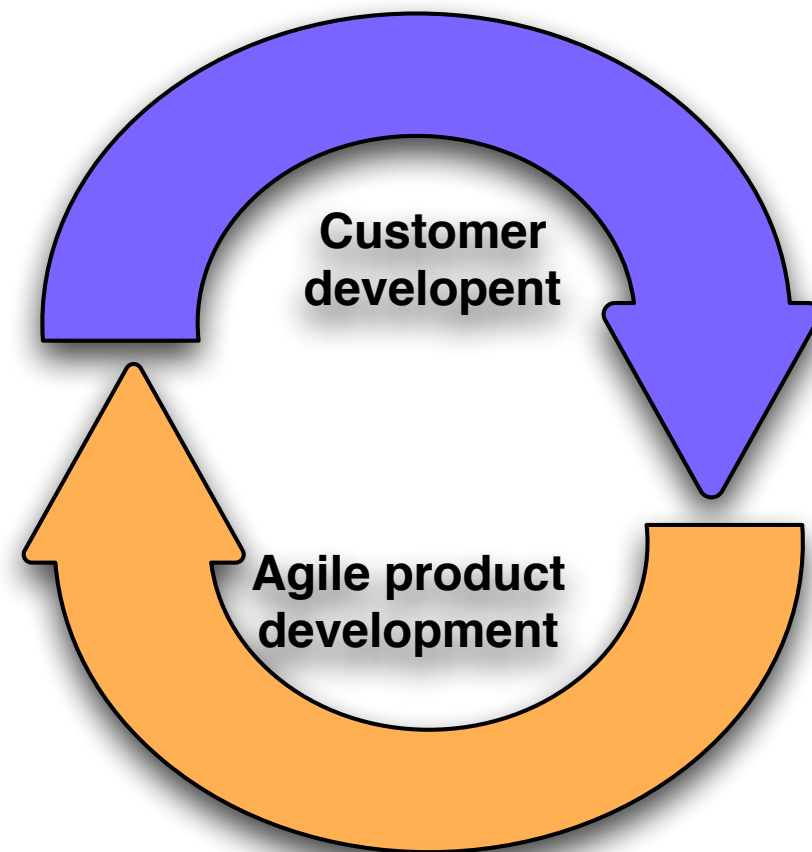
# agile 101





# releasing frequently

feedback from users



Eric Ries, "The Lean Startup" <http://bit.ly/8ZoX5F>

A black and white close-up portrait of Steve Jobs. He is wearing his signature round glasses and has a slight beard. His right hand is resting against his face, with his fingers spread. The background is dark, making his face the central focus.

**innovate**

**You can't just ask  
customers what  
they want and then  
try to give that to  
them.**

**By the time you get  
it built, they'll want  
something new.**

Steve Jobs

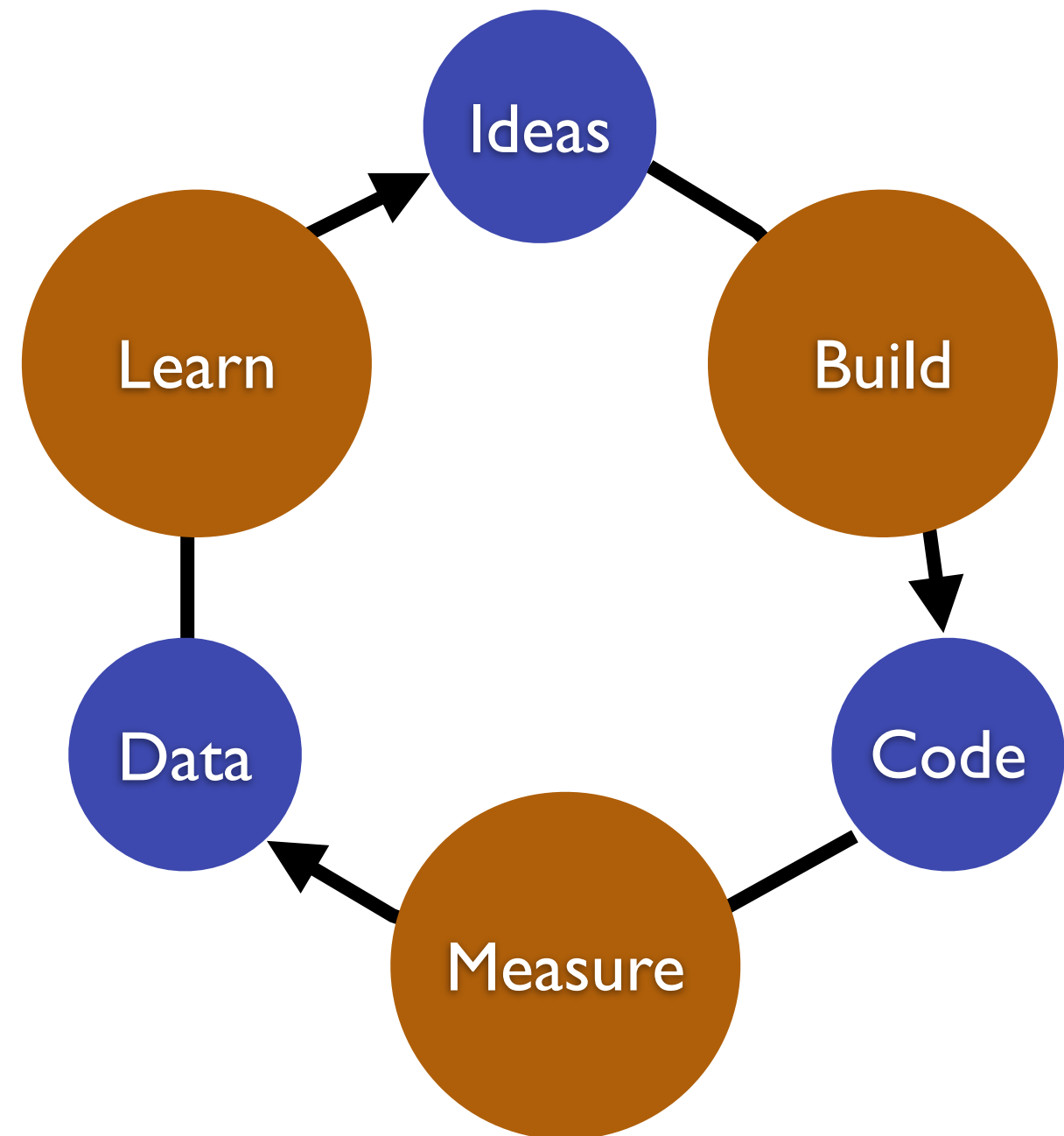
# scientific method

create hypothesis

deliver **minimum  
viable product**

get feedback

(repeat)



Eric Ries, "The Lean Startup" <http://bit.ly/8ZoX5F>

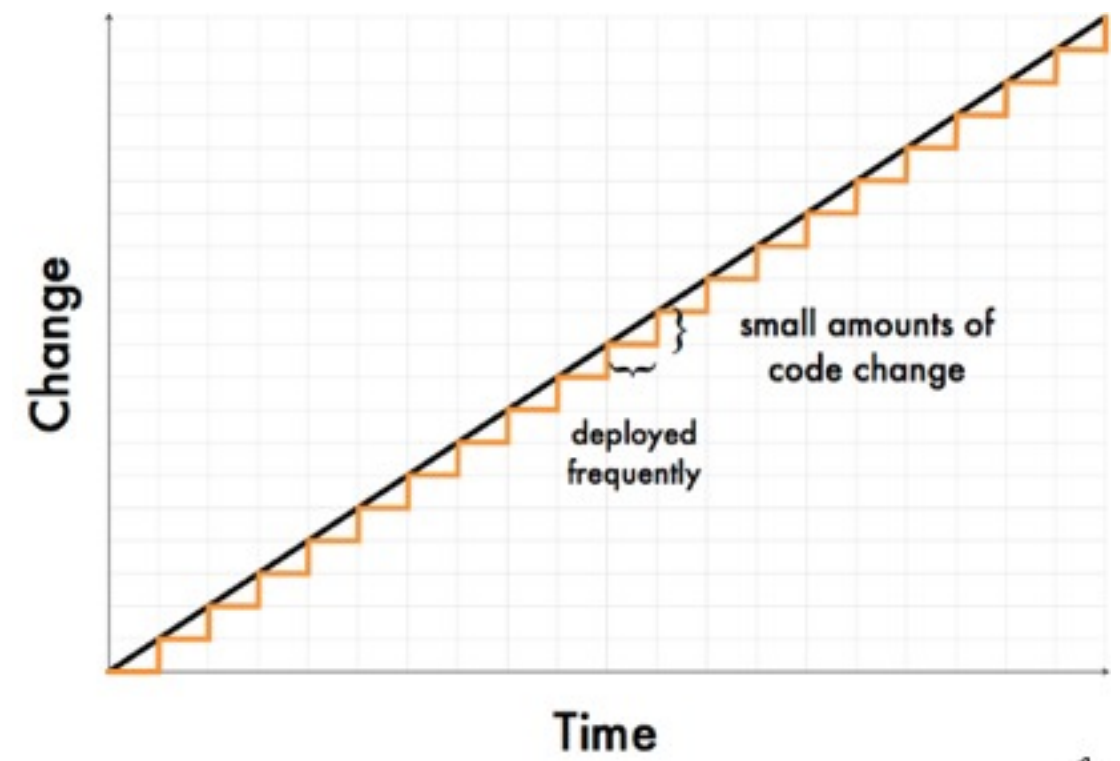
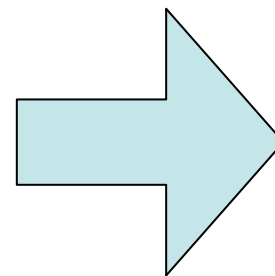
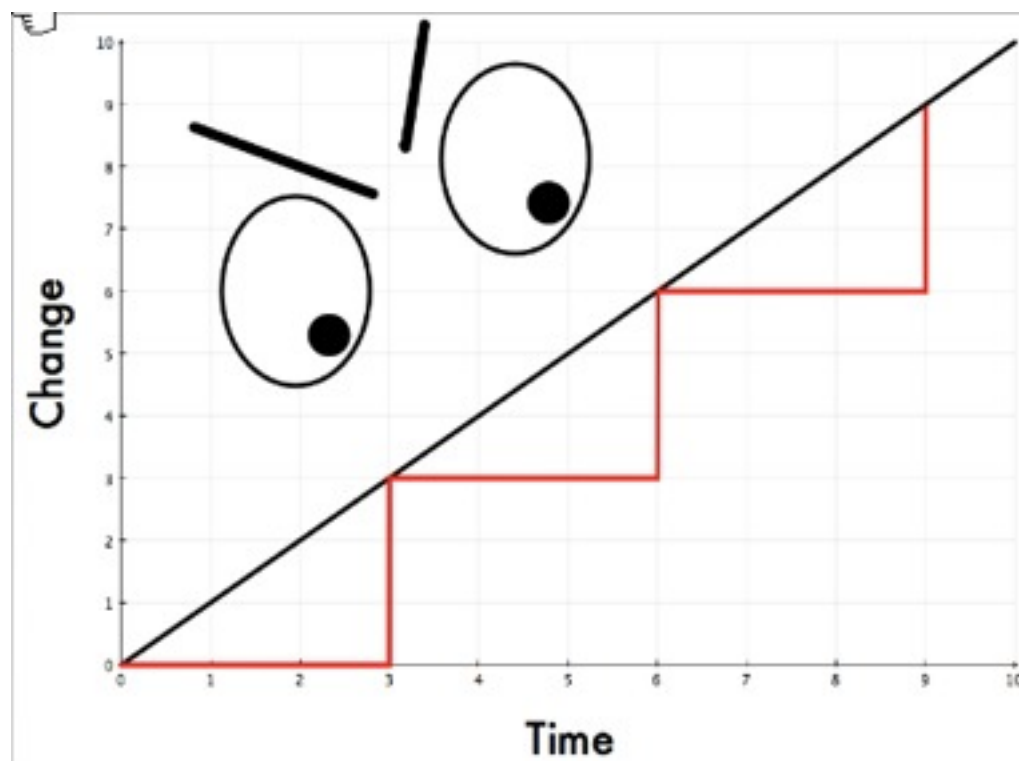
# ask this question

“How long would it take your organization to deploy a change that involved just one single line of code? Do you do this on a repeatable, reliable basis?”

Mary and Tom Poppendieck, *Implementing Lean Software Development*, p59.

# releasing frequently

feedback from users  
reduce risk of release

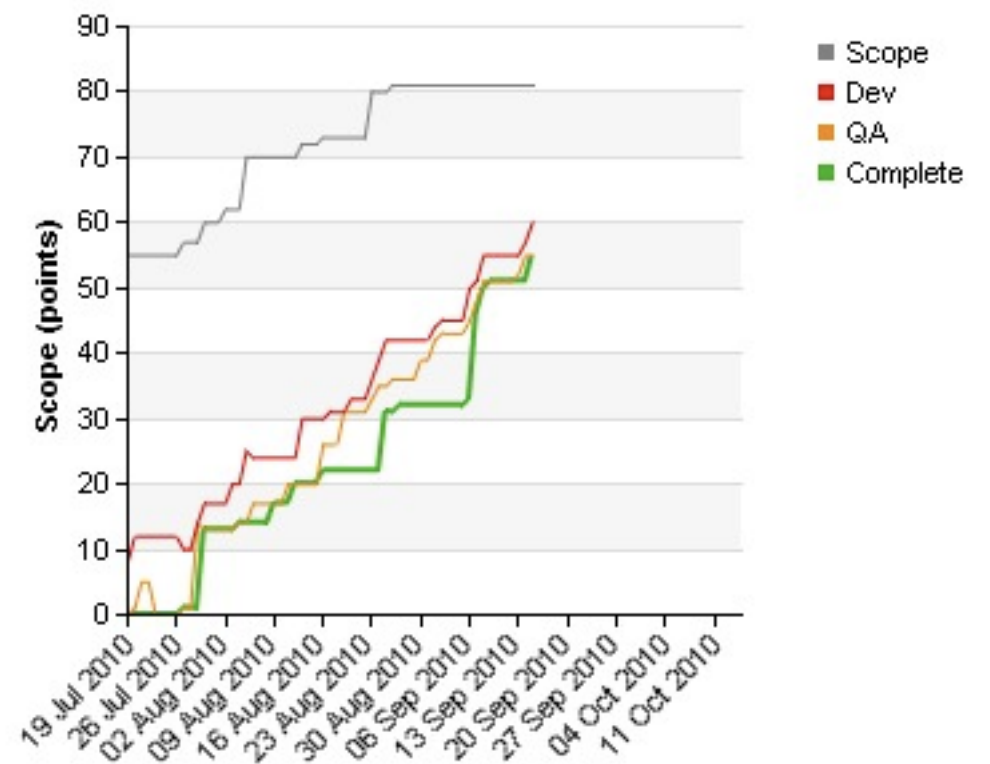


John Allspaw: "Ops Metametrics" <http://slidesha.re/dsSZlr>



# releasing frequently

feedback from users  
reduce risk of release  
real project progress



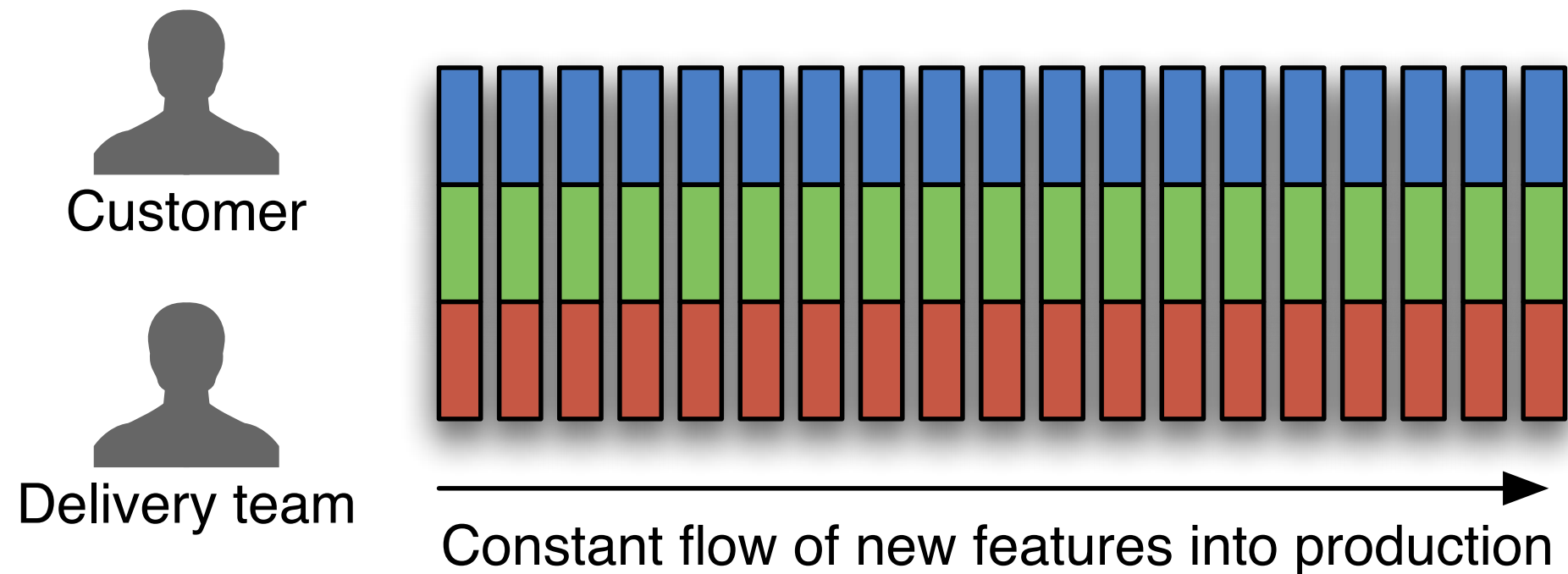
# agile manifesto

Our highest priority is to satisfy the customer through early and **continuous delivery** of **valuable software**

# production-ready software

**Fast, automated feedback on the production readiness of your applications every time there is a change - to code, infrastructure, or configuration**

# continuous delivery



Software always production ready

Releases tied to business needs, not operational constraints

# continuous delivery

automation

patterns and practices

collaboration

# ingredients

configuration management

continuous integration

automated testing



Local Workstation



Mainline Server



pull

push

✓  
Done!



Local Workstation

# Everyone Commits



# To the Mainline



pull

# Every Day



push



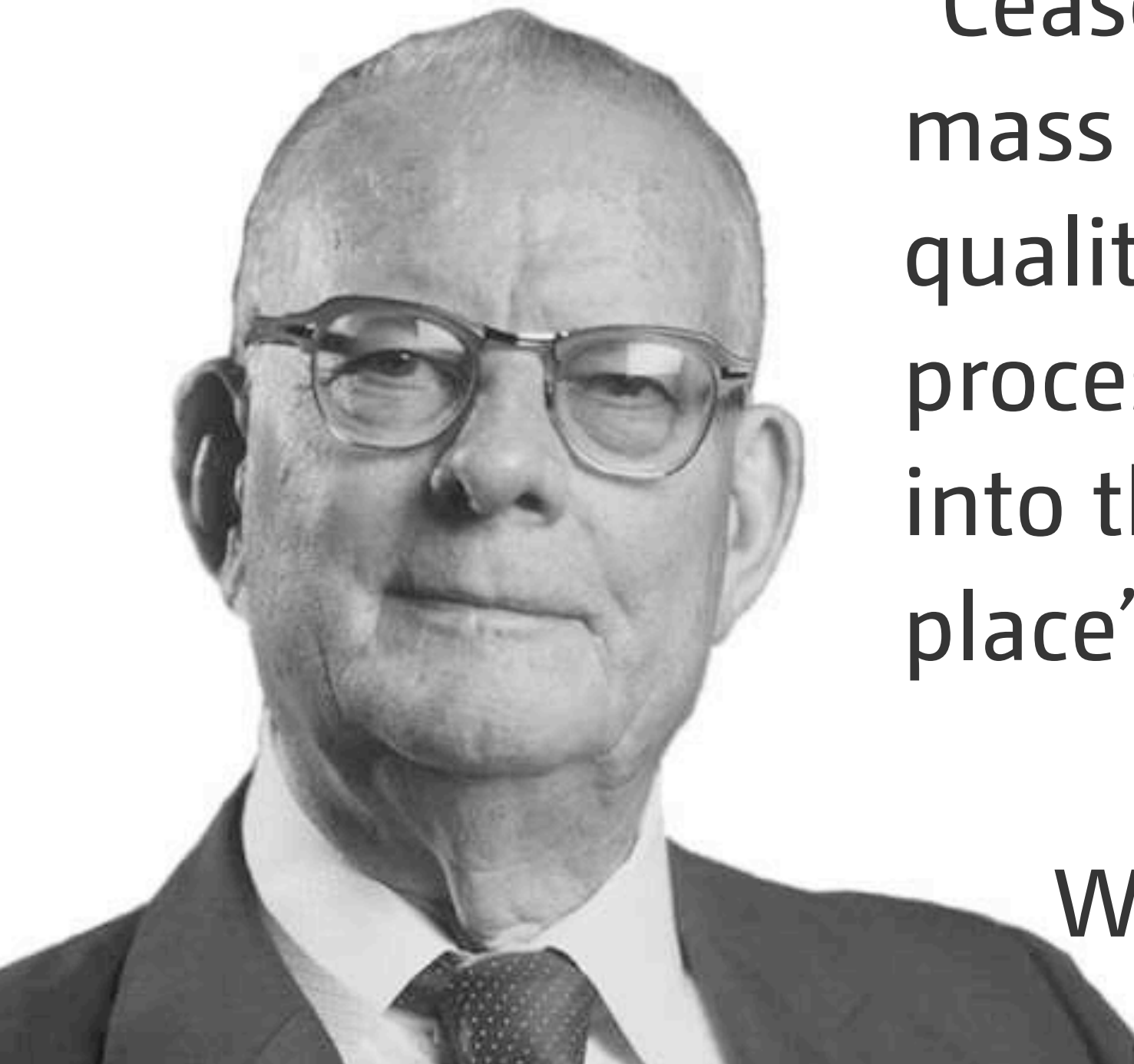
✓  
Done!



# build quality in

“Cease dependence on mass inspection to achieve quality. Improve the process and build quality into the product in the first place”

W. Edwards Deming



# different kinds of testing

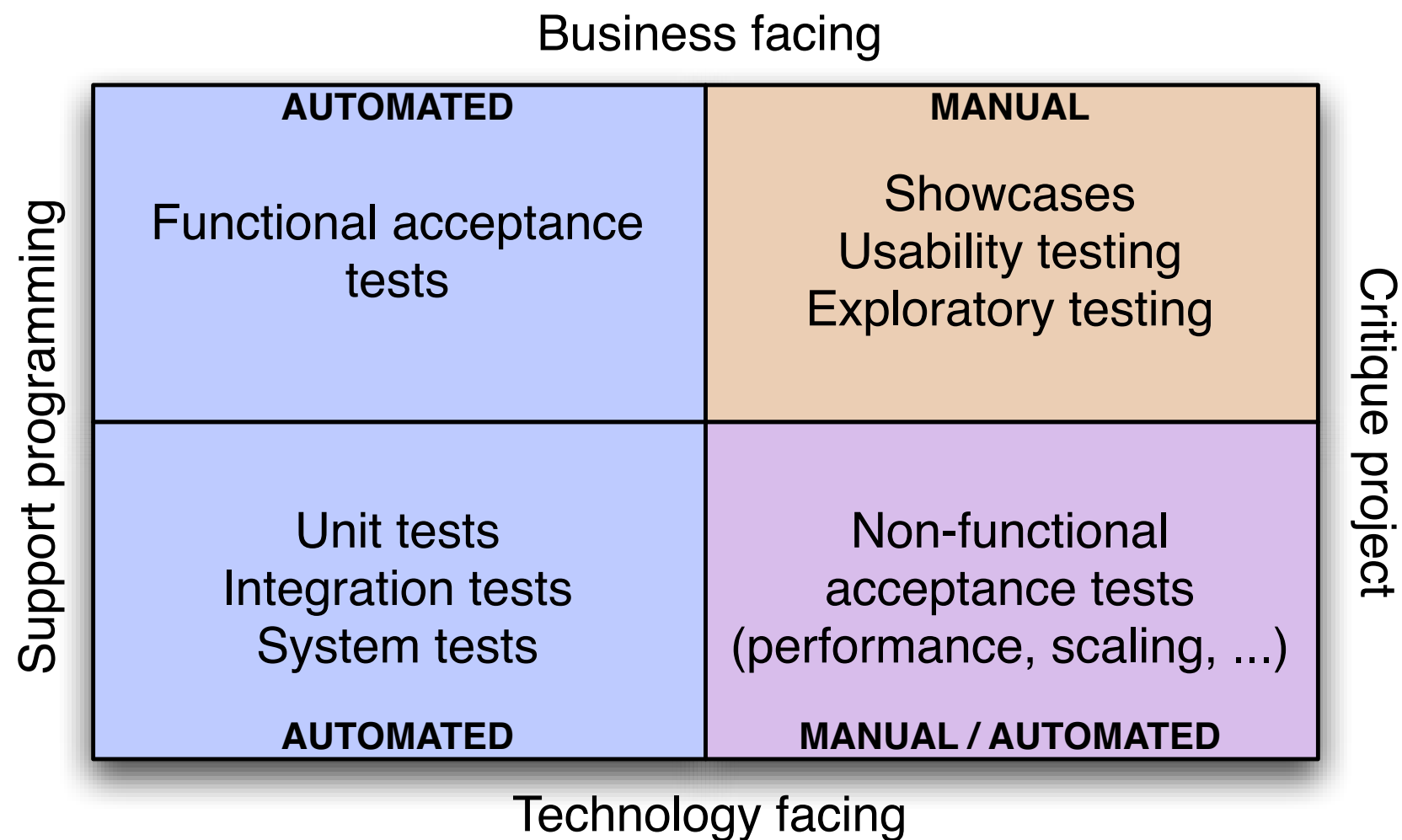


Diagram invented by Brian Marick

# deployment pipeline

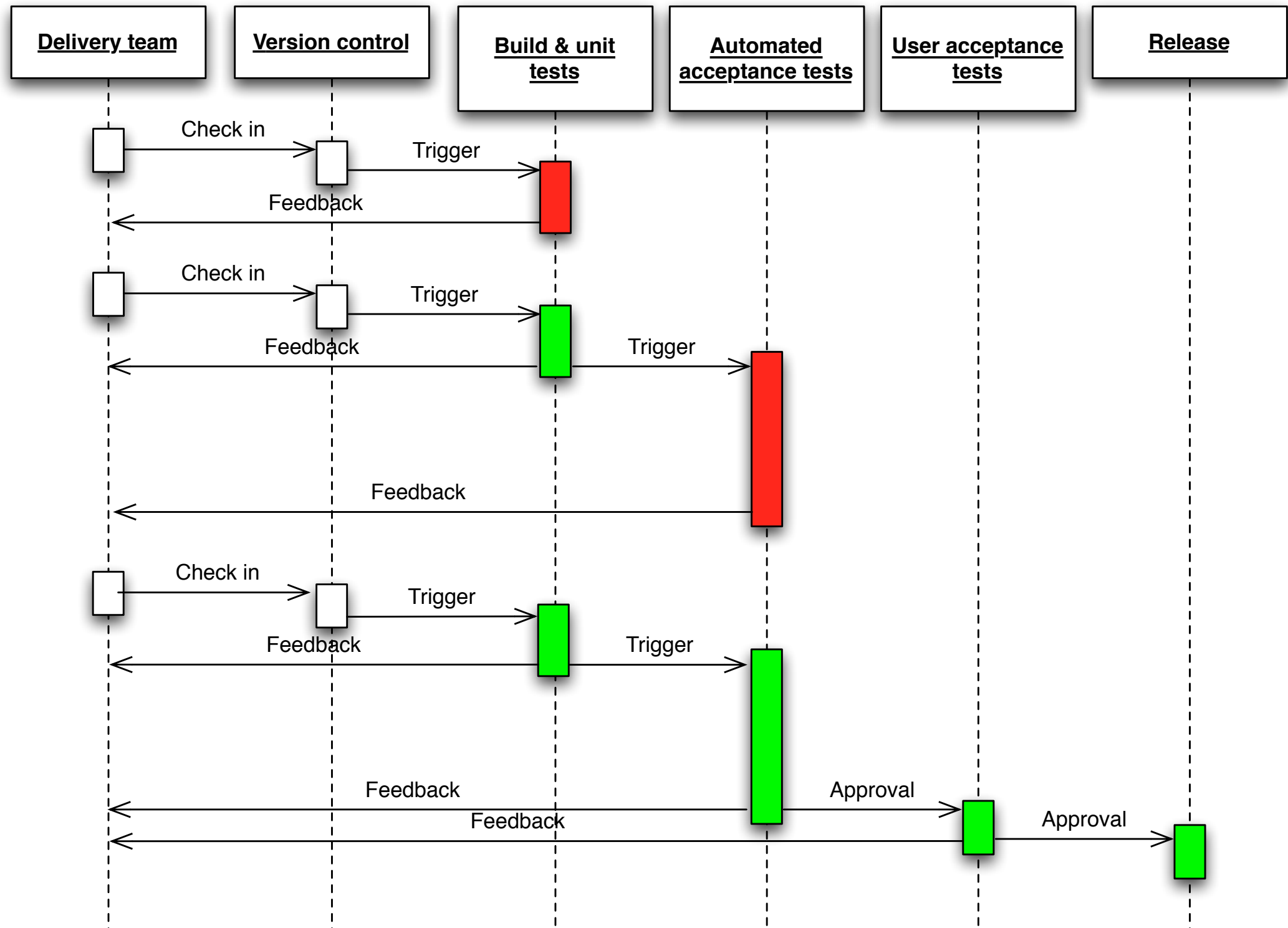
an automated implementation of your system's build, deploy, test, release process

visibility

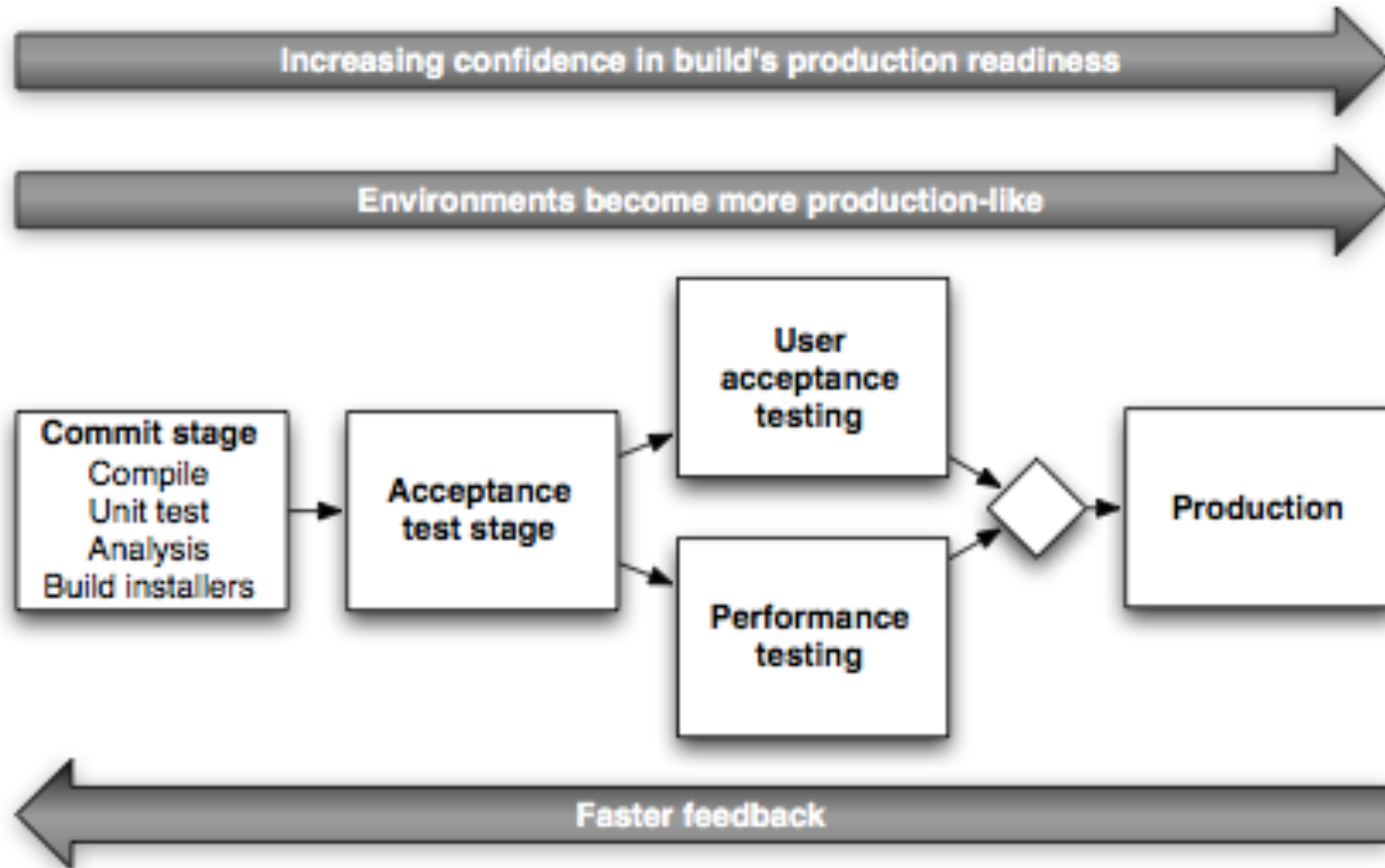
feedback

control

# deployment pipeline



# deployment pipeline



# deployment pipeline

	Build	Container	Browser	UAT	Prod
<b>1.2.33</b> revision: 35 1 day ago by demo	 auto	 auto	 manual	 manual	
<b>1.2.32</b> revision: 34 1 day ago by demo	 auto	 auto	 manual	 manual	
<b>1.2.31</b> revision: 33 6 days ago by demo	 auto	 auto	 manual	 manual	
<b>1.2.30</b> revision: 32 7 days ago by demo	 auto	 auto	 manual	 manual	
<b>1.2.29</b> revision: 31	 auto	 auto	 manual	 manual	
<b>Subversion - http://chistdcrsdmo01/svn/demo/trunk/</b> demo #12 Made some changes to import 30	 auto	 auto	 manual	 manual	
revision: 30 13 days ago by demo	 auto	 auto	 manual	 manual	

# reducing release risk

automate provisioning and deployment

ensure devs, testers and ops collaborate throughout

# reducing release risk

devops

incrementalism

decoupling deployment and release



# devops

culture  
automation  
measurement  
sharing

feature toggles

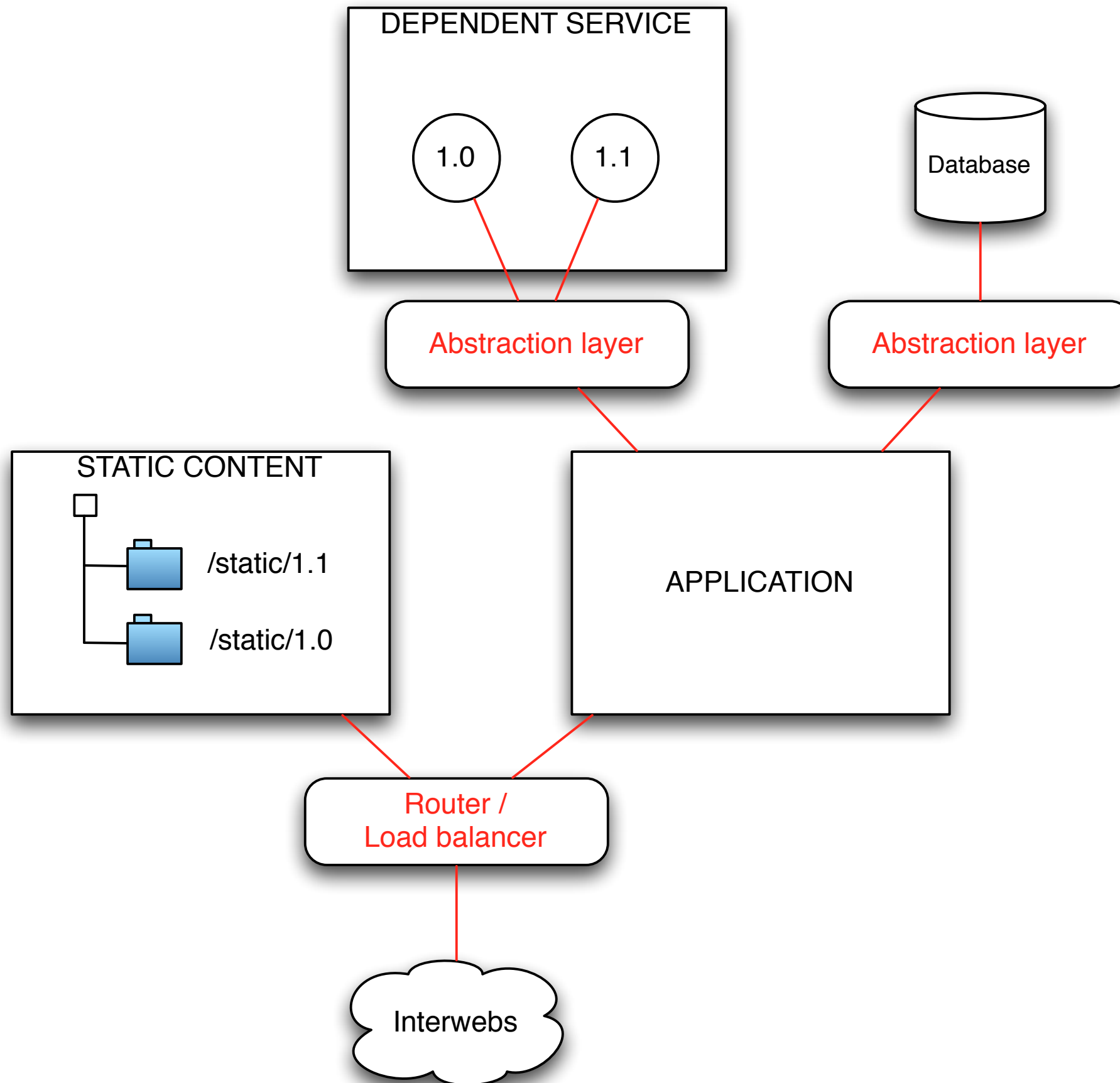
blue-green deployments

canary releases

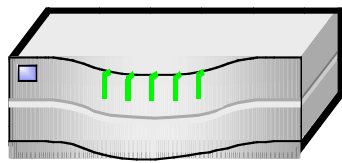
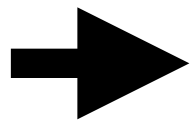
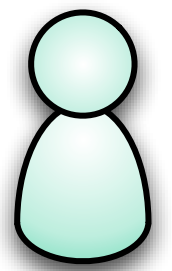
**low risk releases  
are incremental**

dark launching

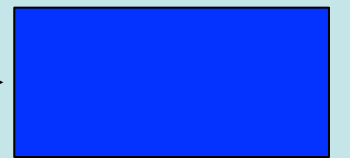
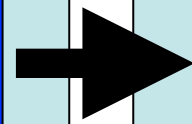
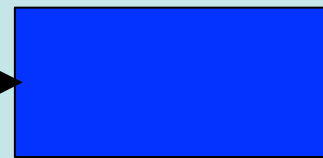
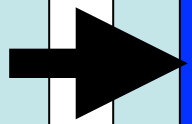
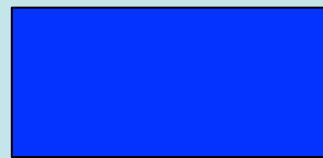
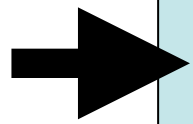
production immune system



# blue-green deployments



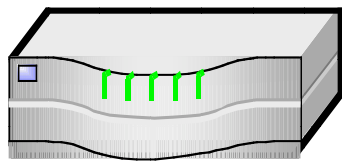
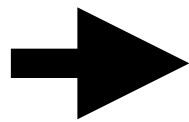
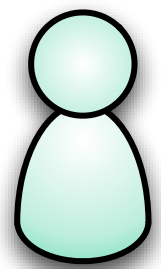
router



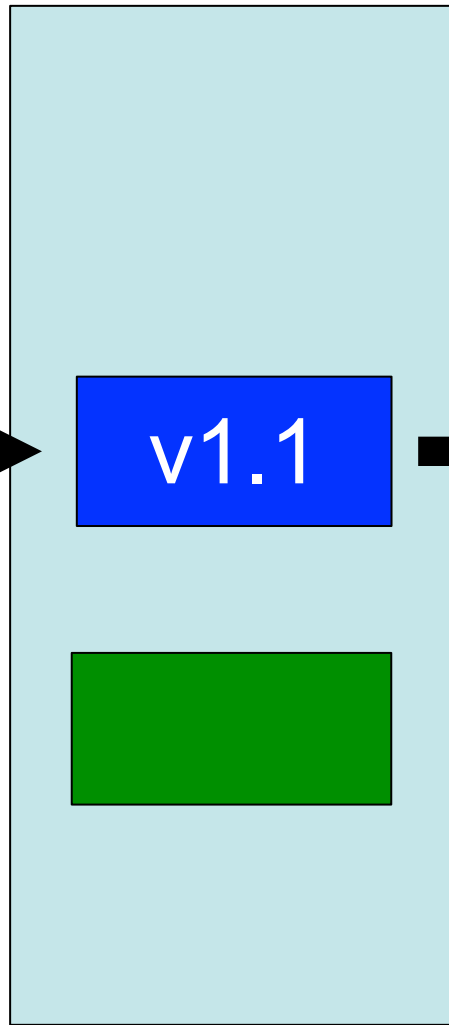
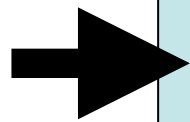
web  
server

app  
server

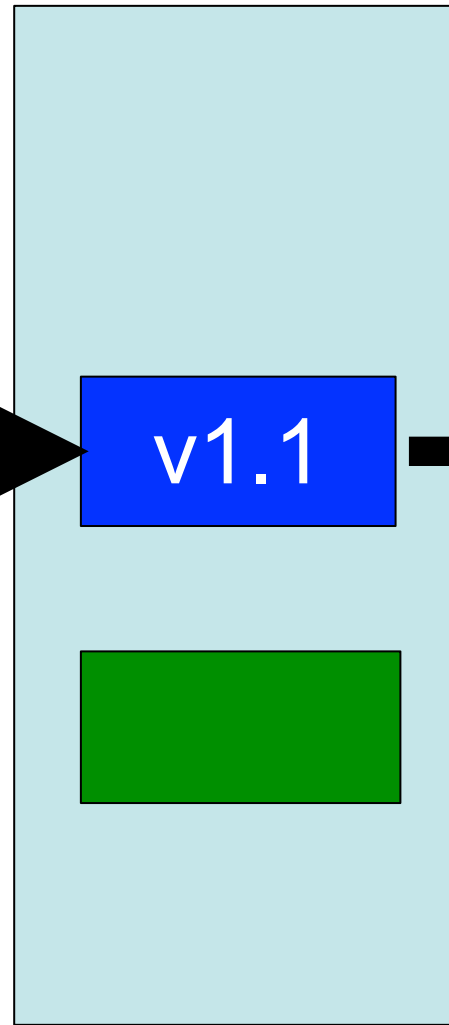
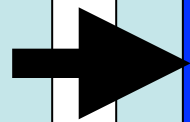
DB  
server



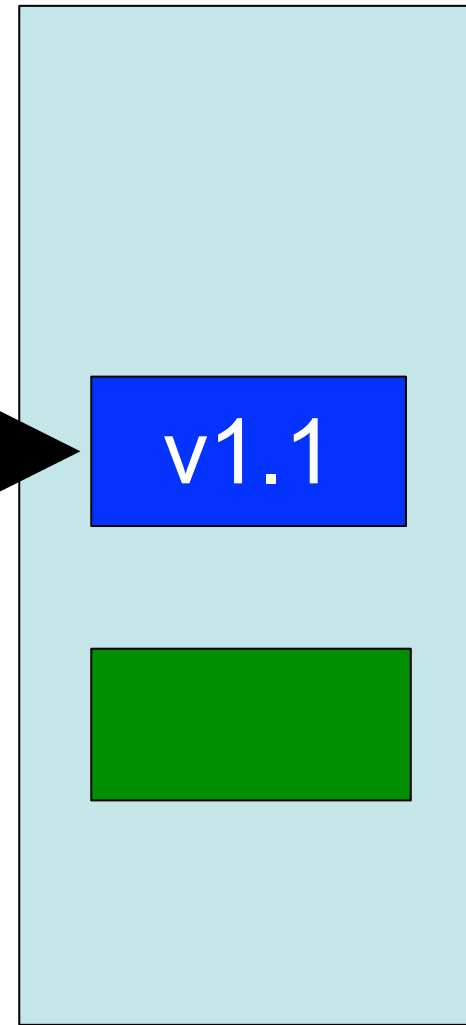
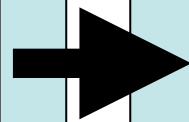
router



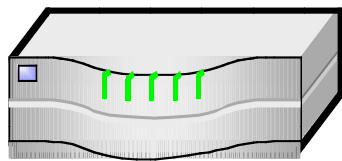
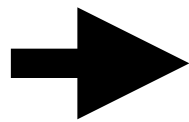
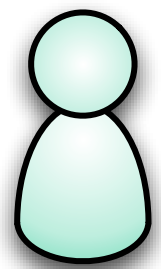
web  
server



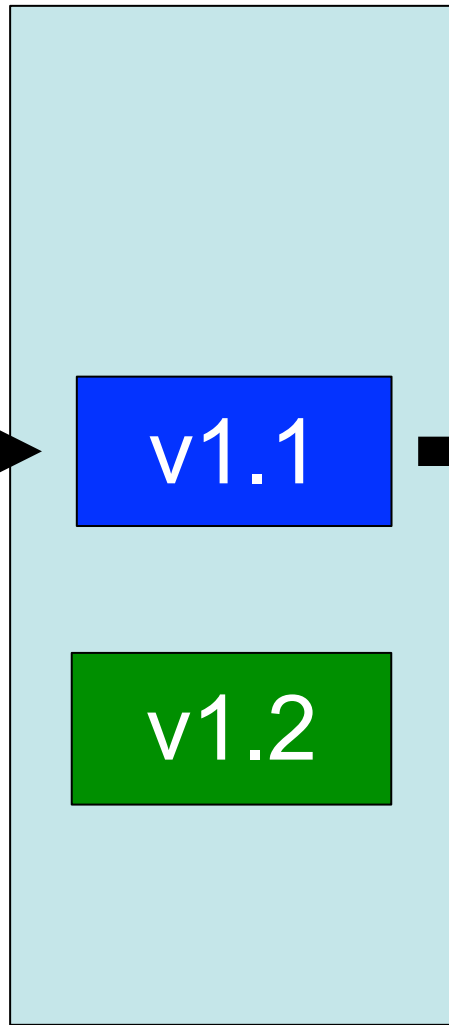
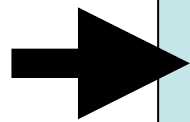
app  
server



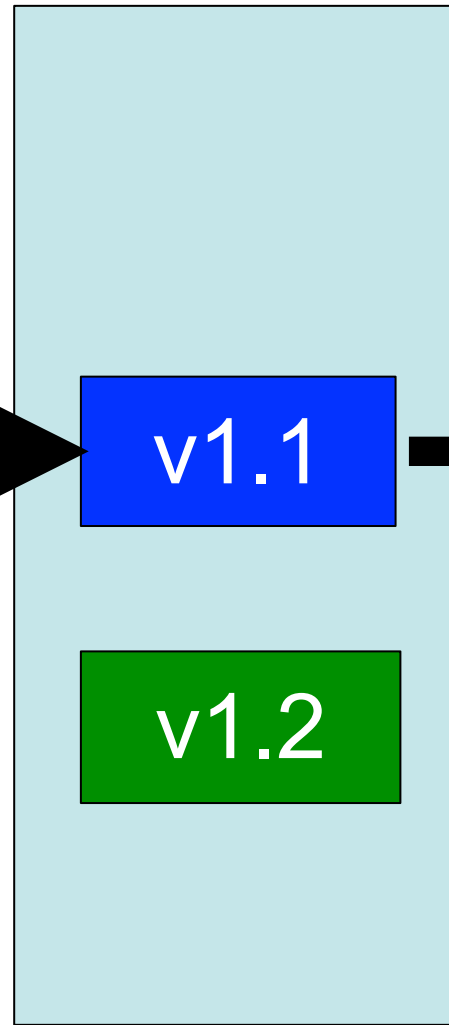
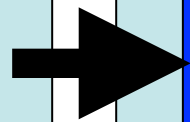
DB  
server



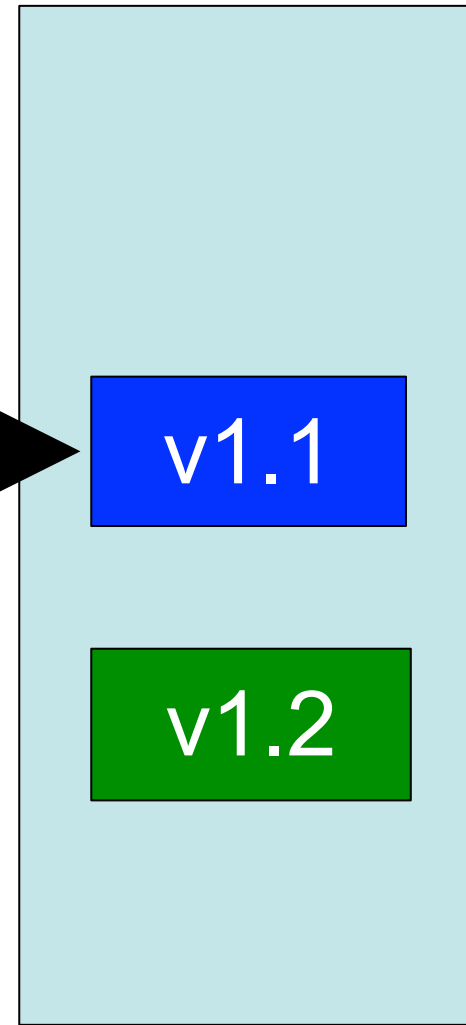
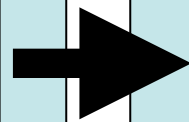
router



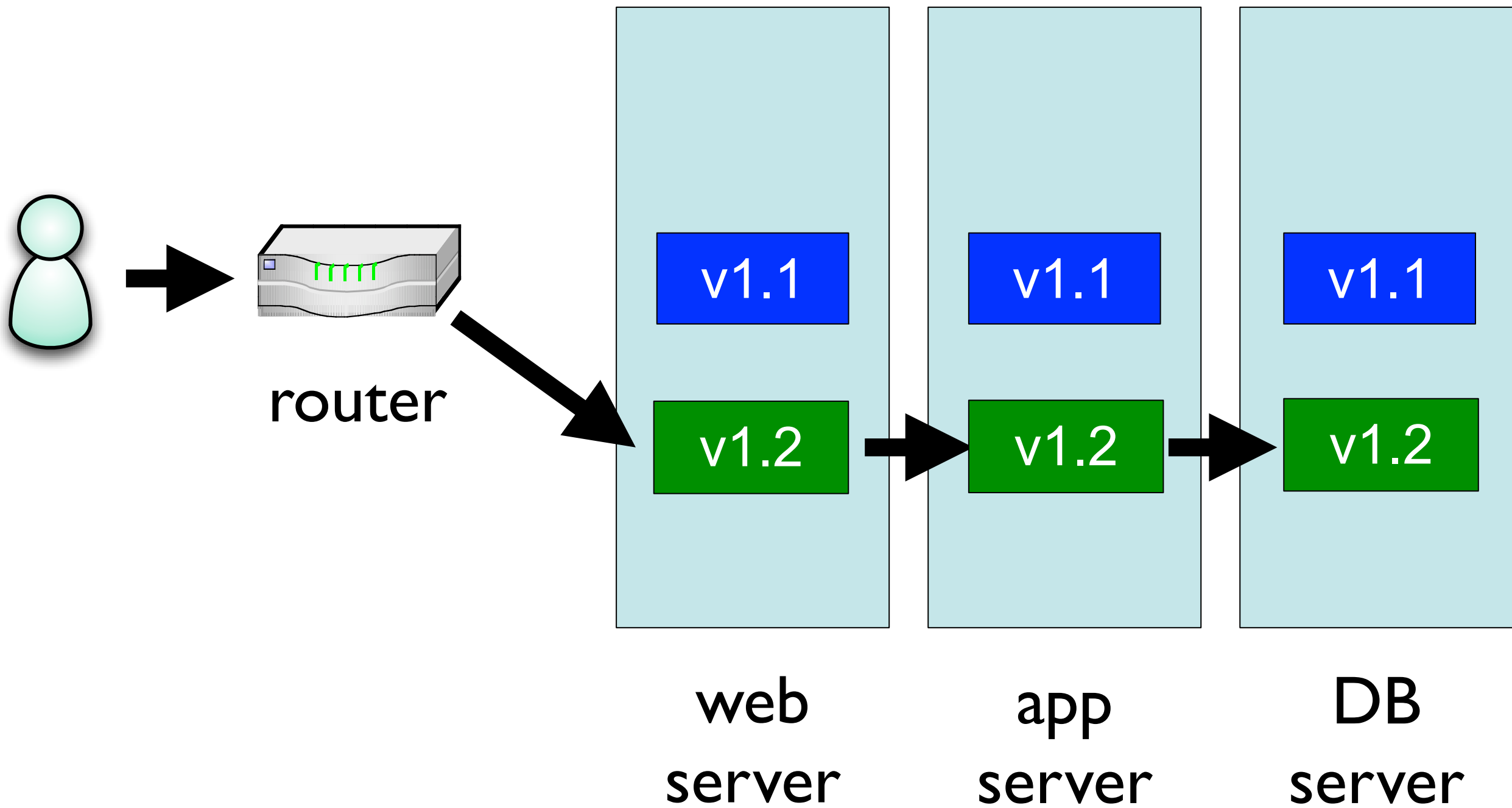
web  
server



app  
server



DB  
server





**release !=  
deployment**

# feature toggles

## Config File

```
[featureToggles]
wobblyFoobars: true
flightyForkHandles: false
```

## some.php

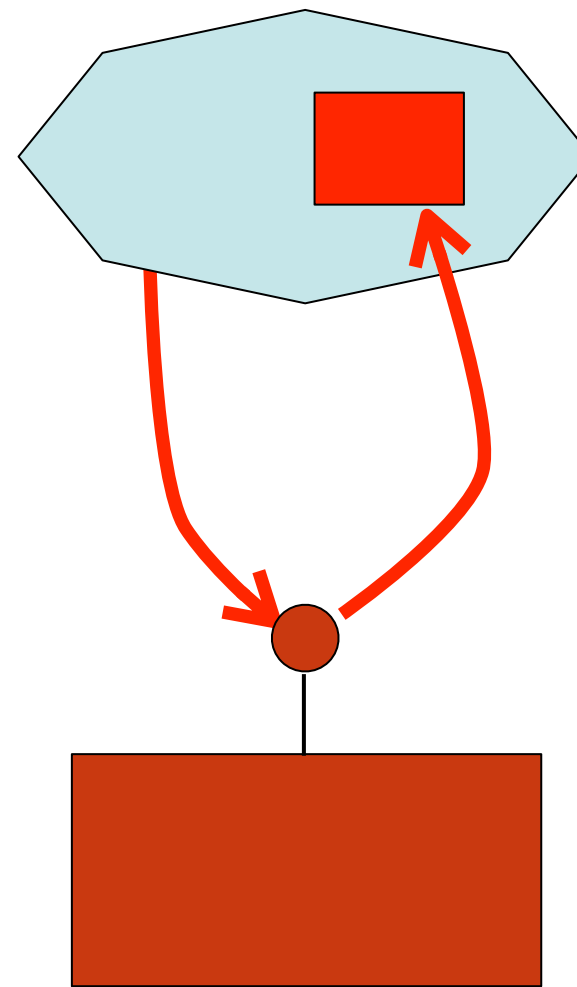
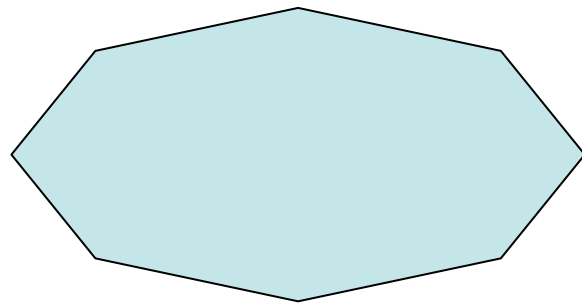
```
<?if ($wobblyFoobars) {?>
    ... various UI elements
<?}?>
```

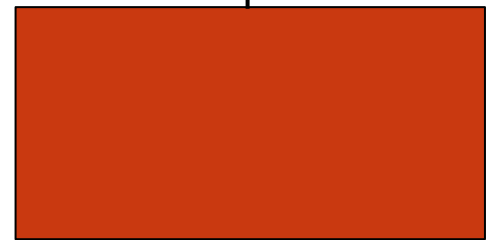
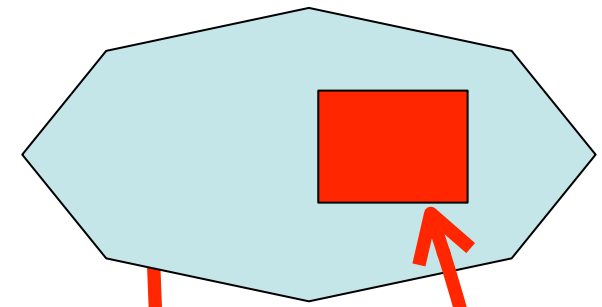
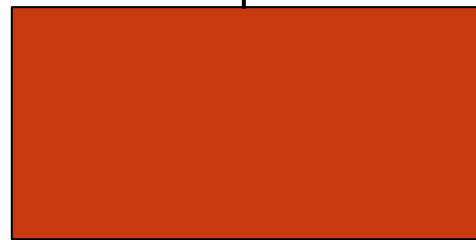
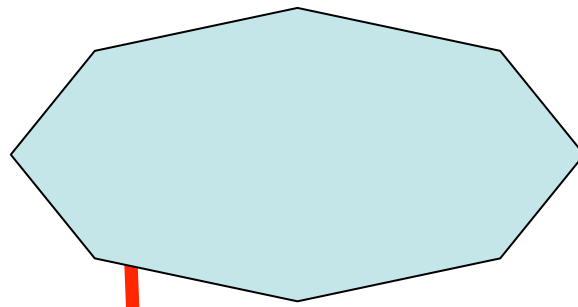
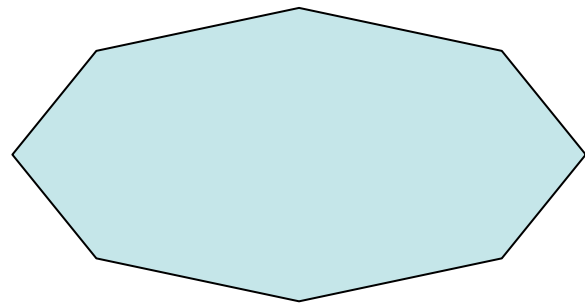
## other.php

```
$fork_handle = ($featureConfig->isOn('flightyForkHandles)) ?
    new flightyForkHandler(aCandle) :
    new forkHandler(aCandle);
```

Stolen from Martin Fowler <http://martinfowler.com/bliki/FeatureToggle.html>

# Dark Launching





# people are the key

Get everyone together at the beginning

Keep meeting

Make it easy for everyone to see what's happening

Continuous improvement (kaizen)

# thank you!

<http://continuousdelivery.com/>  
<http://studios.thoughtworks.com/go>  
<http://thoughtworks.com/>

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[jez@thoughtworks.com](mailto:jez@thoughtworks.com)

#continuousdelivery

