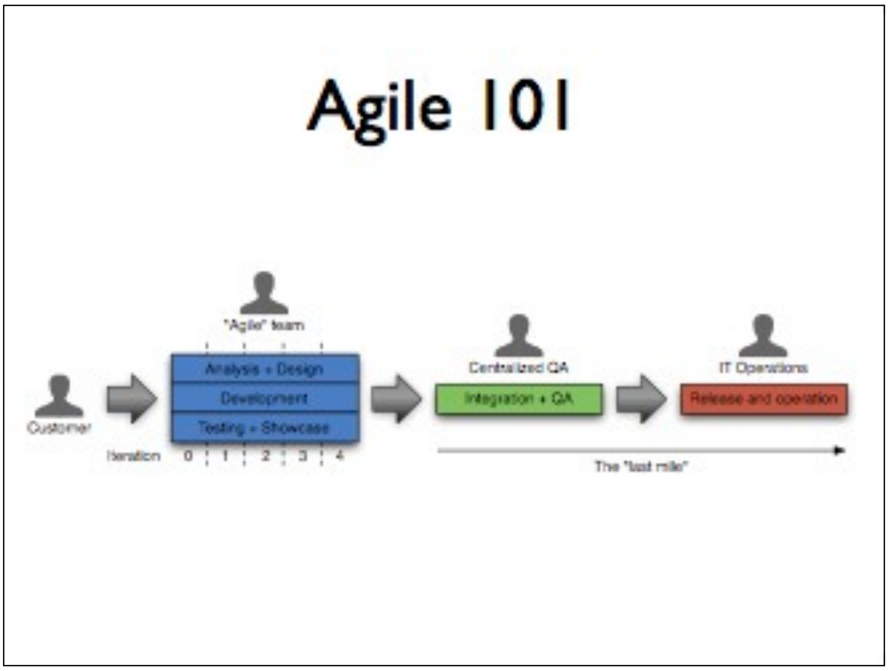
Continuous Delivery

Jez Humble, ThoughtWorks Studios
@jezhumble #continuousdelivery
QCon 2010, San Francisco

www.thoughtworks-studios.com



Agile 101

"Agile" team

Customer

Analysis + Design

Development

Testing + Showcase

Iteration 0 1 2 3 4

Centralized QA

Integration + QA

IT Operations

Release and operation

The "last mile"

web 2.0

disrupting traditional businesses

FEATURING

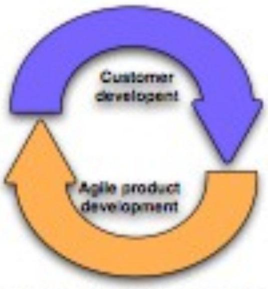
Flickr was last deployed 12 hours ago, including 9 changes by 5 people.

In the last week there were 54 deploys of 636 changes by 23 people.

http://code.flickr.com/

releasing frequently

feedback from users

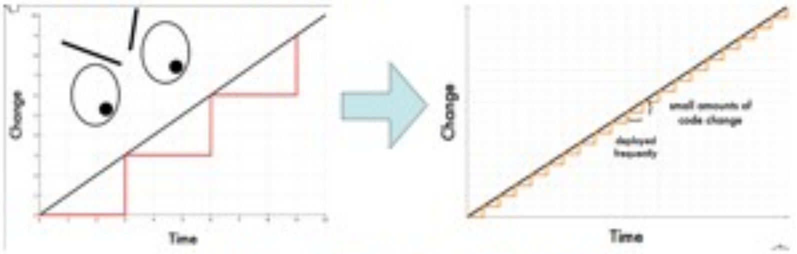


Eric Ries, "The Lean Startup" http://bit.ly/8ZoX5F

releasing frequently

feedback from users

reduce risk of release



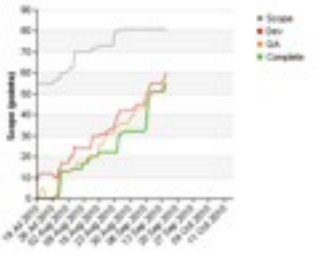
John Allspaw: "Ops Metametrics" http://slidesha.re/dsSZIr

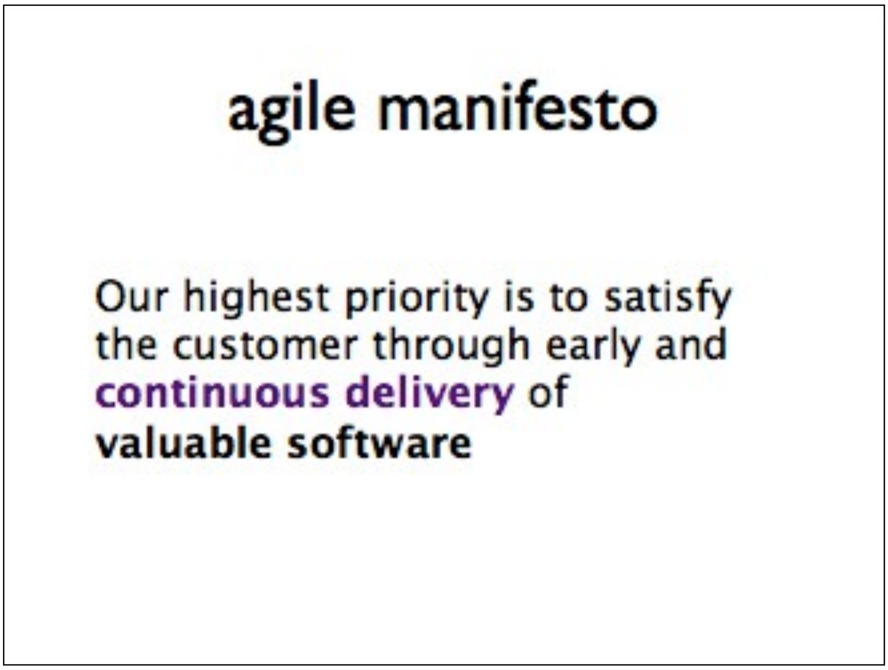
releasing frequently

feedback from users

reduce risk of release

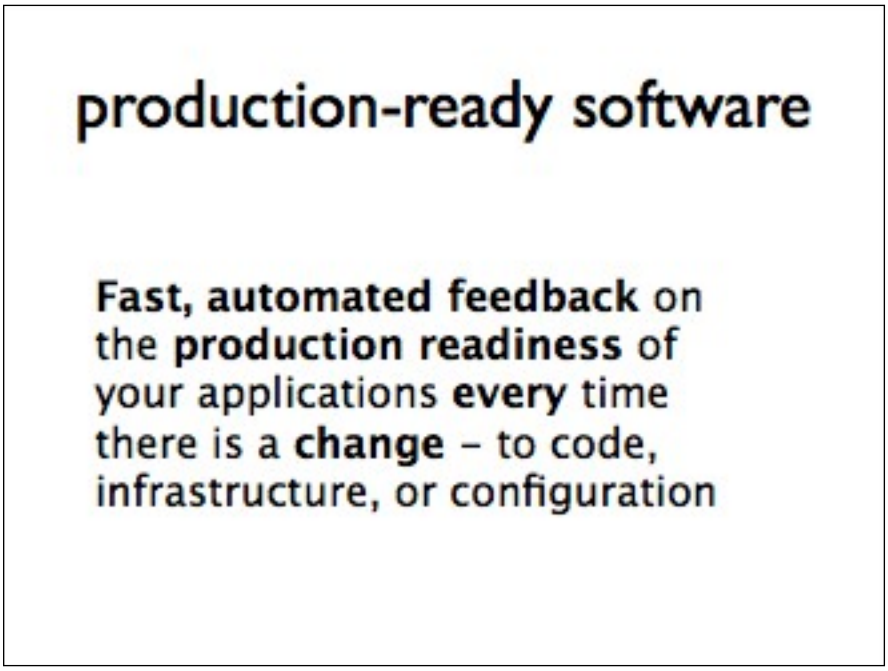
real project progress





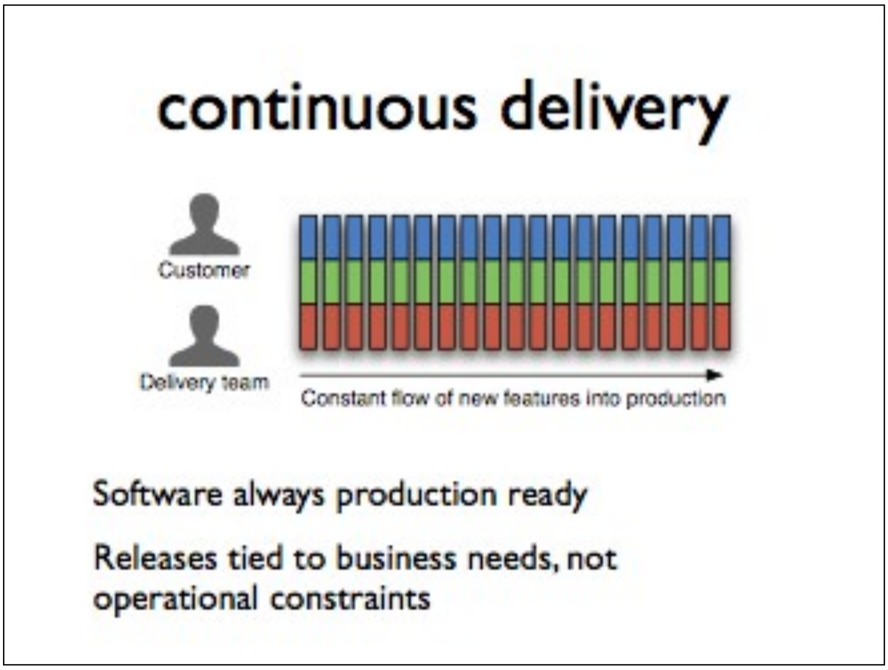
agile manifesto

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

enterprise lean startups

Business units act as VCs

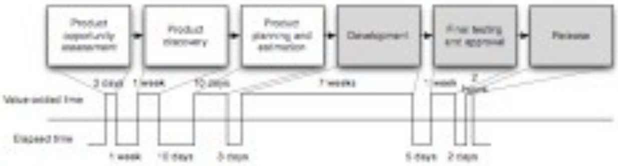
Products, not projects

Completely cross-functional teams

Works great with many small, distributed teams and RESTful architecture

BUT...

value stream mapping



deployment pipeline

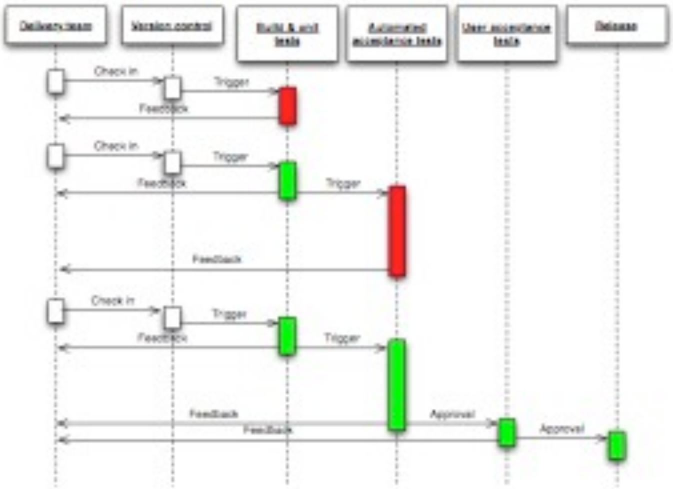
an automated implementation of your system's build, deploy, test, release process

visibility

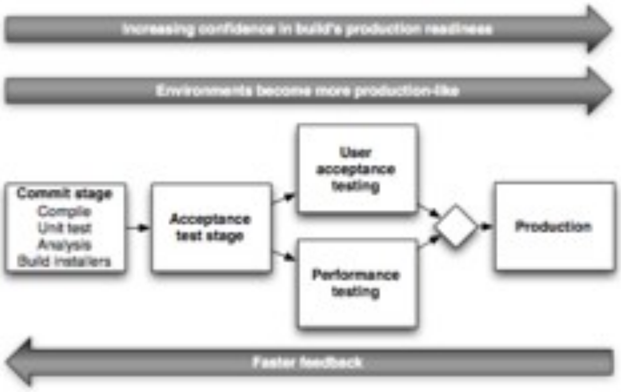
feedback

control

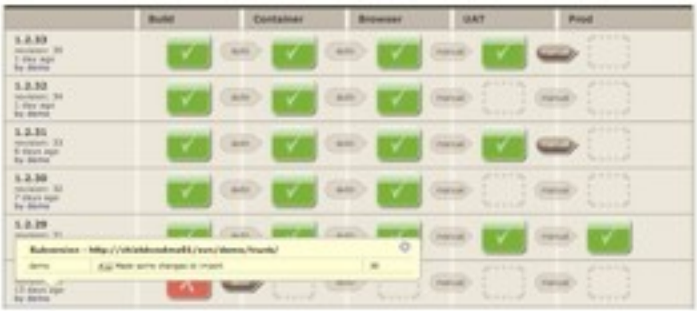
deployment pipeline



deployment pipeline



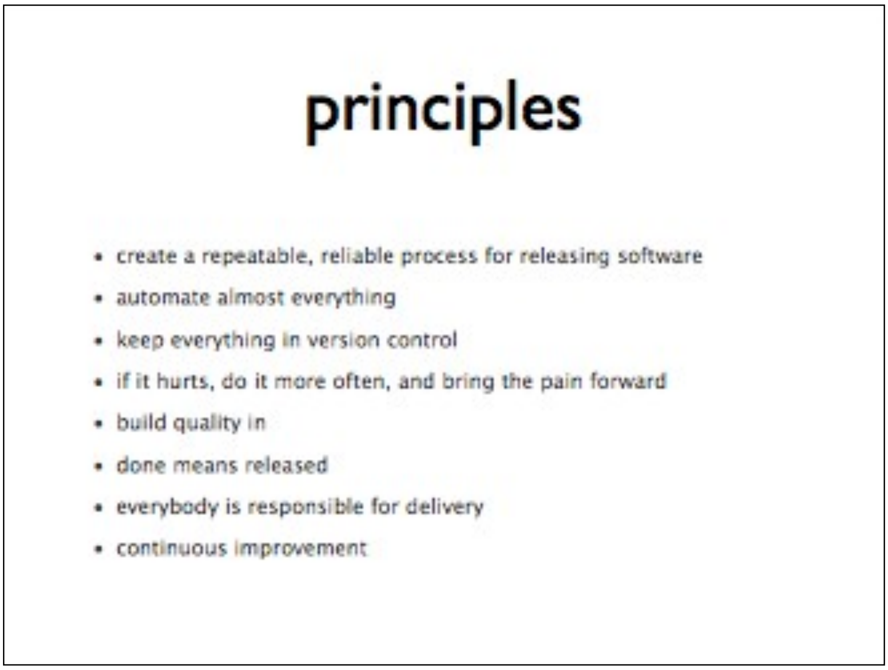
deployment pipeline



	Build		Container		Browser		UAT		Prod
1.2.33 revision: 35 1 days ago by demo	✓	auto	✓	auto	✓	manual	✓		
1.2.32 revision: 34 1 days ago by demo	✓	auto	✓	auto	✓	manual		manual	
1.2.31 revision: 33 6 days ago by demo	✓	auto	✓	auto	✓	manual	✓		
1.2.30 revision: 32 7 days ago by demo	✓	auto	✓	auto	✓	manual		manual	
1.2.29 revision: 31	✓	auto	✓	auto	✓	manual	✓	manual	✓
13 days ago by demo	✗			auto		manual		manual	

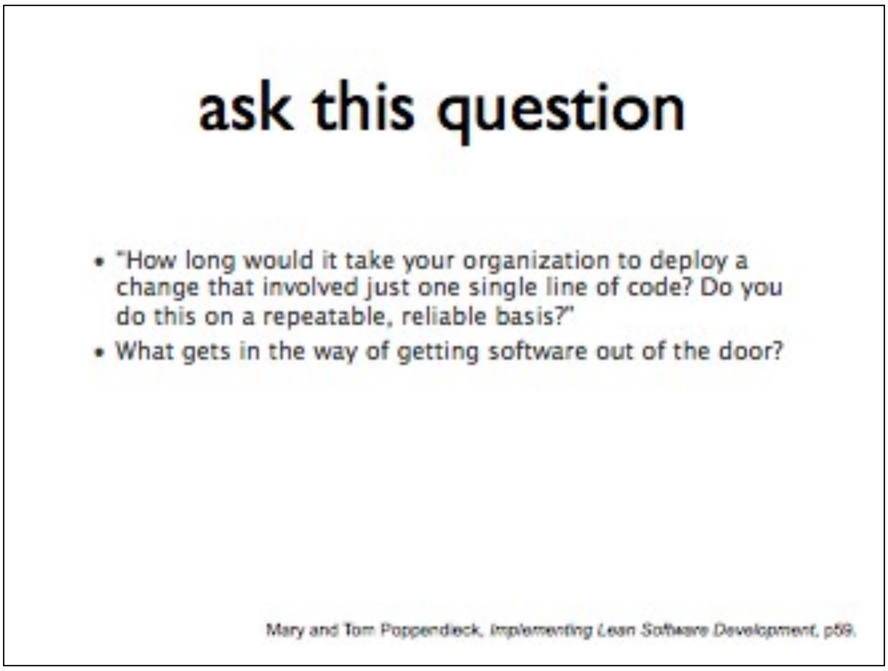
Subversion - http://[illegible]/svn/demo/trunk/

demo | Made some changes to import



principles

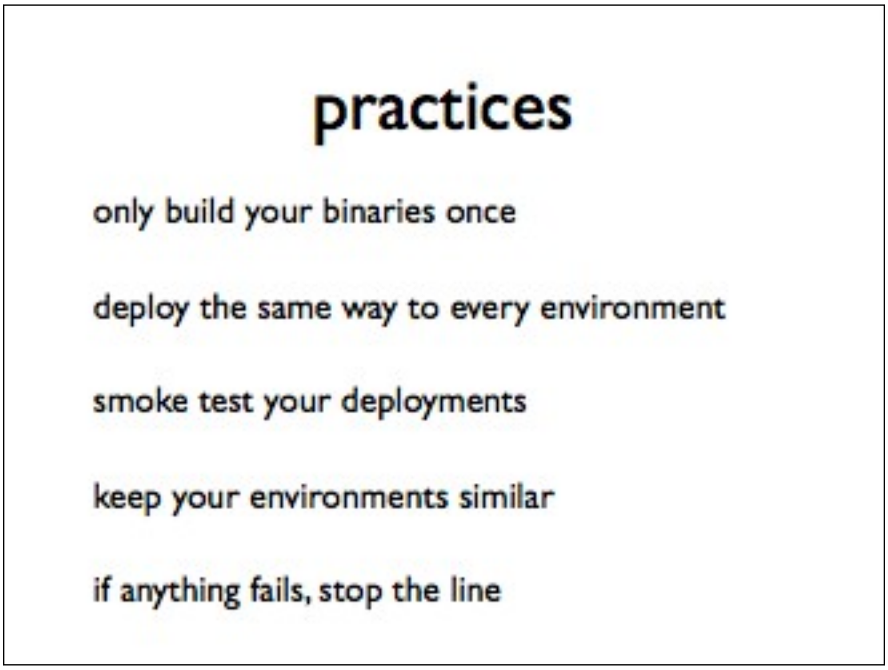
- create a repeatable, reliable process for releasing software
- automate almost everything
- keep everything in version control
- if it hurts, do it more often, and bring the pain forward
- build quality in
- done means released
- everybody is responsible for delivery
- continuous improvement



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?"
- What gets in the way of getting software out of the door?

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



practices

only build your binaries once

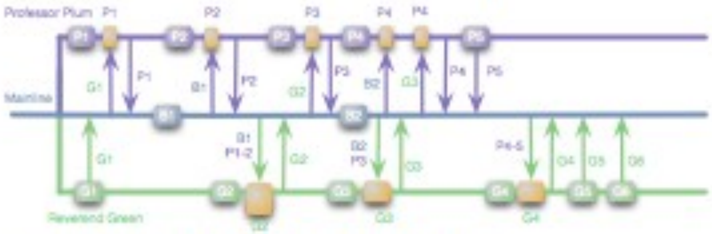
deploy the same way to every environment

smoke test your deployments

keep your environments similar

if anything fails, stop the line

continuous integration



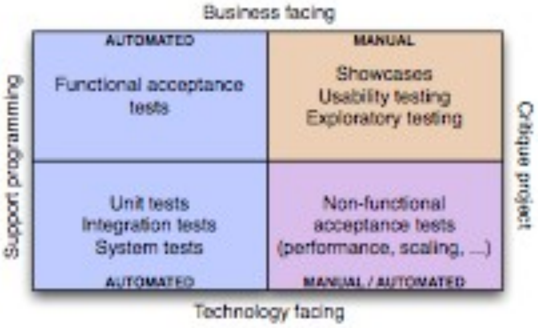
everybody checks in to mainline

use branch by abstraction for architectural change

use feature bits to switch off incomplete features

Diagram invented by Martin Fowler

different kinds of testing



Business facing

Support programming

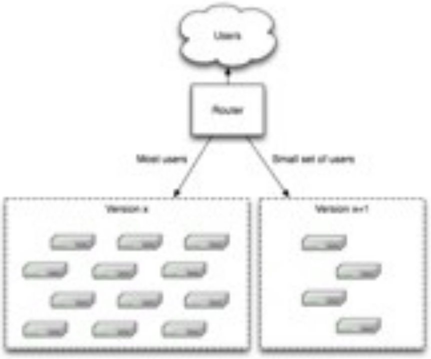
Critique project

AUTOMATED	MANUAL
Functional acceptance tests	Showcases Usability testing Exploratory testing
Unit tests Integration tests System tests AUTOMATED	Non-functional acceptance tests (performance, scaling, ...) MANUAL / AUTOMATED

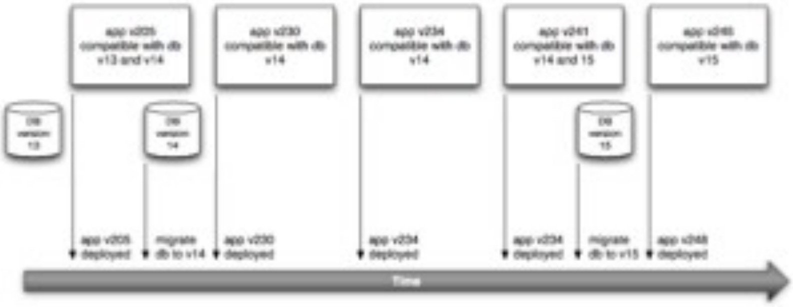
Technology facing

Diagram invented by Brian Marick

canary releasing



data migration



app v205 compatible with db v13 and v14

app v230 compatible with db v14

app v234 compatible with db v14

app v241 compatible with db v14 and 15

app v248 compatible with db v15

DB version 13

DB version 14

DB version 15

app v205 deployed

migrate db to v14

app v230 deployed

app v234 deployed

app v234 deployed

migrate db to v15

app v248 deployed

Time

objections

Visibility and control over locking down

Compliance - automation over documentation

Auditing - see who does what

Make it easy to remediate outages

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!

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The Addison Wesley Signature Series
Continuous Delivery
Jez Humble
David Farley
Foreword by Martin Fowler

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