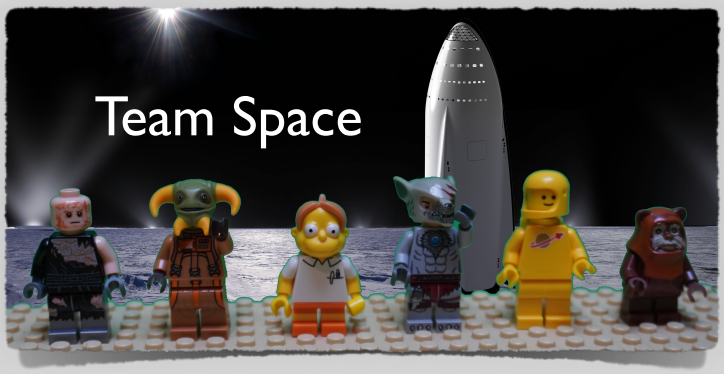


Maximizing Dependencies with Interdependent Teams




Team Space


Team Lake


Team Halloween


Team Criminals


Team Power
POLICE

Features

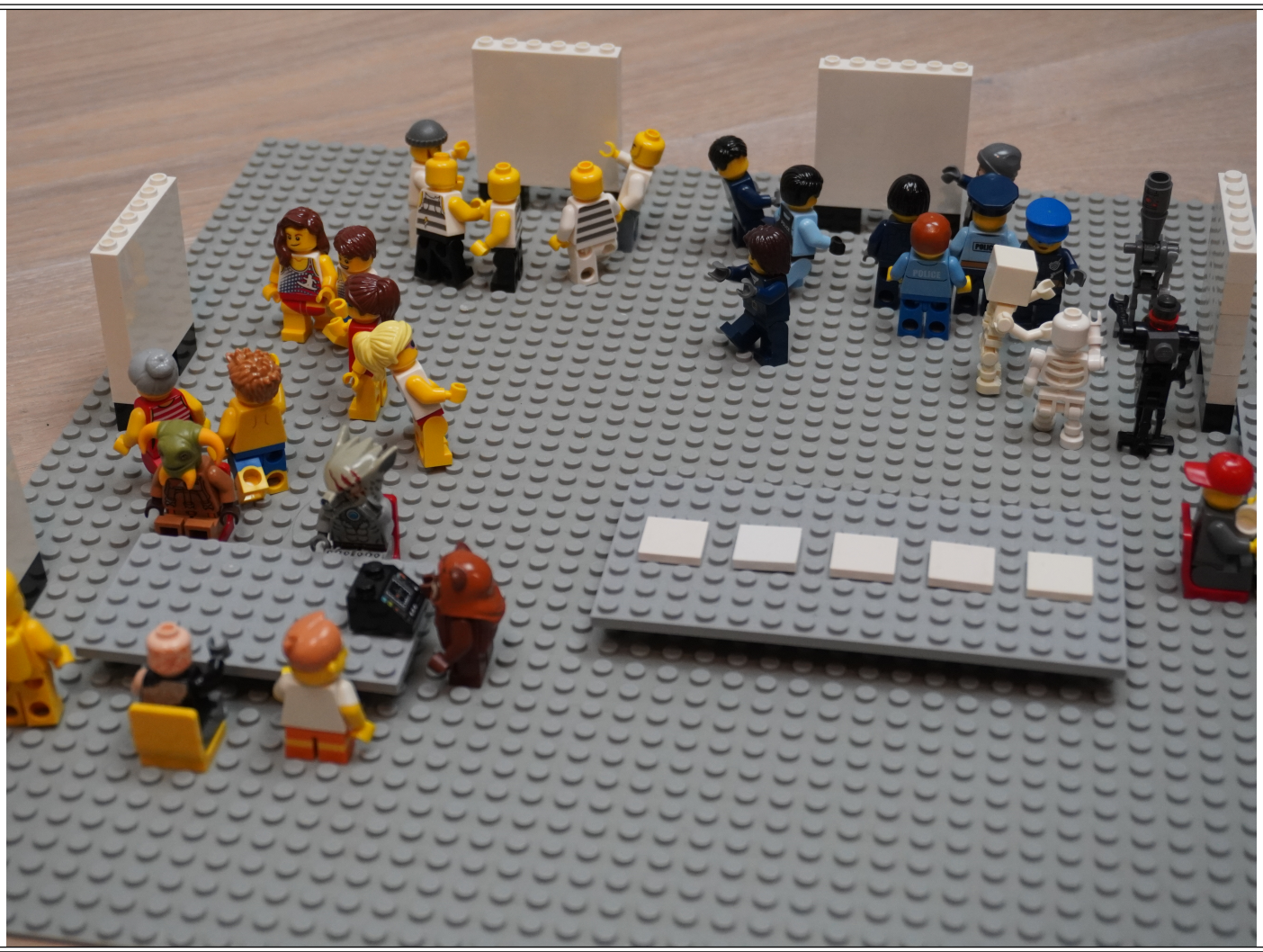


Top of Product Backlog

Viewing courses with direct link
Course registration
Basic integration with External Scheduler
Migrate main page to New Tech
Course registration with invoice
External Scheduler support for timezones
Migrate menus to New Tech
Course registration through payment provider
Cancelling registration without payment




POLICE







Enablers

Two Journeys



Being told how to work



Self-managing Team



Programmer



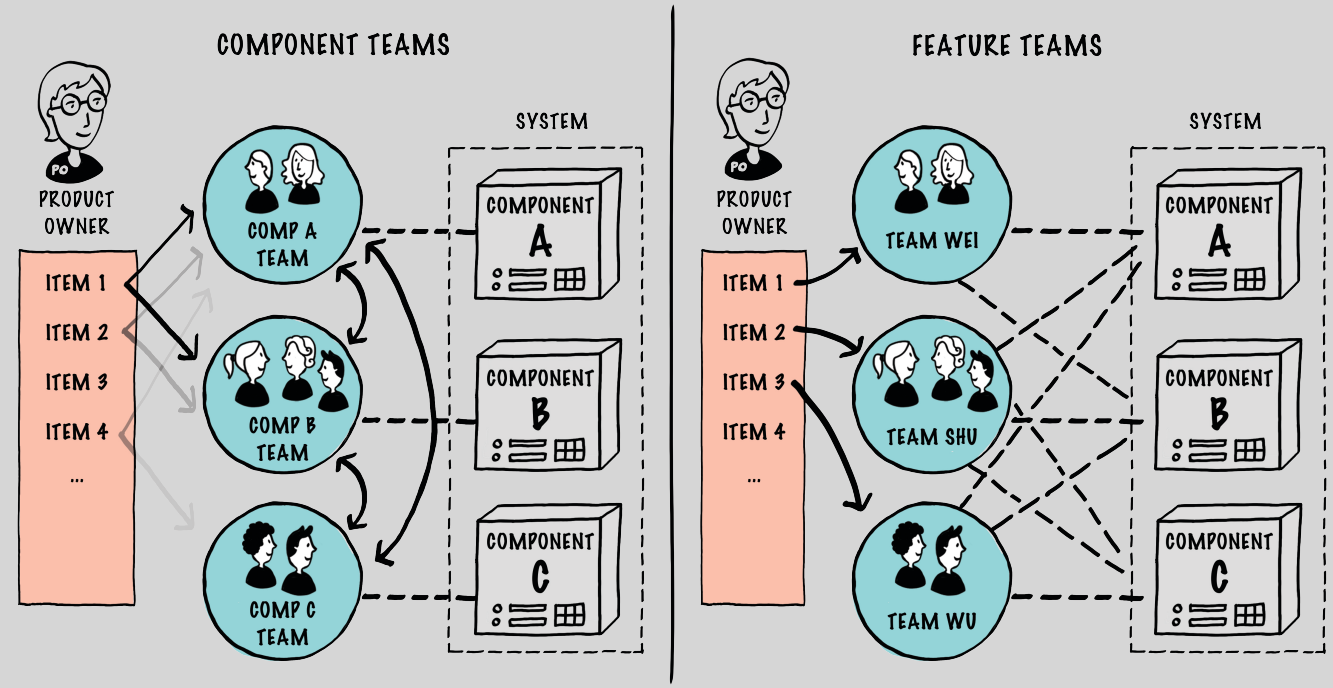
Product Developer

Whole Product Focus



Customer Centric

THE RITZ-CARLTON



Types of Dependencies



By Bundesarchiv, Bild 183-1990-0414-009 / Wolfried Pätzold / CC-BY-SA 3.0, CC BY-SA 3.0

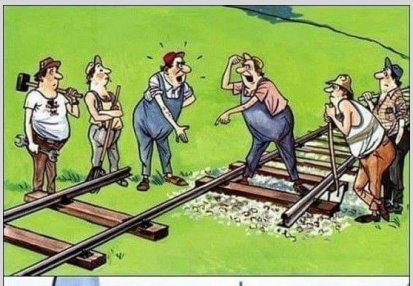
Asynchronous Dependencies
Interrupt

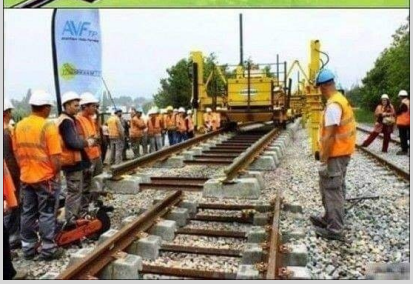
vs

Synchronous Dependencies
Collaborate



Interdependent Teams





Independent
Isolated
Teams

vs

Cross-Team Shared Learning



Maximizing Dependencies



Dependent on

vs

Shared Work



Feature Teams together
chose which team works on
which feature
rather than
all work for a specific
component always **goes to**
a specific team

Accidental Specialization

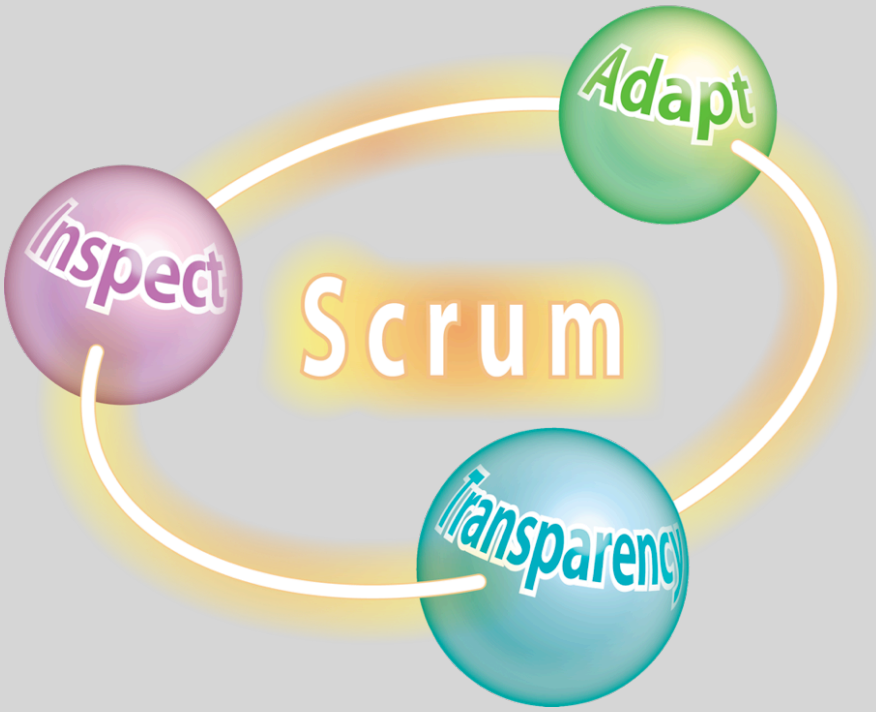


Example

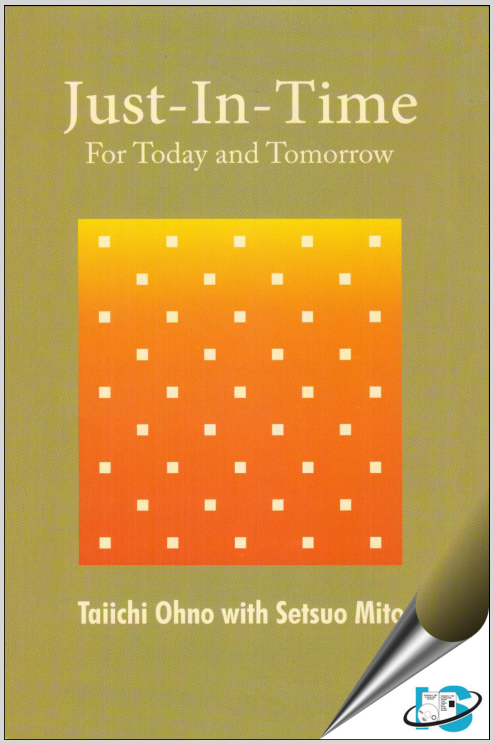
Team HUB likes:

- Features that are complex and touch many components
- Features that are used by lecturers and students
- Features that have a graphical UI

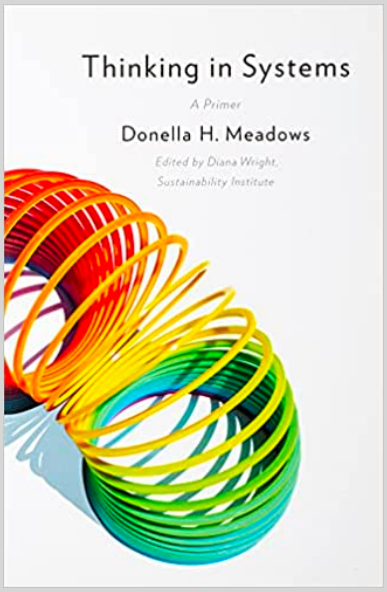
Large-Scale Scrum is Scrum



One piece flow



Avoiding Tragedy of the Commons



- *Educate and exhaust.*

  Help people to see the consequences of unrestrained use of the commons. Appeal to their morality

- *Privatize the commons.*

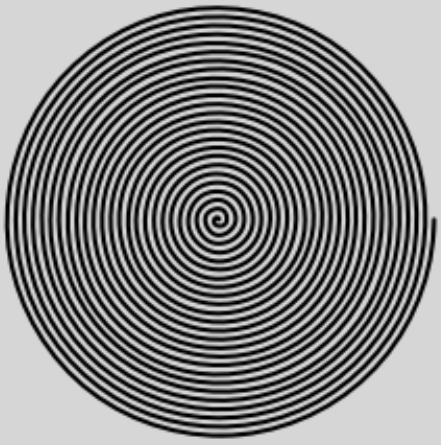
  Divide it up, so that each person reaps the consequences of his or her own actions.

- *Regulate the commons.*

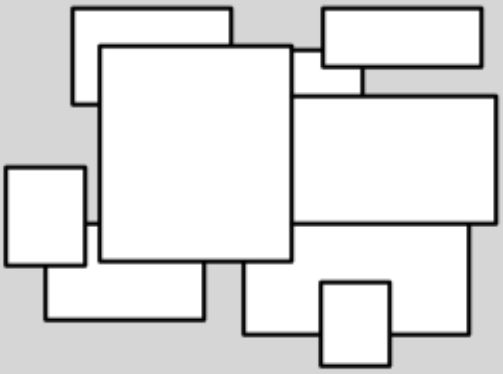
  Mutual coercion, mutually agreed upon.

Odd-e

Incremental Design



growing



building

This seems trivial but dramatically impacts how developers do their work.

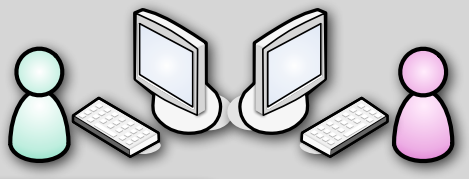
Continuous Integration

Continuous Integration is a **developer practice**
with the goal to always keep a **working system**
by making **small changes**, slowly growing the system
and **integrating** them at least **daily**
on the **mainline**
typically supported by a **CI system**
with lots of **automated tests**

- Increases transparency
- Increases cooperation and communication
- Enables people to work on same code



Scenario



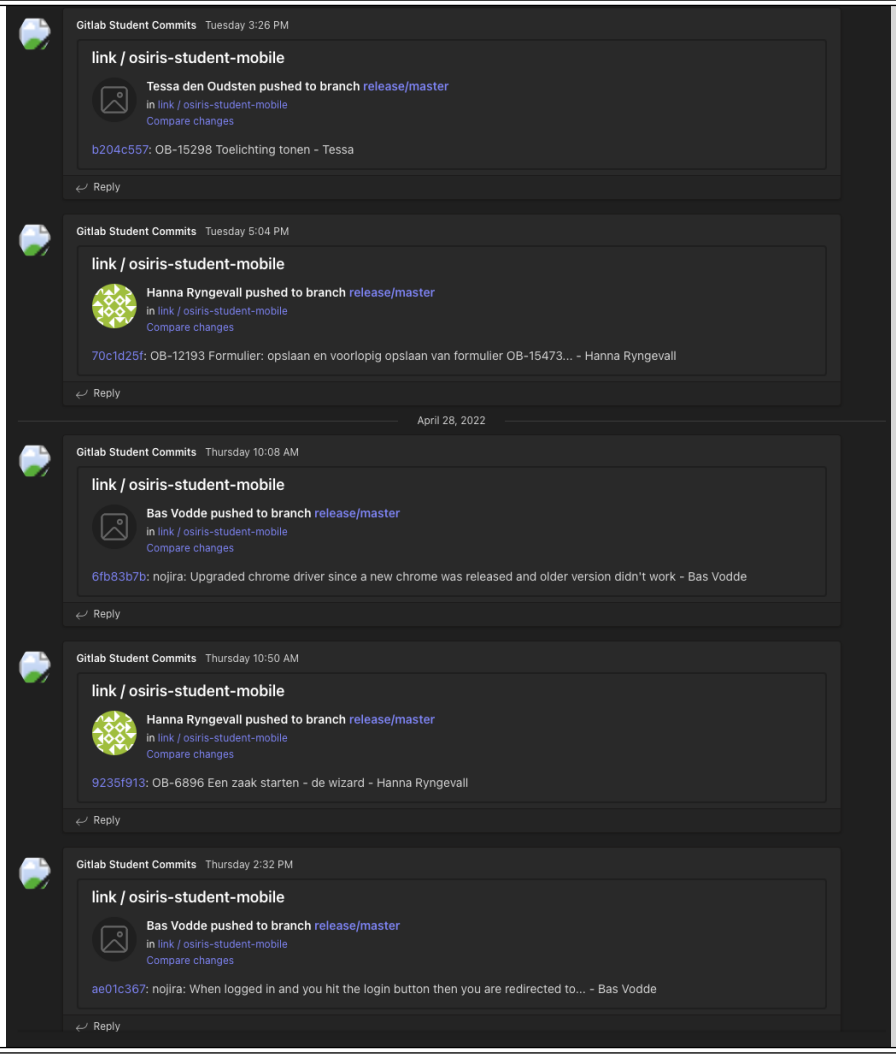
Hey! I'm changing the method that conflicts with your changes!

Roger!

... done and committed!

Ok! I'll update and check the merged changes!
... Looks good!

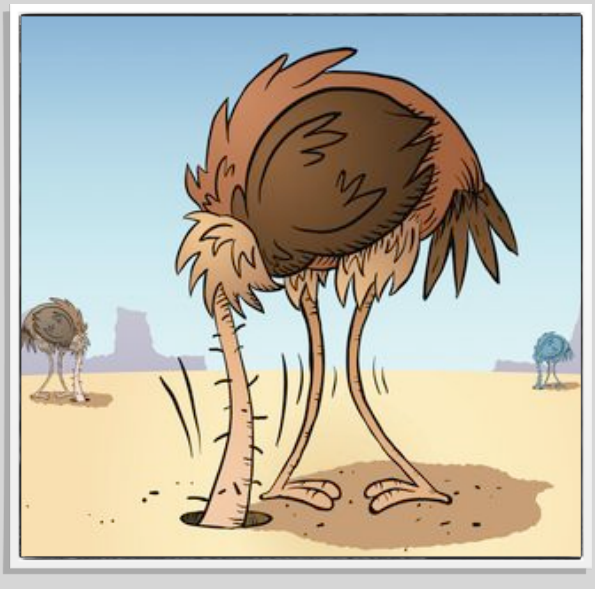
Great!



Communicate in Code

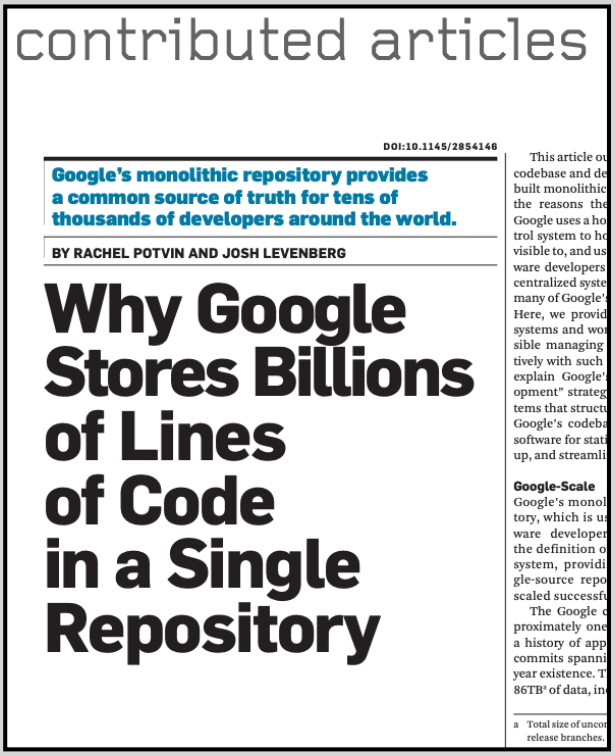
Odd-e

Avoid branching!





Mono Repository



contributed articles

DOI:10.1145/2854146

Google's monolithic repository provides a common source of truth for tens of thousands of developers around the world.

BY RACHEL POTVIN AND JOSH LEVENBERG

Why Google Stores Billions of Lines of Code in a Single Repository

This article ou
codebase and de
built monolithic
the reasons the
Google uses a ho
trol system to he
visible to, and us
ware developers
centralized syste
many of Google's
Here, we provid
systems and wo
sible managing
tively with such
explain Google's
opment" strateg
tems that structu
Google's codeba
software for stati
up, and streamli

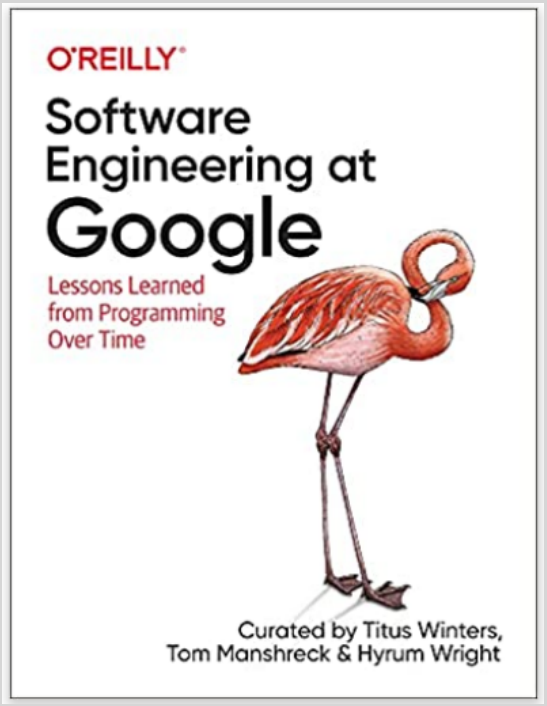
Google-Scale

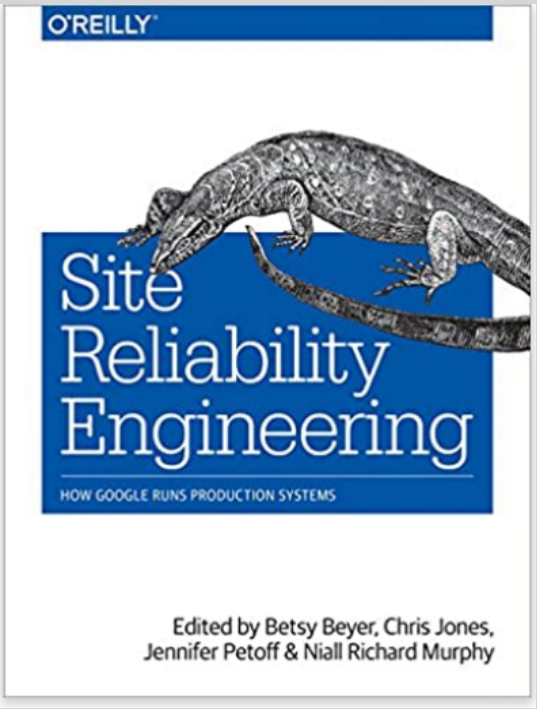
Google's monol
tory, which is us
ware developer
the definition o
system, providi
gle-source repo
scaled successfu
The Google c
proximately one
a history of app
commits spanni
year existence. T
86TB[a] of data, in

a Total size of uncor
release branches.

Maximizing Dependencies with Interdependent Teams

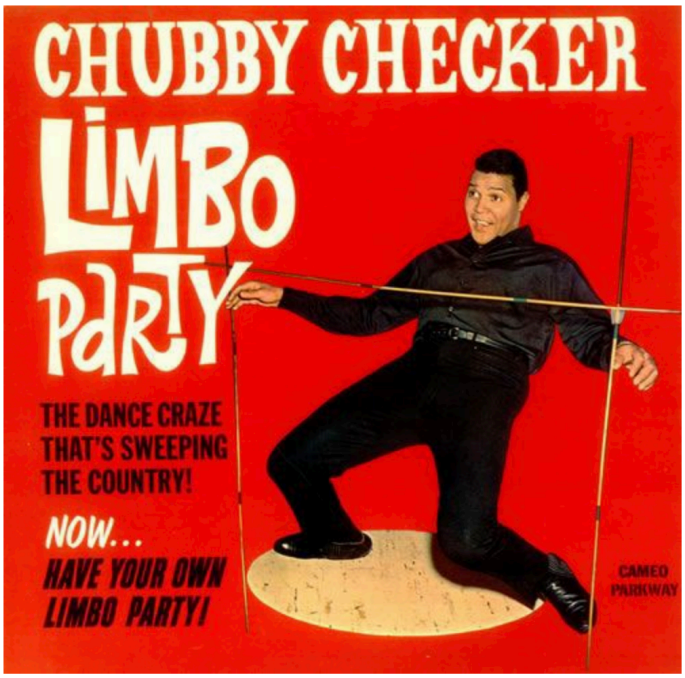
Google





Limbo: Scaling Software Collaboration

Kent Beck Jul 11, 2018 · 6 min read



Micro-services ?

- An architectural style that decomposes the system in services that are independently deployable.
- When using micro-services (and LeSS), avoid:
  - Teams own services (also known as component teams)
  - Repository per services (also known as multi-repo)
- But be aware:
  - Service communication creates additional overhead
  - Additional network communication creates significant additional complexity



Example Incremental Upgrade (1)

- Refactor all usage of an API that is changing to one place
- Move all usage of changing API again into one component/class. For example this could be called “UpgradeService” and it only exists during the upgrade
- Use a bash script that does the upgrade. It does:
  - Simple renames of changes in the API. Using find and sed.
  - Renames files that are called <file>.upgrade to <file> so that it is possible to have two versions of a file without branching in repository. This is mostly used for configuration but also for e.g. “upgrade service”
  - Deletes all lines that are marked for deletion with a comment. For example “// ION3”
  - Runs an open source upgrade script that does more renames and changes



Example Incremental Upgrade (2)

- For all incompatabilities, first ask whether we can find a way that works in both versions, if so, refactor it to a different implementation that works for both implementations
- For things that do not exist in the new version, write a dummy wrapper so that we can compile it, it just doesn't do anything
- For things that do not exist in the old version, write an implementation that doesn't do anything in the old version, but does something in the new version
- An example of the above is best visible in the CSS where the changes are dramatic. We add CSS for the new version (which doesn't do anything in the old version, it is just dead code) and then for the old styles, we mark them as "// ION3" so that they will be deleted by the upgrade script



Example Incremental Upgrade (3)

- People work with 2 checked out versions (same code branch). One version that has run the script and one that hasn't. Try the change in the upgraded version, then manually copy it to the old version to see if it works there also, then we always only commit on the old version checkout (so we never commit the results of the upgrade script)


MORE
with
LESS.