Building an Airplane
While Flying
Strategies for Continuous Delivery
I Live in Des Moines, Iowa
I work for John Deere Intelligent Solutions Group
Continuous Delivery

What is it?
* Jez Humble: continuousdelivery.com/2010/02/continuous-delivery/*
In order to go fast we need small changesets to limit “what can go wrong”
Developer Mindset

- Lower WIP
- OMG I have to do this right.
- No “QA will find the bugs for me”
Customer Empowerment

When a feature goes live in production is up to the customer. Not the technologists.

Fosters trust and communication.
1: Development

- TDD (Test Driven Development)
- BDD (Behavior Driven Development)

I find your lack of tests disturbing
2) Version Control

- Shared Repository
- Developer
- Developer
- Developer
- CI Server
3: Continuous Integration systems
3: Continuous Integration systems
Step 2: Version Control
3: Continuous Integration systems
Continuous Delivery

How?
Incremental Design
Need an account
<table>
<thead>
<tr>
<th>Sender</th>
<th>Subject</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agile2014</td>
<td>You've been added to the list of Speakers at Agile2014 - Sched.org Event</td>
<td>Apr 24</td>
</tr>
<tr>
<td>CWT Traveler Assistant</td>
<td>Trip Submitted - &lt;Trip to Orlando, FL&gt; - Travel Itinerary Seat Request Accepted</td>
<td>Apr 21</td>
</tr>
<tr>
<td>Agile Alliance</td>
<td>View the Agile2014 Conference Program + Executive Forum Program - V</td>
<td>Apr 17</td>
</tr>
<tr>
<td>Gaylord Palms Resort &amp; C.</td>
<td>Gaylord Palms Resort &amp; Convention Center Reservation Confirmation - C</td>
<td>Apr 13</td>
</tr>
<tr>
<td>registration</td>
<td>Agile2014: Conference Details - Dear Ryan, Thank you for registering for</td>
<td>Apr 13</td>
</tr>
<tr>
<td>registration</td>
<td>Agile2014: Registration Receipt - Dear Ryan, AGILE2014 CONFERENCE</td>
<td>Apr 13</td>
</tr>
<tr>
<td>Agile2014 Logistics Team</td>
<td>Agile2014 Speaker Logistics &amp; Honorarium: Registration &amp; (4) Nights Hot</td>
<td>Apr 10</td>
</tr>
<tr>
<td>submissions</td>
<td>Agile2014 Submission Update - Action. - Dear Ryan Bergman, Congratulations</td>
<td>Mar 23</td>
</tr>
</tbody>
</table>
A few handy tools to make it usable
Market Differentiation: Spam!
Market Differentiation: Search! Take that outlook.
Now on to the “nice to haves”
Now on to the “nice to haves”
oops, we better make money...
so pretty, much happy, many feature
VCS Branching Strategies
Feature Branching

Needs to be tested on its own:
- Easier for distributed apps
- Can be a challenge for server side apps
Feature Branching

Master

Feature Branch X

Can get stale. Needs constant integration
Feature Branching

Hard to Manage lots of features

Feature Branch V
Feature Branch X
Feature Branch Y
Feature Branch ß
Feature Branch Z
Feature Branching

Requirements

● A good VCS that does branching and merging well
  ○ Git
  ○ Mercurial

● Discipline

● For server side: Lots of hardware!
Feature Toggles
Feature Toggles Let Us

- Control **WHAT** features are released
- Control **WHEN** a feature is released
- Control **WHERE** a feature is released
- Control **WHO** receives a feature
Feature Toggles: WHAT

- New features
- Changes to existing features
Feature Toggles: WHEN

- Release on May 4 2014
- Only on the weekends for the next two months.
Feature Toggles: **WHERE**

- **Web Environments:**
  - Dev
  - QA
  - Prod

- **Builds:**
  - Beta Versions
Feature Toggles: WHO

● Individuals: “Abe”

● Groups:
  ○ Beta Users
  ○ Women in Georgia between the ages of 21 and 37
  ○ Everyone in Europe
  ○ People who use another feature a lot.
Other Advantages
Helps “Mark” code for removal
Can be used to “Short Circuit” production problems
Downsides

● Doesn’t work well for published code based APIs. You can’t selectively have a method on a interface!

● Keep Them Clean!
My John Deere

Example System
Control Features

As an admin user, you are allowed to manage features for MyJohnDeere.

<table>
<thead>
<tr>
<th>Feature Name</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVATE_WDT_DEMO</td>
<td>Feature for showing link to activate wdt demo</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>ADD_EQUIPMENT</td>
<td>Add Equipment.</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>ADS_DATA_MANAGER</td>
<td>Customer access to ADS Data Manager download page</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>ADS_REPORTS</td>
<td>Main feature for ADS Reports.</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>ADS_SUPPORT_TOOLS</td>
<td>ADS support tools</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>ALERTS</td>
<td>Display Alerts</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>APEXBACKUP_PROCESSING_NOTIFICATION</td>
<td>Feature for hiding apexbackup processing notification</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>APEX_PROCESS_BAK</td>
<td>Feature for processing an Apex auto backup file.</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>BREADCRUMB_ADMIN</td>
<td></td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>BREADCRUMB_SPLASH_LEGAL</td>
<td>Legal text for Marketing Splash for Breadcrumbs</td>
<td>LIMITED_ACCESS</td>
</tr>
<tr>
<td>BREADCRUMB_STREAMING</td>
<td>Start Breadcrumbs for an org at login</td>
<td>LIMITED_ACCESS</td>
</tr>
</tbody>
</table>
Code
Thanks!

@ryber

http://ryber.github.io/

https://github.com/ryber