Coaching deployment size down and frequency

Getting technical people to adopt continuous delivery

› Alan Parkinson  › CEO/CTO  › @alan_parkinson
My fellow engineers, please stop asking “Is this process good or bad?” and start asking “Is it well-suited to my situation?”

Jocelyn Goldfein. MD at Zetta Venture Partners
Former engineering exec at Facebook and VMWare
The Phoenix Project  Gene Kim, Kevin Behr, and George Spafford
THE SCIENCE OF LEAN SOFTWARE AND DEVOPS

ACCELERATE

Building and Scaling High Performing Technology Organizations

Nicole Forsgren PhD, Jez Humble, and Gene Kim
High-performers were twice as likely to exceed organizational performance goals as low performers

Accelerate The Science of Lean Software and DevOps
Measuring software delivery performance

**Lead time for change**

The lead time of code commit to deployment in production

**Deployment frequency**

How often is work deployed to production? This is proxy of batch size within Lean

**Mean time to recovery (MTTR)**

How quickly a team recovers from failures in production: Bugs, bad deployments, outages
Measuring software delivery performance

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<table>
<thead>
<tr>
<th>2016</th>
<th>High Performers</th>
<th>Medium Performers</th>
<th>Low Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployment</td>
<td>On demand (multiple times per day)</td>
<td>Between once per week and once per month</td>
<td>Between once per month and once every 6 months</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead time for change</td>
<td>Less than 1 hour</td>
<td>Between 1 week and one month</td>
<td>Between 1 month and 6 months</td>
</tr>
<tr>
<td>MTTR</td>
<td>Less than 1 hour</td>
<td>Less than a day</td>
<td>Less than a day*</td>
</tr>
<tr>
<td>Change Failure Rate</td>
<td>0-15%</td>
<td>31%-45%</td>
<td>16-30%</td>
</tr>
</tbody>
</table>

*Table 2.2 from *Accelerate: The Science of Lean Software and DevOps.*
A hypothetical Continuous Delivery pipeline

Compile → Small tests → Medium tests → Large tests → Exploratory testing → Deploy to production
My Continuous Deployment pipeline

- Compile
- Small tests
- Docker Container
- Medium tests
- Deploy to production
- Lint

6 minutes 23 seconds
You can’t do this because ... said we aren’t allowed

Some Manager at Bureaucratic Organization
Telephone game
Can you please go to the nearby grocery store and buy some bread, if they have eggs buy six
You can’t do this because ... said we aren’t allowed

Some Manager at Bureaucratic Organization
The power of a cup of tea
We will do it tomorrow
The next day
We will do it tomorrow
28 days later....
We will do it tomorrow
Oh, there's a problem
“people in this country have had enough of experts”

Michael Gove  Justice secretary, Her Majesty’s Government
Coaching

Asking opened questions and allowing self realization to create change
What do you do when emergency X happens?
Feature branching
Let’s play spot the difference
Spot the difference

HindsightSoftware.com/SpotTheDifference
the most simple and powerful economic driver in a development process is a reduction in batch size, i.e. to constrain WIP.

Donald Reinertsen. The Principles of Product Development Flow
Feature branching

STORY-121
MASTER
STORY-122
STORY-119
Rebasing
Rebasing
Racing to merge
Racing to merge

STORY-121

MASTER

STORY-122
People make local optimizations to their role and don’t consider the impact on others
Trunk based development

STORY-123

STORY-123

STORY-117

STORY-117

STORY-118

STORY-118

MASTER
Remove activities from the critical path

- Compile
- Small tests
- Medium tests
- Large tests
- Exploratory testing
- Deploy to production
Remove activities from the critical path

Compile
Small tests
Medium tests
Large tests
Deploy to production
Exploratory testing
Monitoring, your safety net
Feature toggles
Feature Flags, Feature Bits, or Feature Flippers
**Toggle implementation options**

**Build time toggles**
Embedded in code as a simple Boolean value or compiler directives

**Boot / Configuration toggles**
Controlled by environment variables or configuration files. Any change require a restart

**Real-time toggles**
Stored in the live database or controlled using service discovery. No need to reboot
Toggle implementation options

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Segmenting with toggles

**Per user**
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**Per tenant**
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**Per deployment group / region**
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What would happen if a Monkey got into your data center?

https://github.com/Netflix/SimianArmy
Can you present it as something else?
the most simple and powerful economic driver in a development process is a reduction in batch size, i.e. to constrain WIP

Donald Reinertsen. The Principles of Product Development Flow
https://danashby.co.uk/2016/10/19/continuous-testing-in-devops/
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Don’t forget to submit feedback if you enjoyed the session