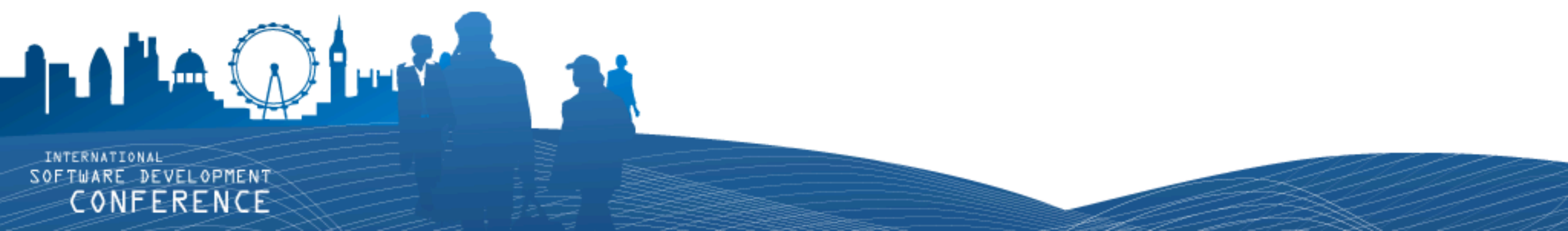
QCon

Please evaluate my talk via the mobile app!



Dev "Programming" Ops for DevOps Success

Damon Edwards

@damonedwards

dev2ops.org

DevOps Cafe

Disclosure: DevOps (to me)

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DevOps is <u>**not**</u>

- a specific methodology or prescriptive steps
- only achievable by “one true way”
- a job title or group name

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DevOps is

- a way of seeing your problems
- a way of evaluating solutions
- a way of communicating these things
- always evolving

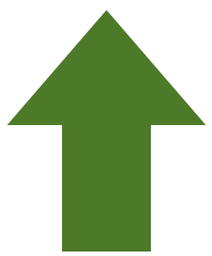
Damon Edwards

DevOps Consulting → Automation Design

#SimplifyOps

Open Source → Tools

What every business wants



Time-to-market

Quality

What every business wants

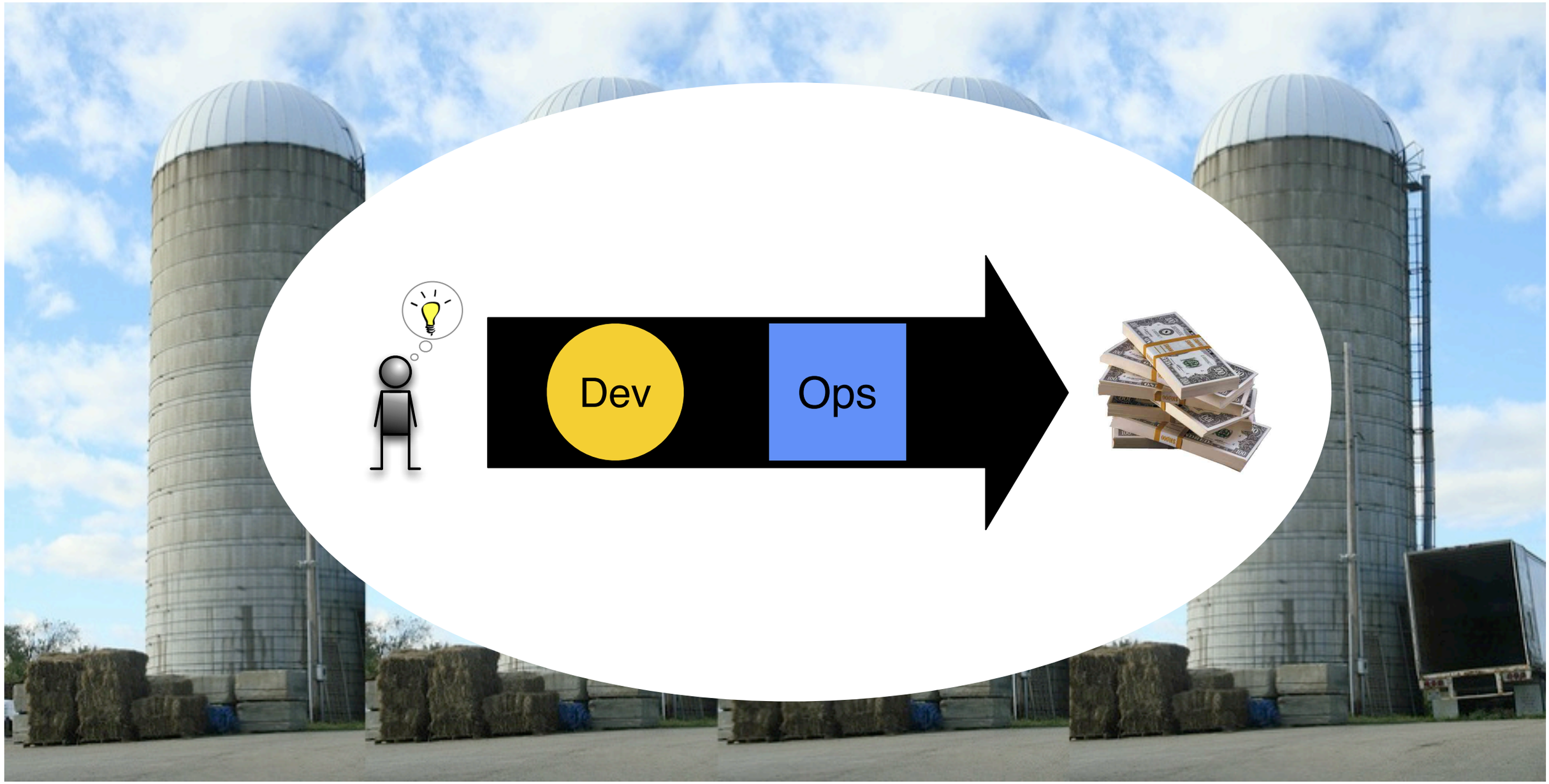
- ↑ Time-to-market
- ↑ Quality
- ↑ Effectiveness

What every business wants

- ↑ **Time-to-market**
- ↑ **Quality**
- ↑ **Effectiveness** (*Do more, but don't spend any more!*)

What’s stopping them?

Photo credit: Doc Searls on Flickr



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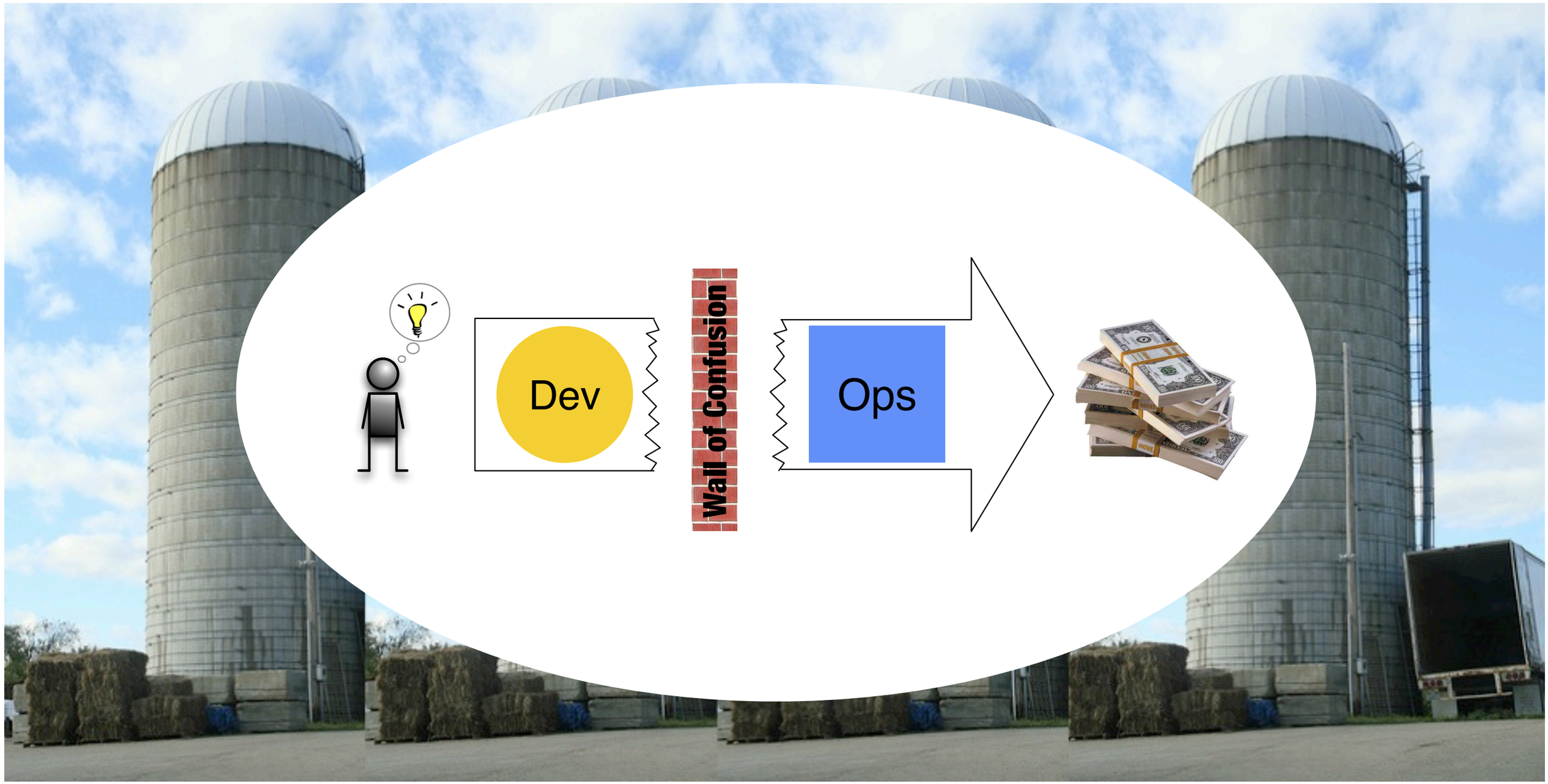

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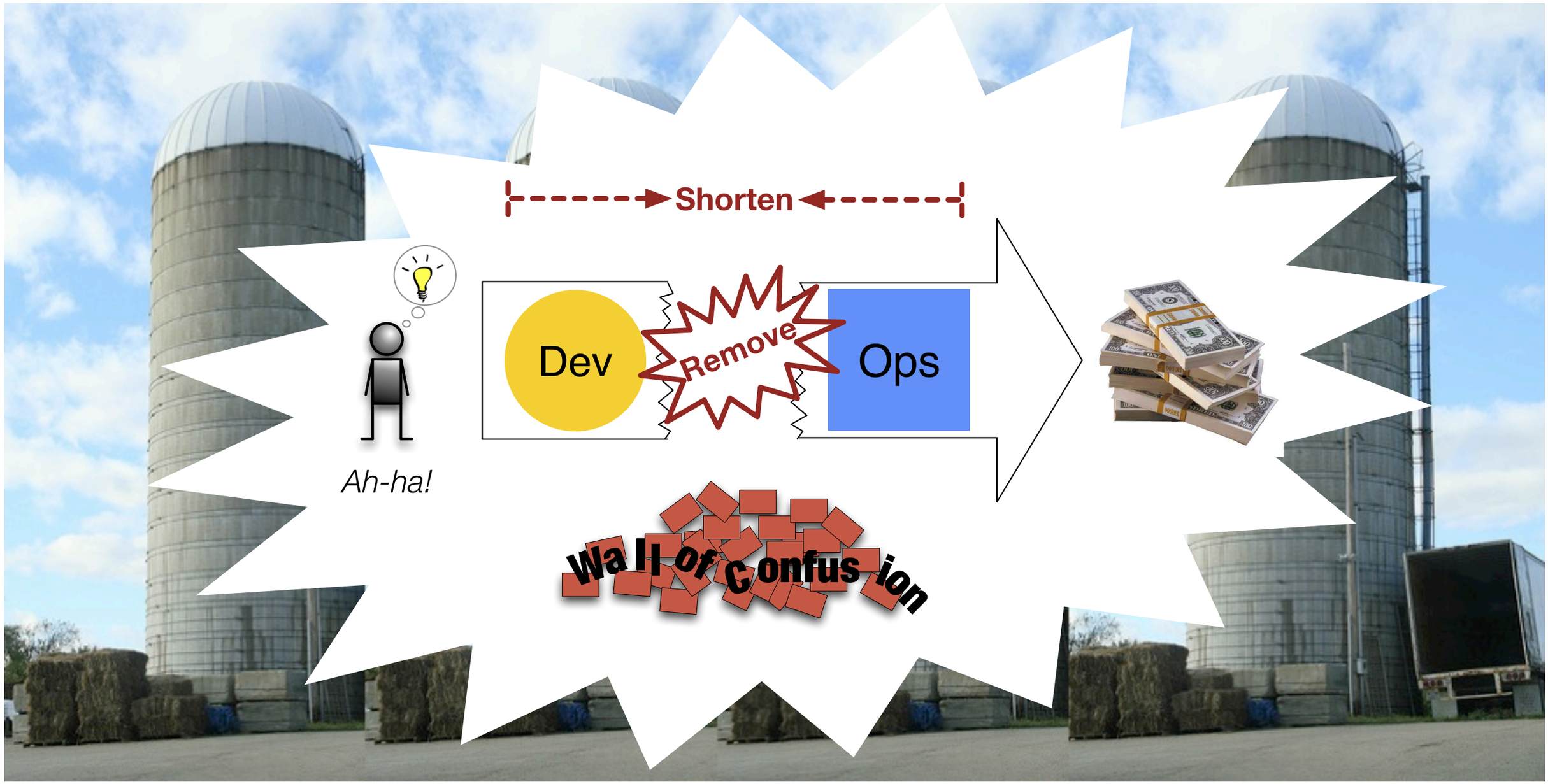

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You are here

"...but how can we start a DevOps transformation from our Dev silo?"

Dev initiated DevOps Transformation

Dev initiated DevOps Transformation

1. Take an “Operations First” mindset

Understand the pressure on Ops

What is the product?

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- Are customers paying for a running service?

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- Then the running service is the product
  - Operations is your “factory floor” and “storefront”
  - Everything else is a “parts supplier”
    - (Yes, that includes Developers)
- If the service isn’t running, there is no product or business

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- Stability, scalability, availability, security, etc... are all features

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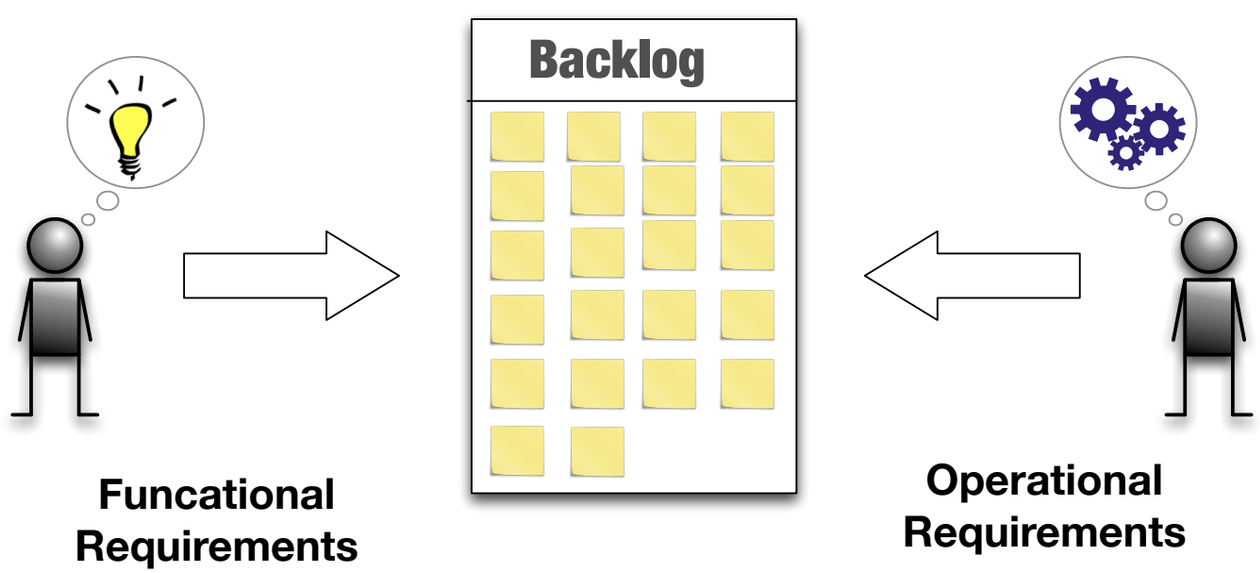
    - Like all features, you get what you invest
- Operations Requirements should be first class citizens in your backlog



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- You are developing a service... so this is part of *your* deliverable

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Development of a feature can be “done”. But a service is never “done” until it is turned off!

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2. **Build organizational alignment**

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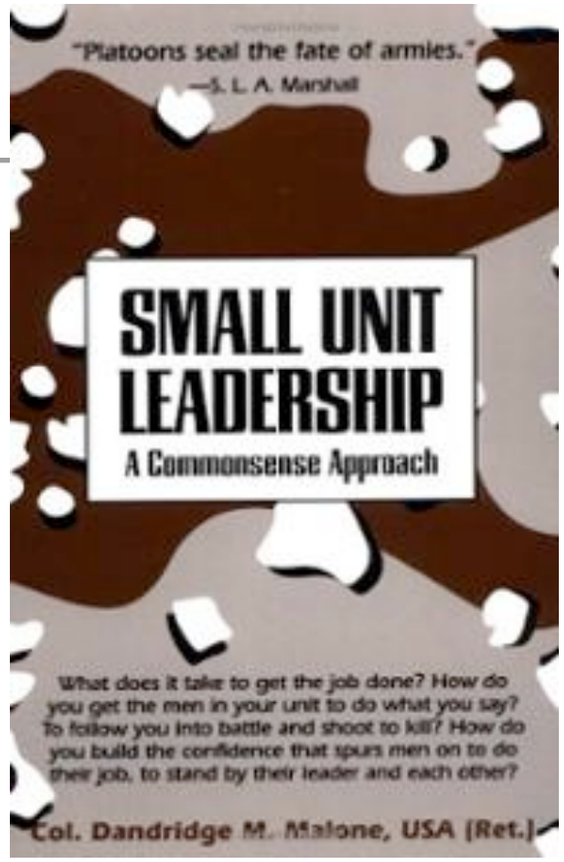

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expanded from

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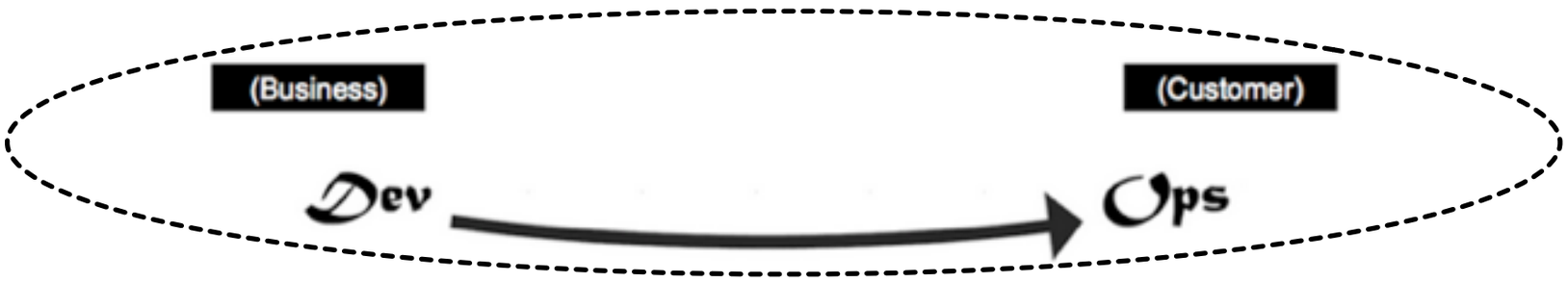

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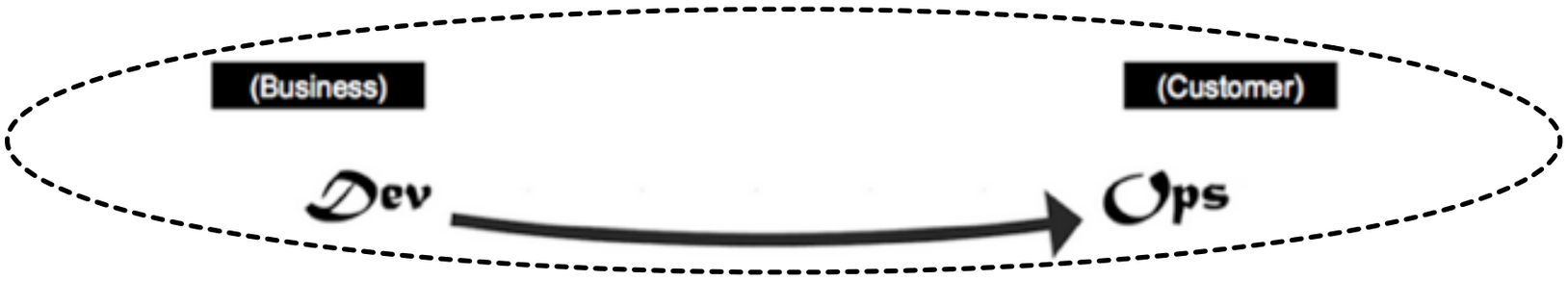
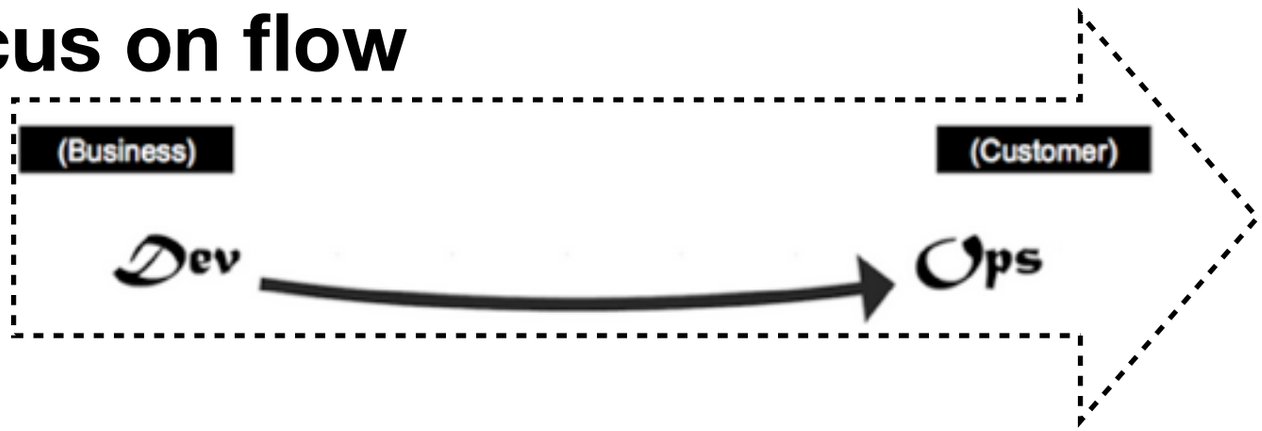


2. Focus on flow



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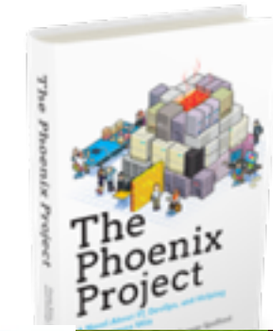

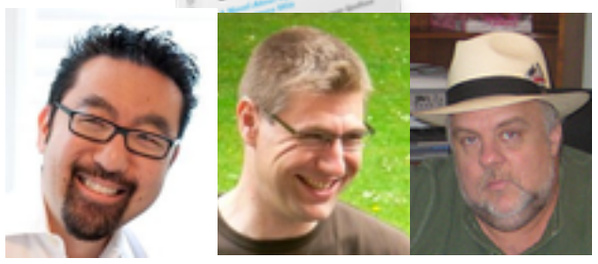

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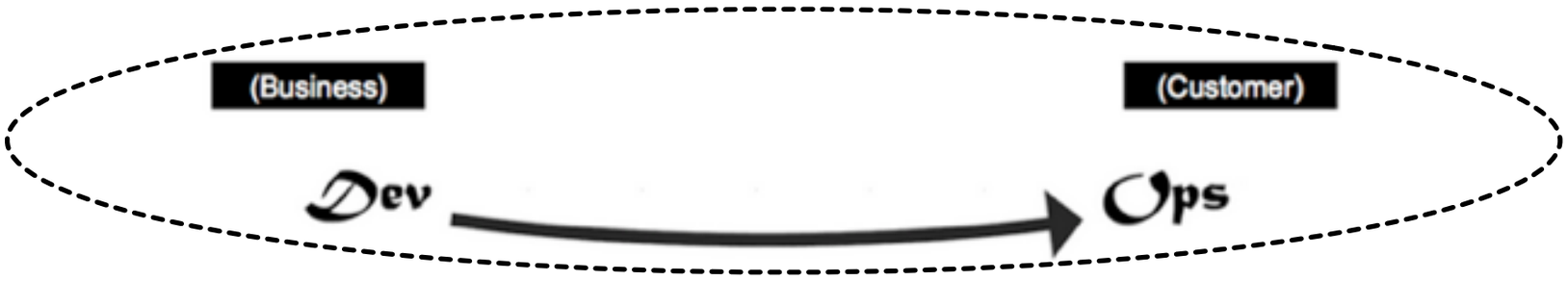

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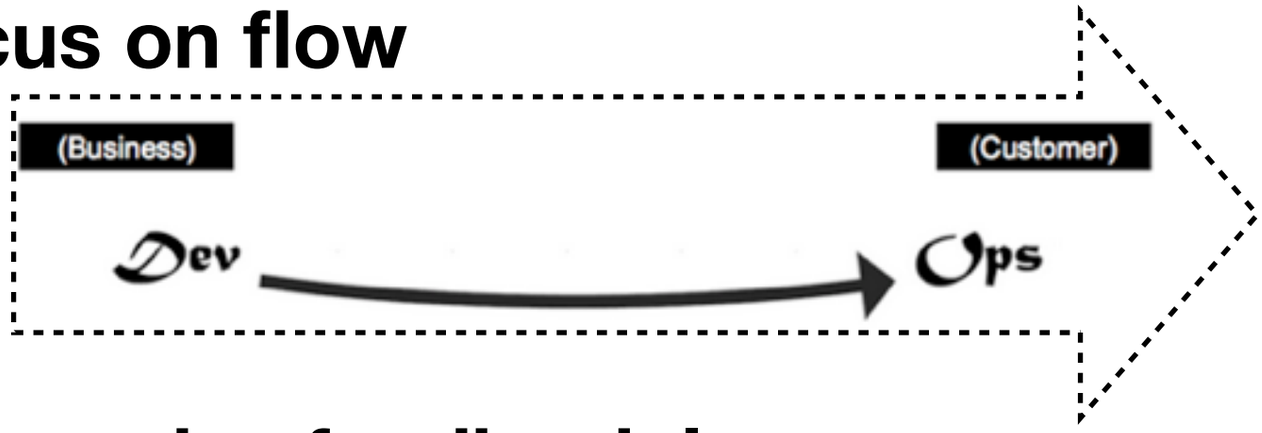

3. Recognize feedback loops

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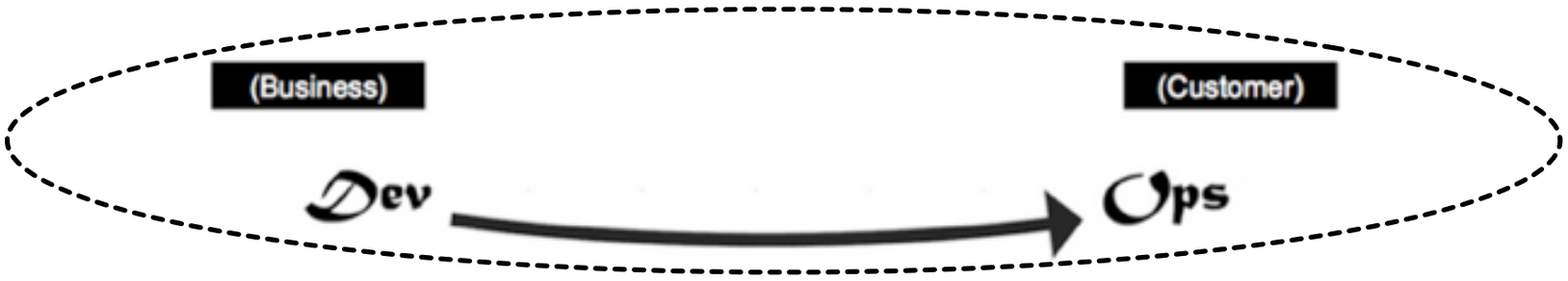

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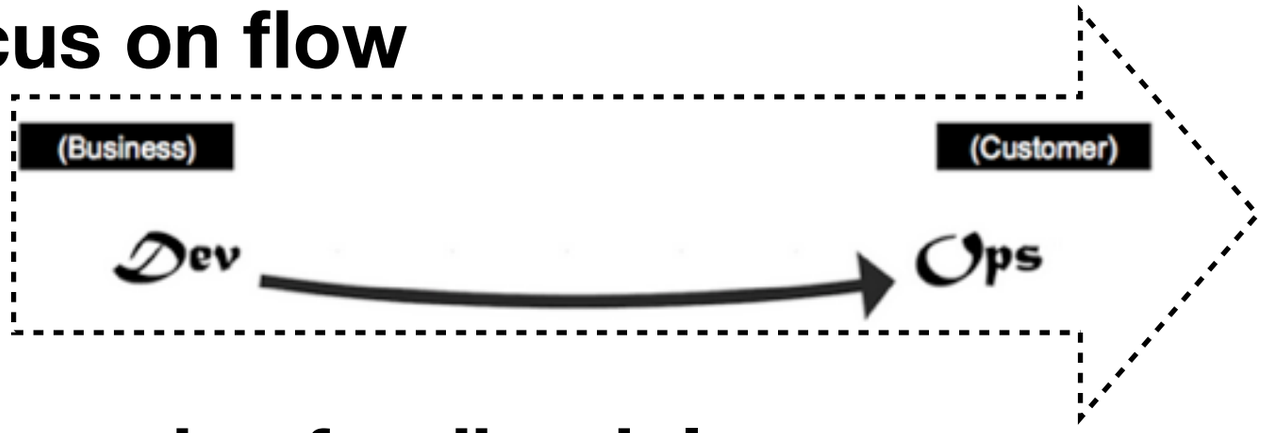

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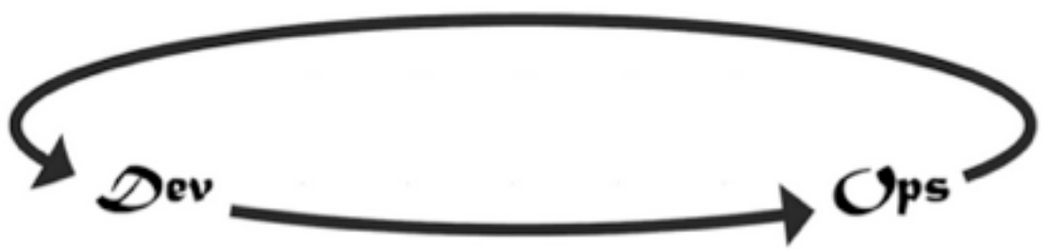
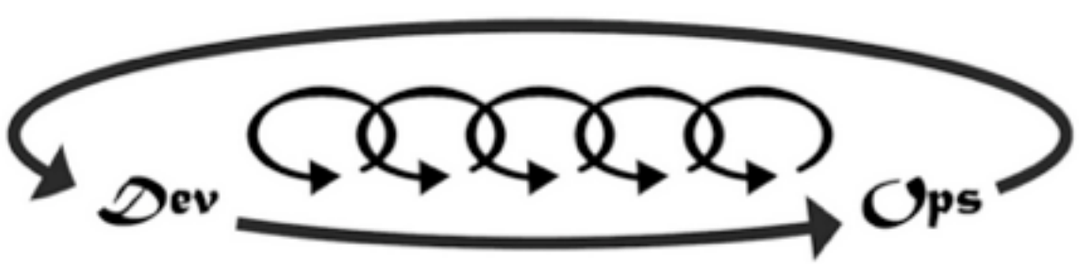


4. Look for continuous improvement opportunities



Sure... but how do you do that?

Building organizational alignment

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1. Socialize the concepts and vocabulary

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2. Visualize the system

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Building organizational alignment

1. Socialize the concepts and vocabulary
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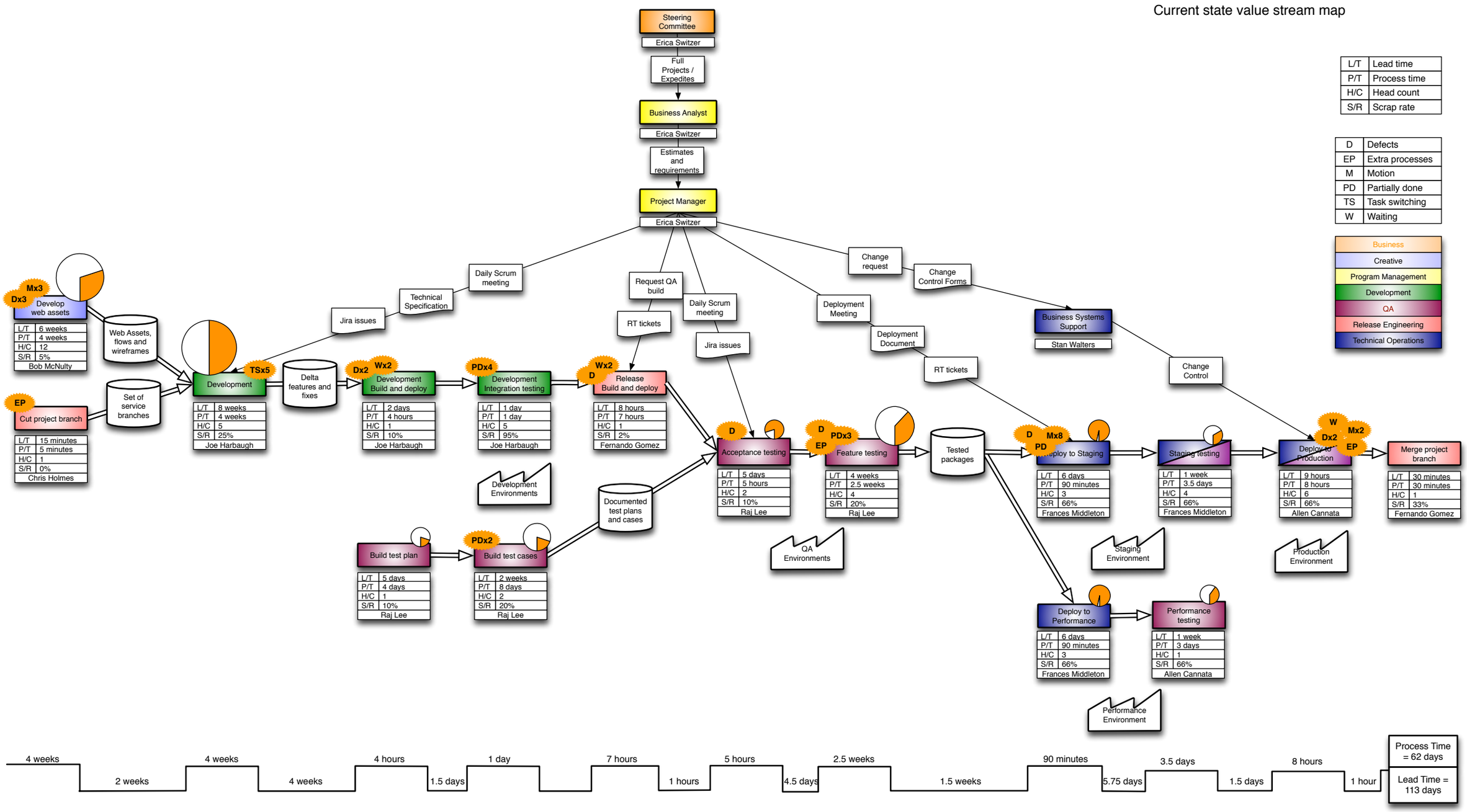
   b. timeline analysis
   c. waste analysis

Value Stream Mapping



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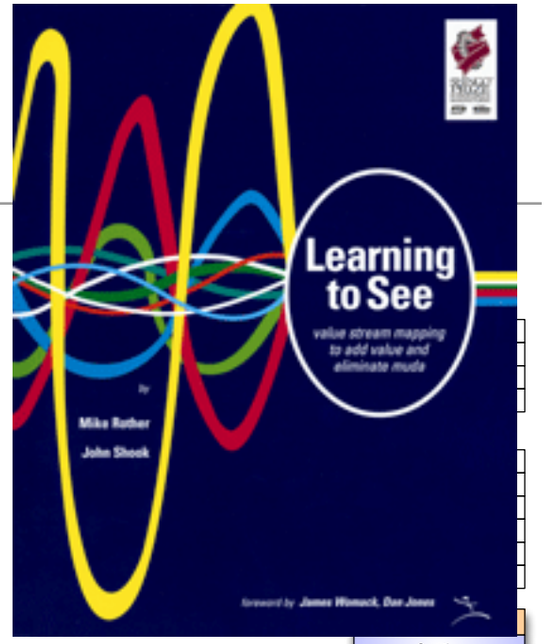

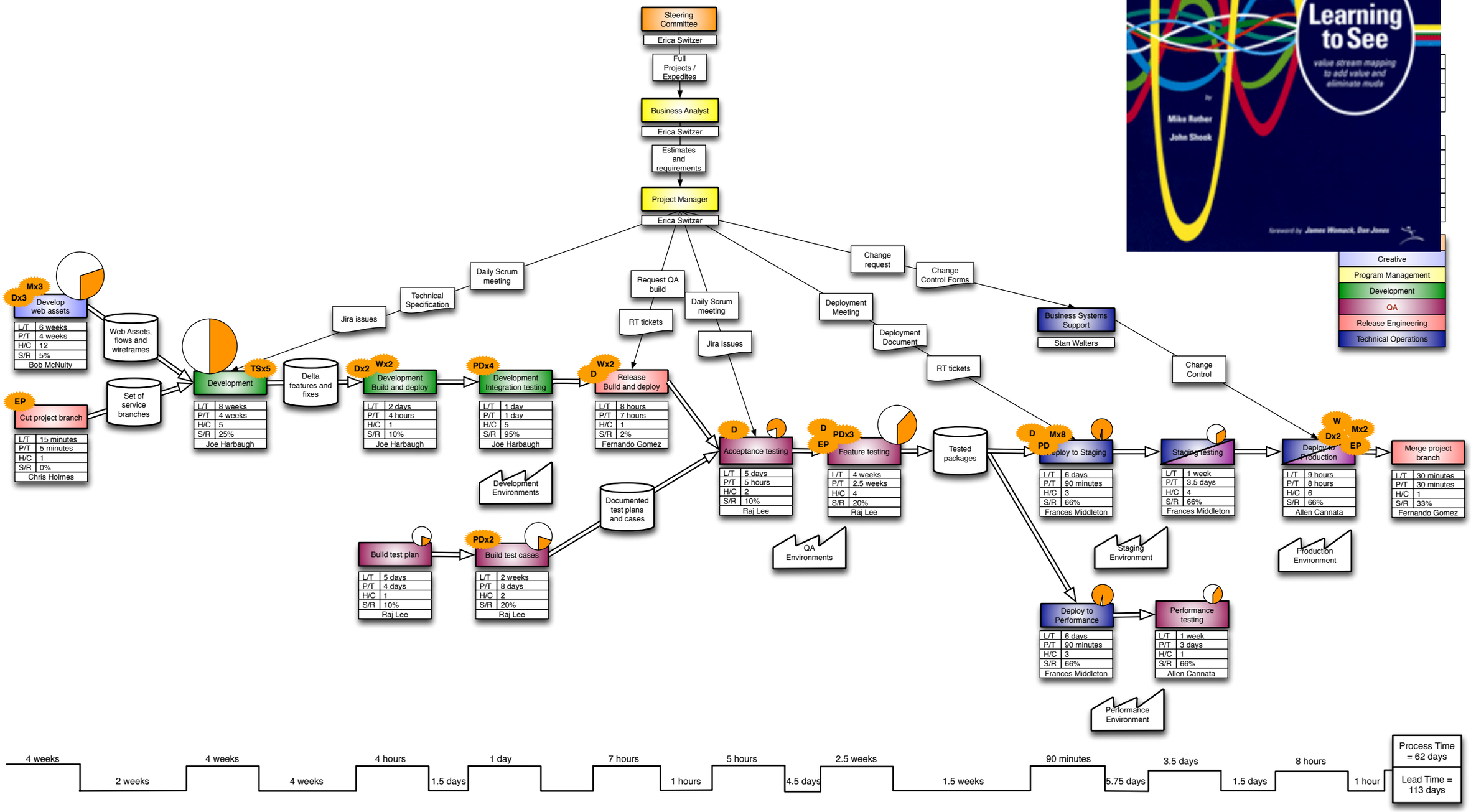

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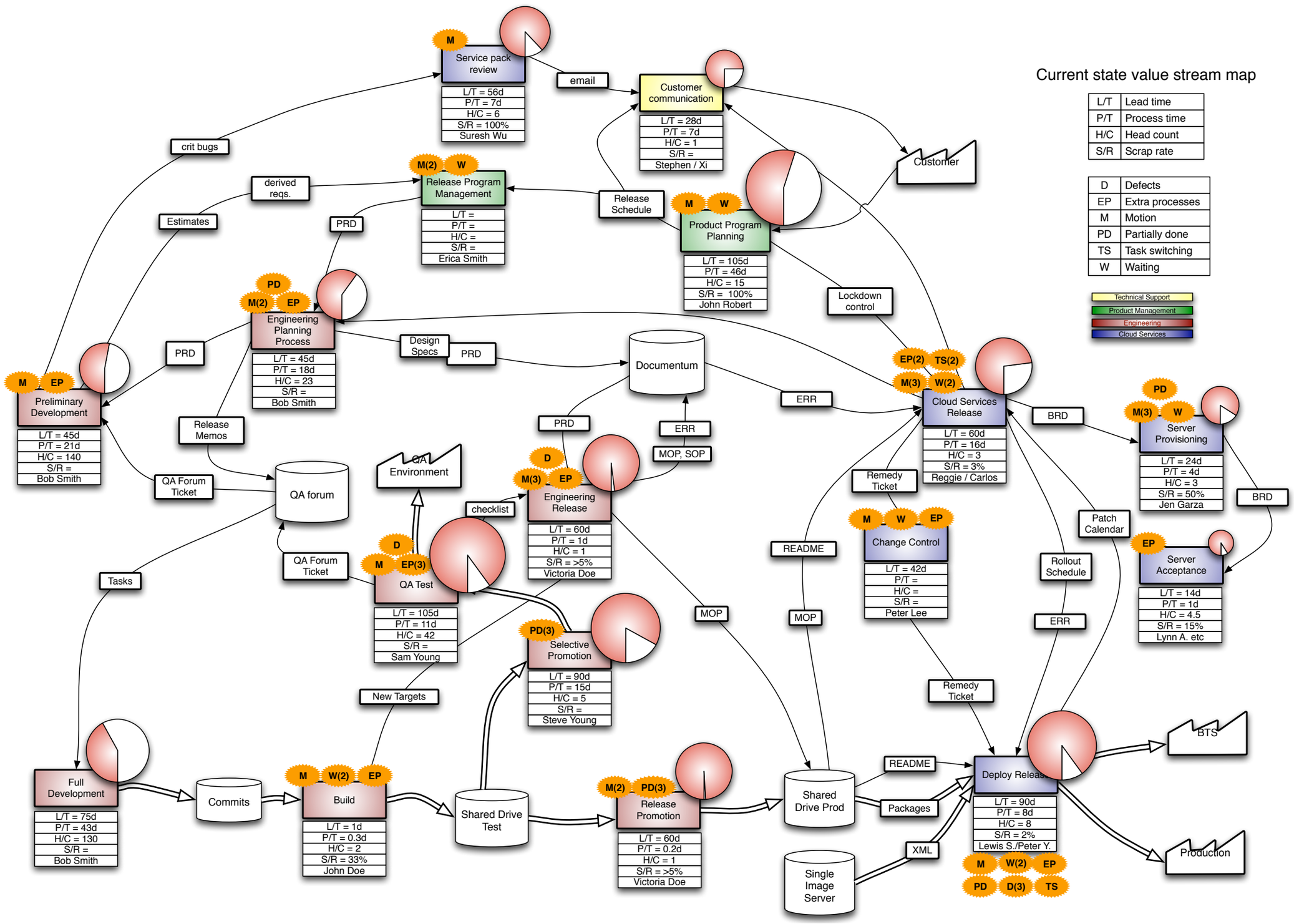

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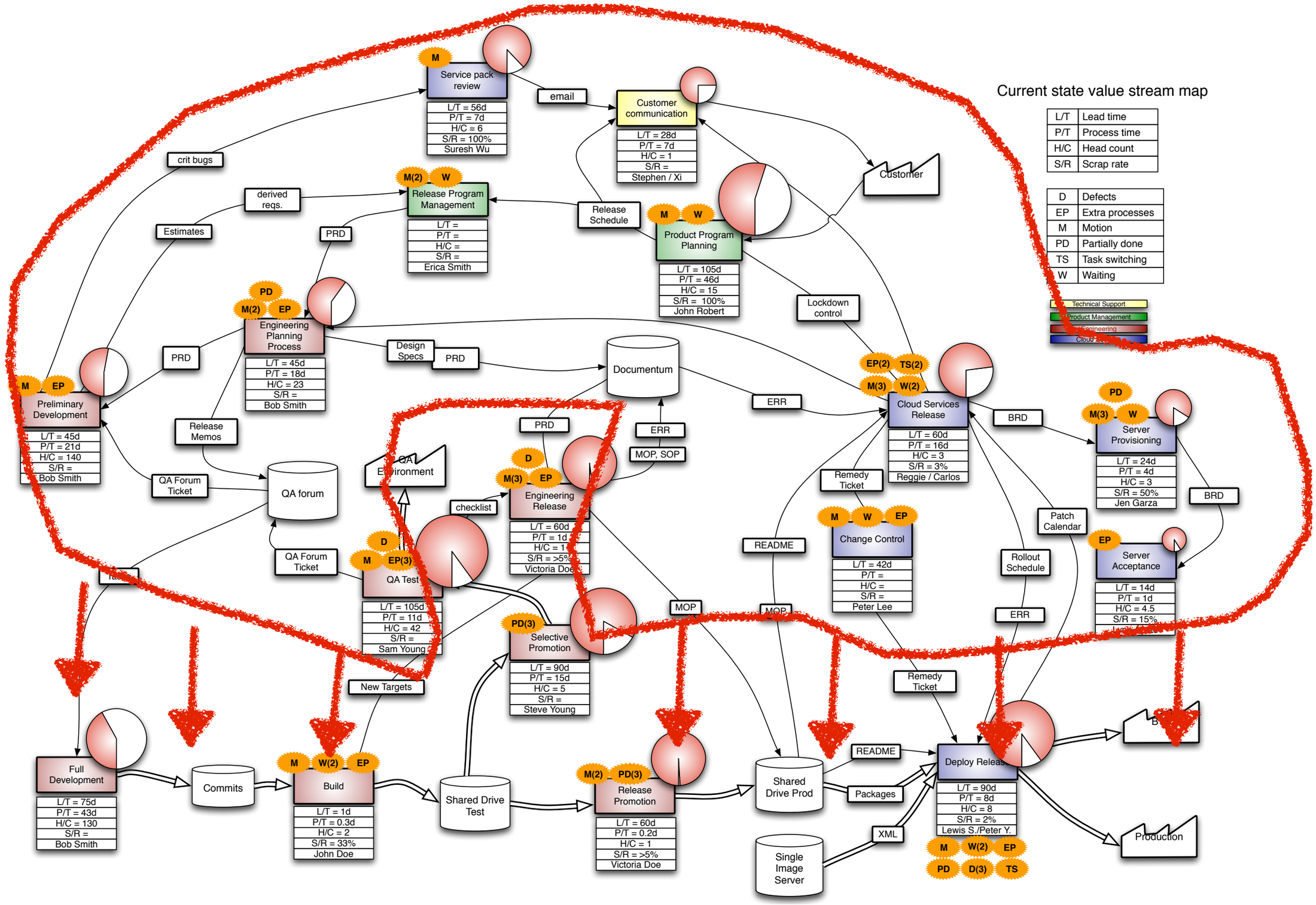
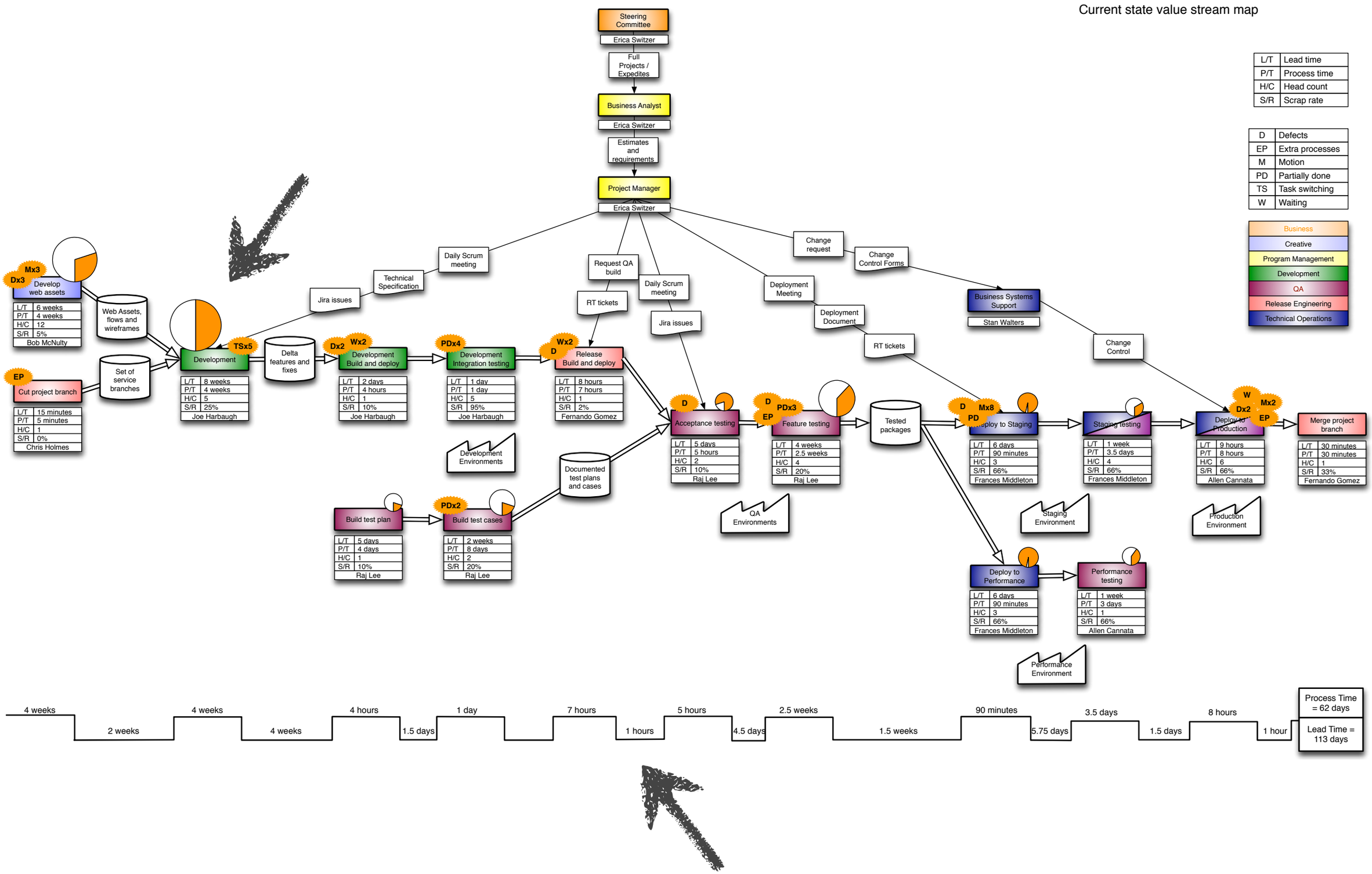
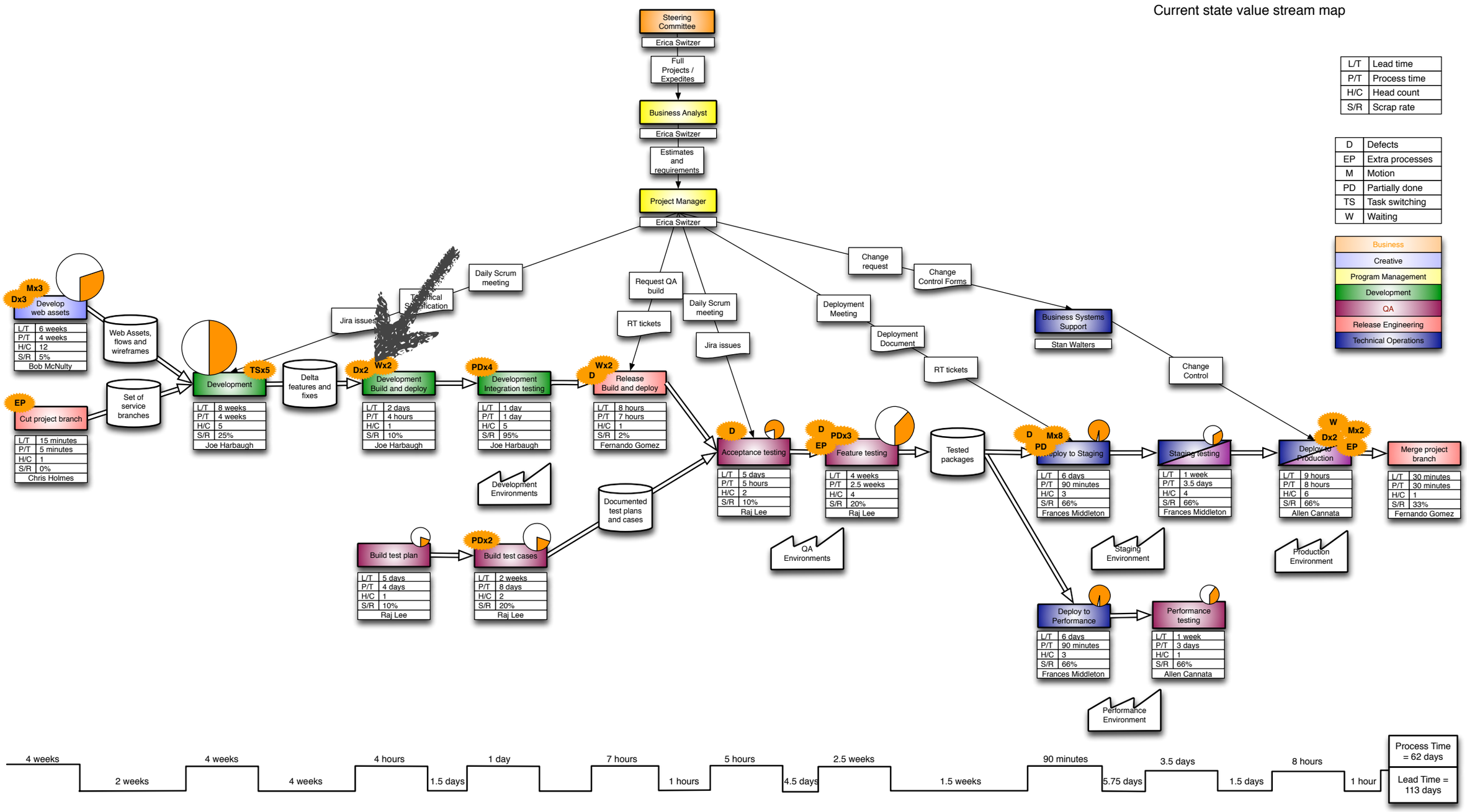


Timeline Analysis



Waste Analysis



Waste Analysis

Waste	Icon	Description	Examples
Partially Done Work	PD	Any work item that is produced in the solution delivery process that has not been completed. This includes both partially done work within a process (ex: not reviewed requirements document) and work sitting in an inventory (ex: code waiting for QA). Partially done work becomes obsolete and loses value as time progresses.	• Documentation waiting for review • Untested code • Undeployed code
Extra Processes	EP	Any additional work that is being performed in a process that does not add value to the client. This may be documentation that is not used by the downstream processes or reviews/approvals that do not add any value to the output. Extra processes add effort and time to the value stream.	• Unused Documentation • Unnecessary reviews/approvals
Extra Features	EF	Gold plating or other additional features built into the solution that is not needed by the business. This may be features driven by technology or when the business asks for everything but the kitchen sink. Extra features adds complexity and effort to test and manage the functionality.	• Features driven by technology only • Features not likely to be used
Task Switching	TS	When people are assigned to multiple projects/streams requiring them to multi-task. The time required for context switching and managing dependencies between work adds additional effort and time to the value stream.	• People on multiple projects • Running concurrent streams with high dependencies
Waiting	W	Any delays between work requiring resources to wait until they can complete the current work item. Delays increase cycle times and prevent the client from realizing the value from the product as soon as possible.	• Delays from review/approvals
Motion	M	Amount of effort to move information/materials from one process to another. If people have to frequently communicate but are not co-located this is a form of motion waste. As well, hand-offs are another form as they require effort to move from one group to another and may require additional communication to resolve ambiguities	• Distributed teams • Hand-offs
Defects	D	Incorrect, missing and/or unclear information/materials/products create waste as effort is needed to resolve these issues. The amount of time from when the defect is created to when it's discovered increases impact of it to the value stream.	• Build defects • Requirement defects

(Mary Poppendick's "Seven Wastes of Software Development")

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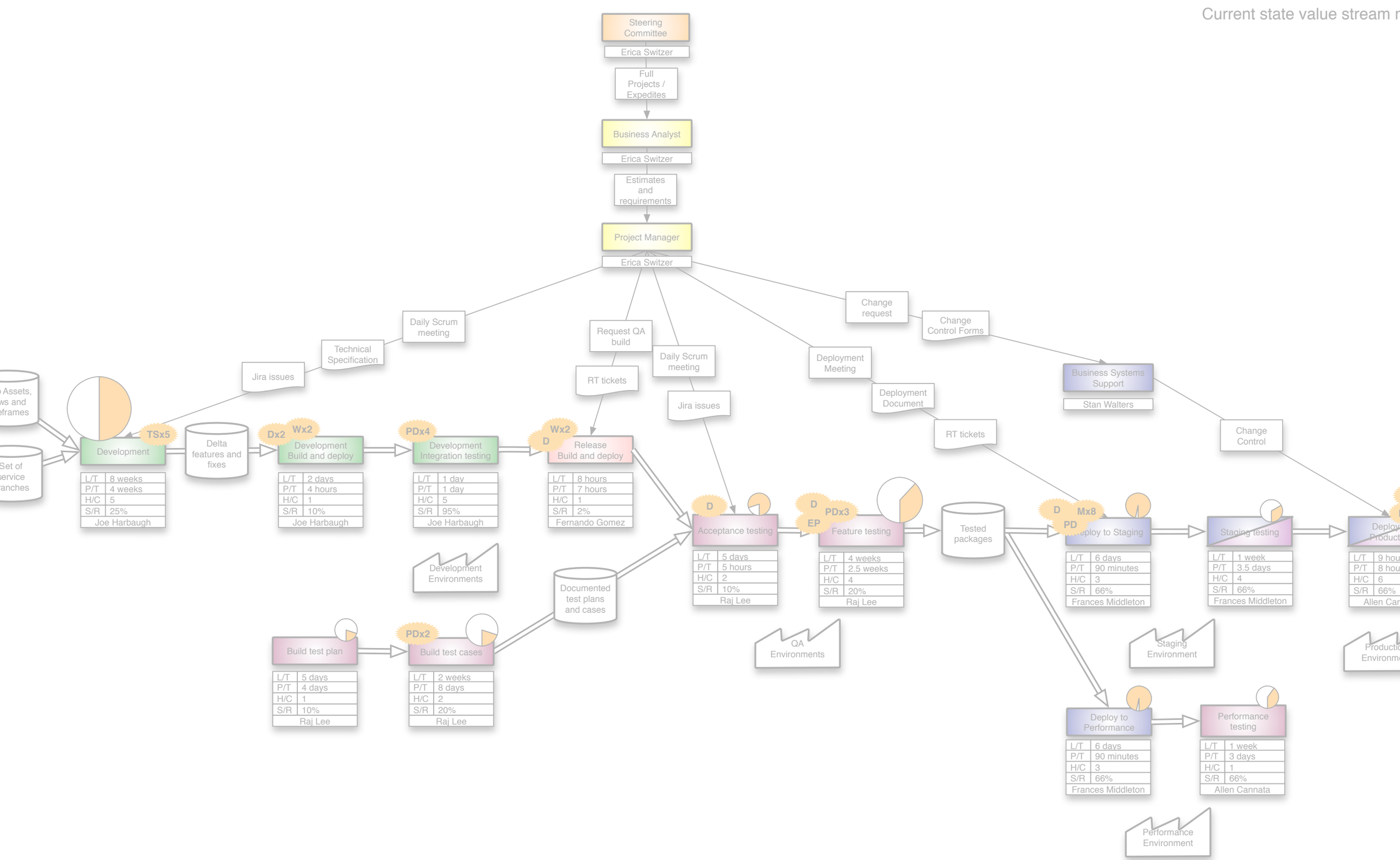
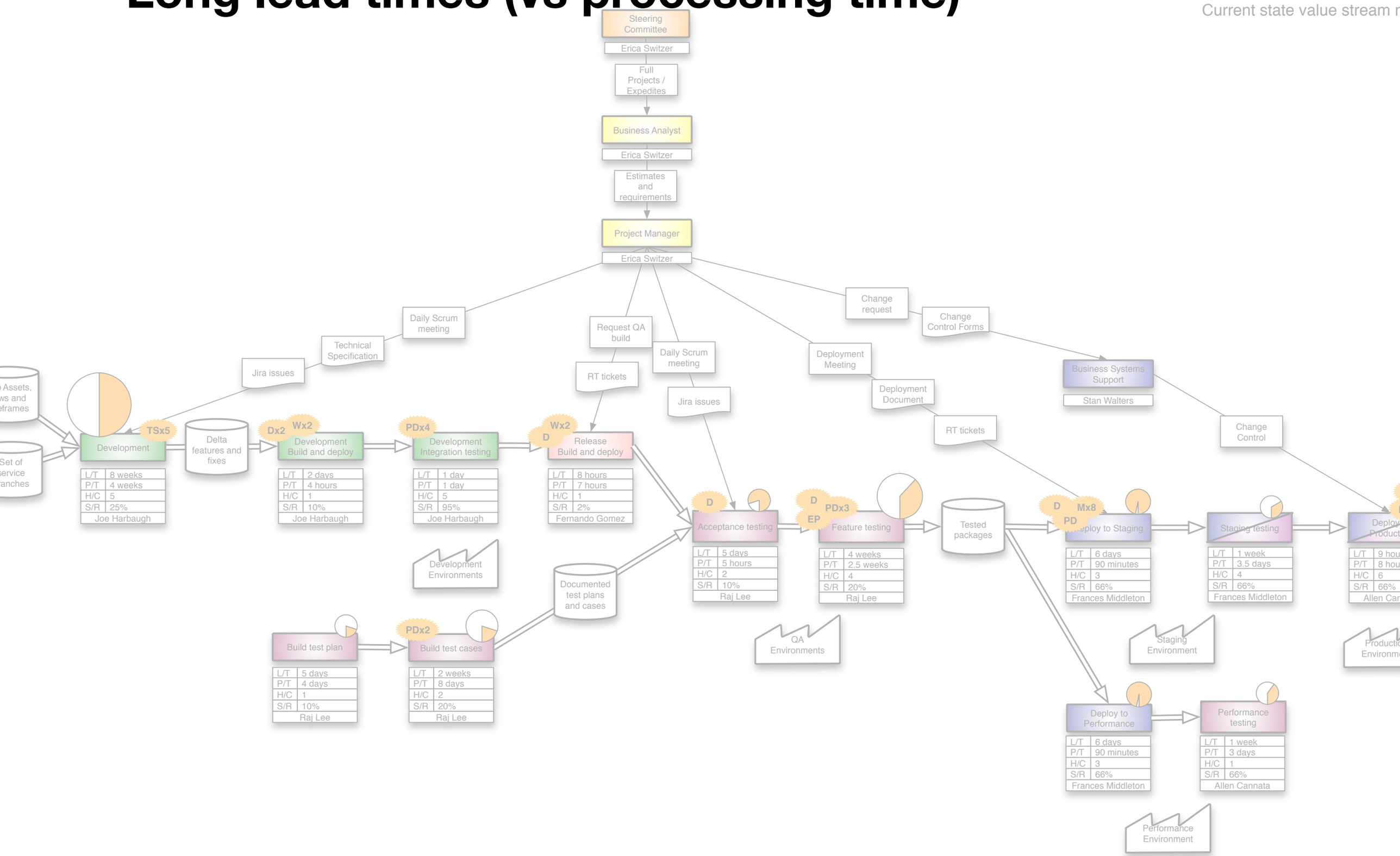


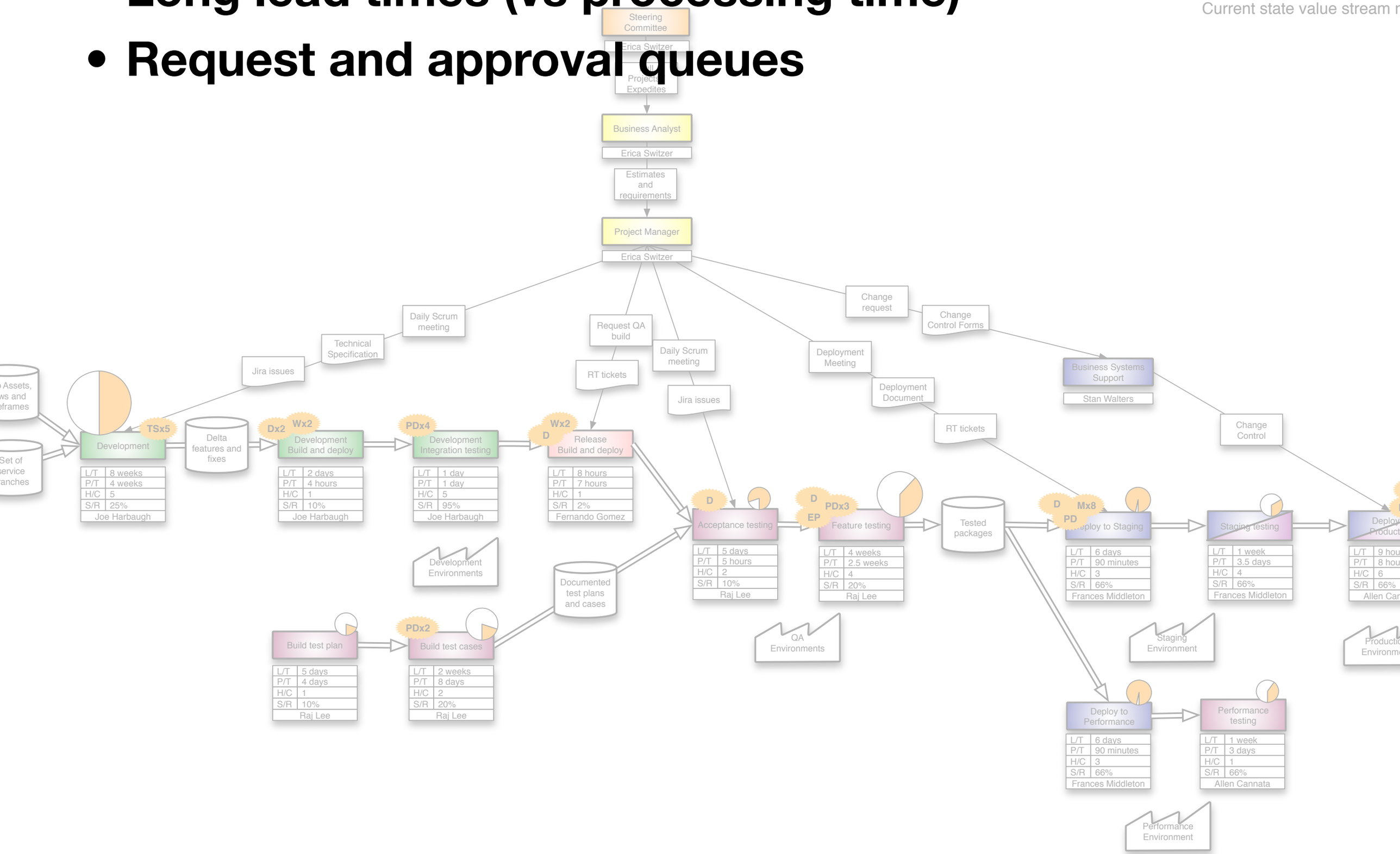
What should we be looking for?

- **Long lead times (vs processing time)**



What should we be looking for?

- **Long lead times (vs processing time)**
- **Request and approval queues**



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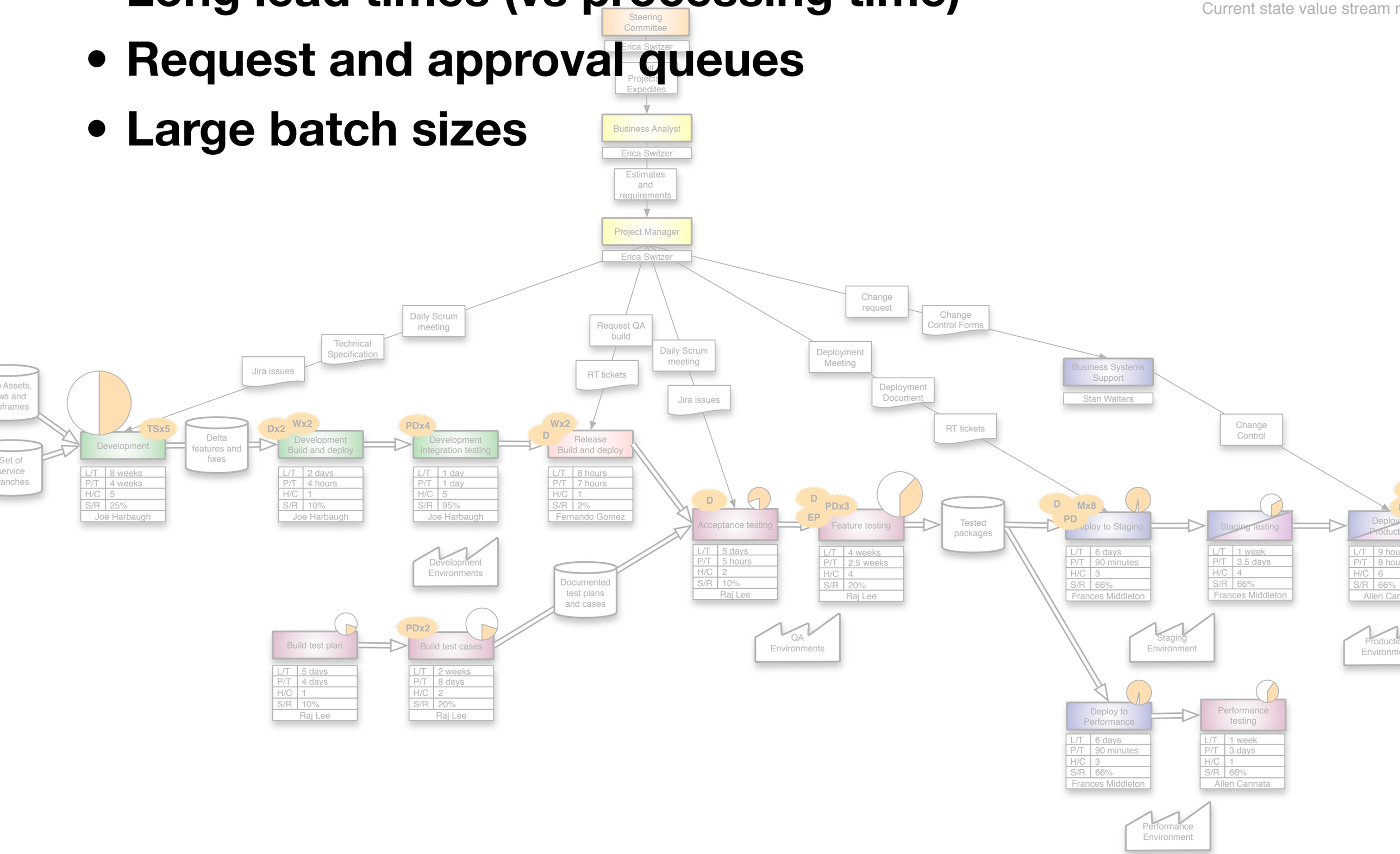
- Large batch sizes



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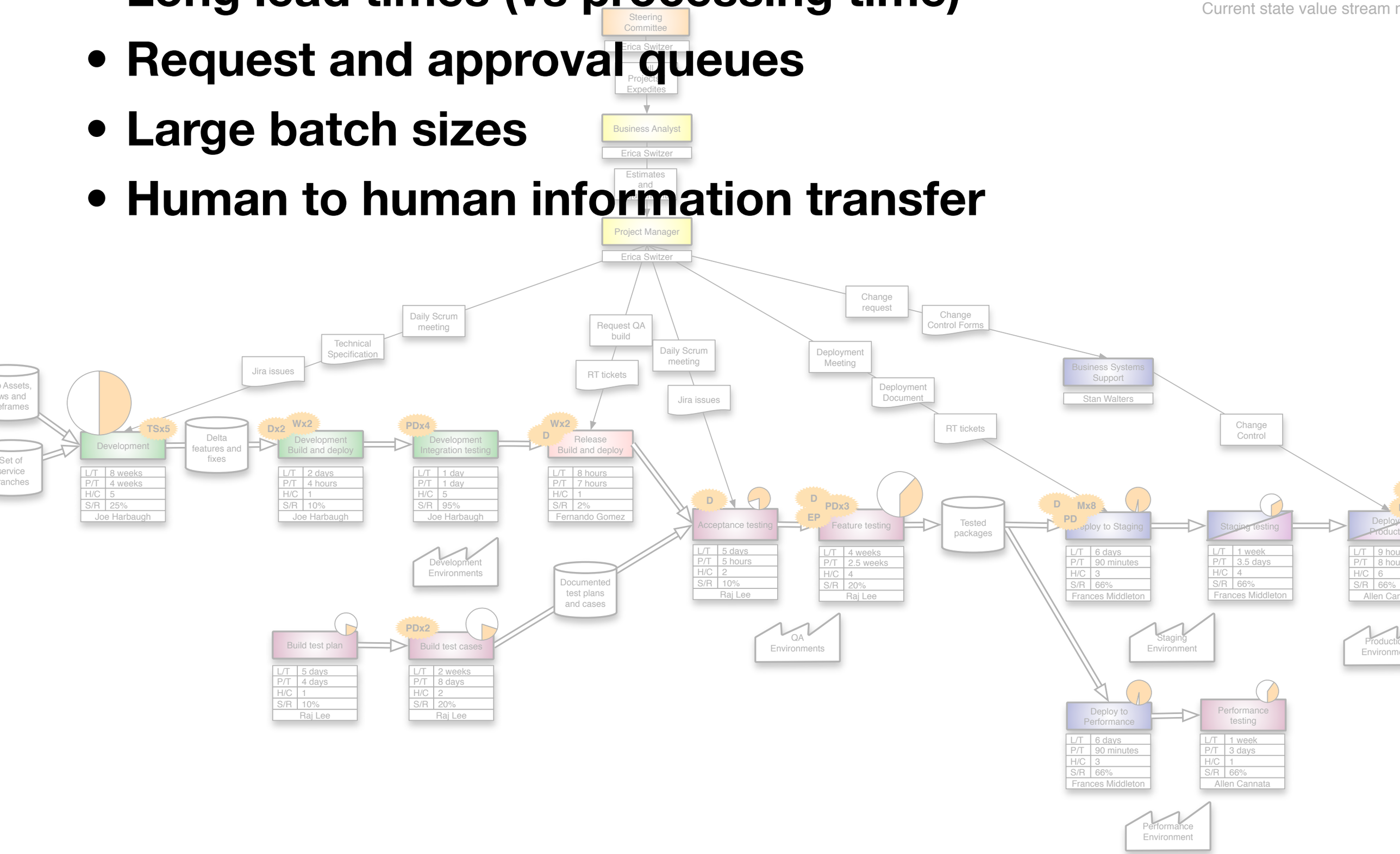
- Human to human information transfer



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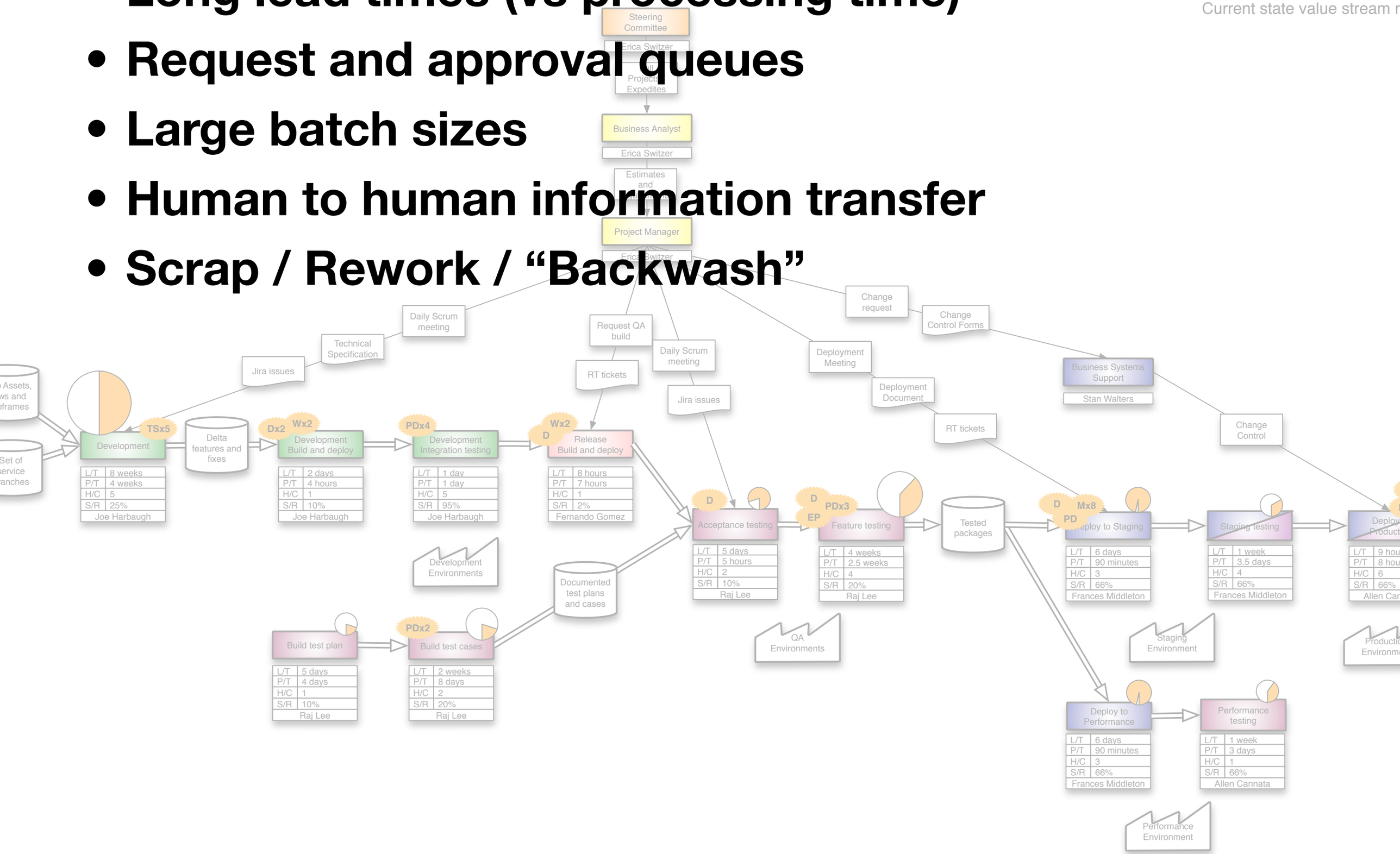
- Scrap / Rework / “Backwash”



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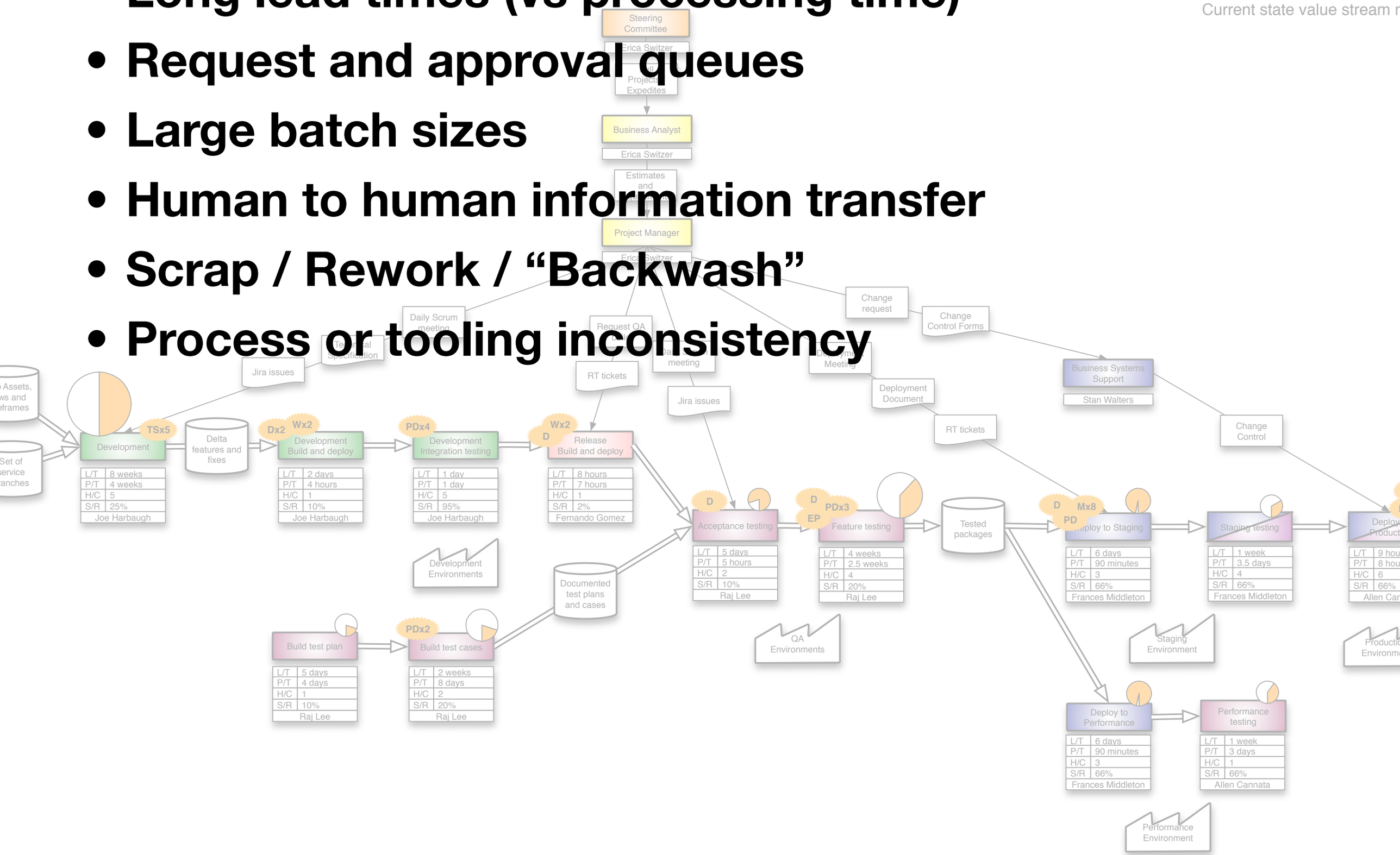

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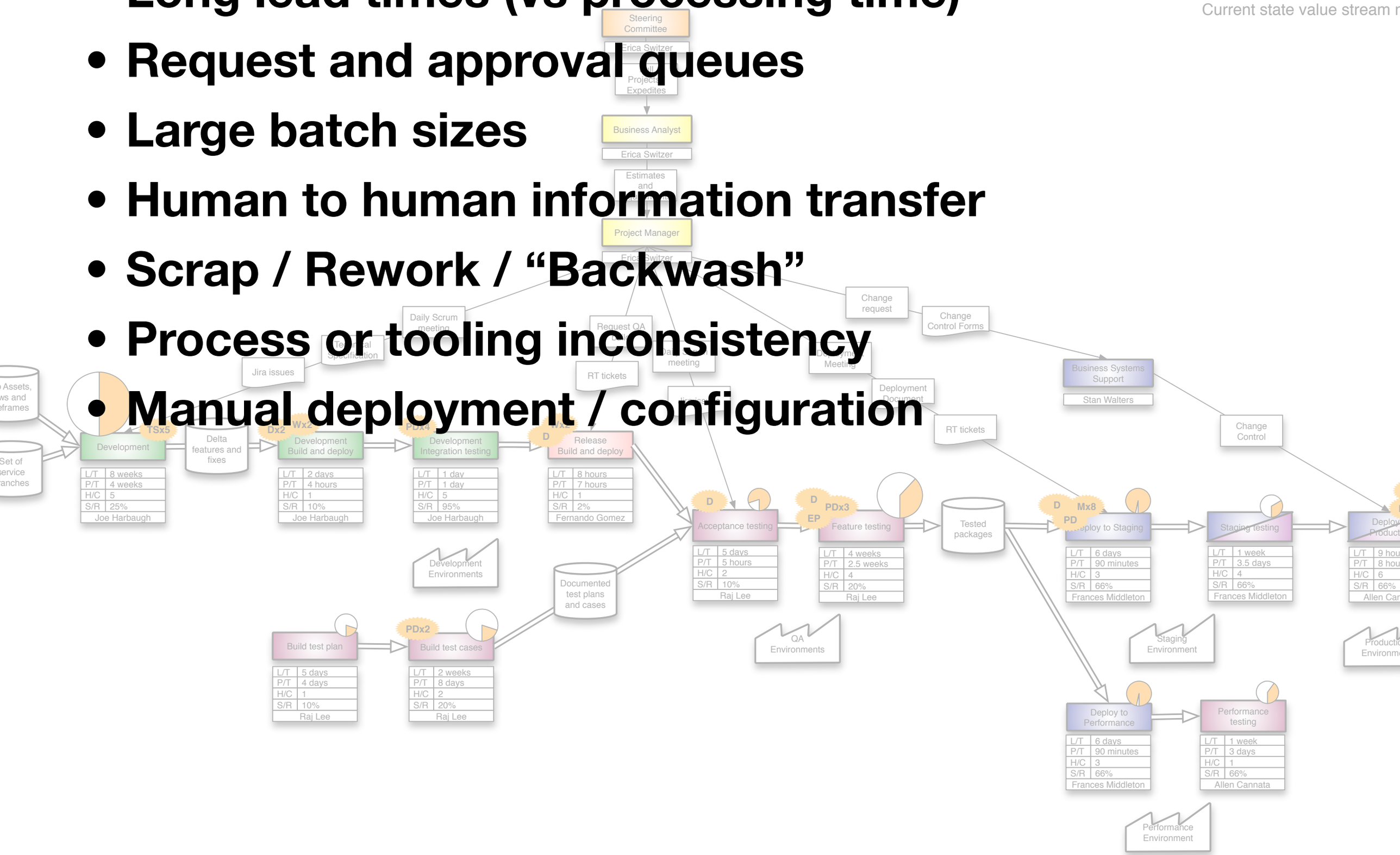

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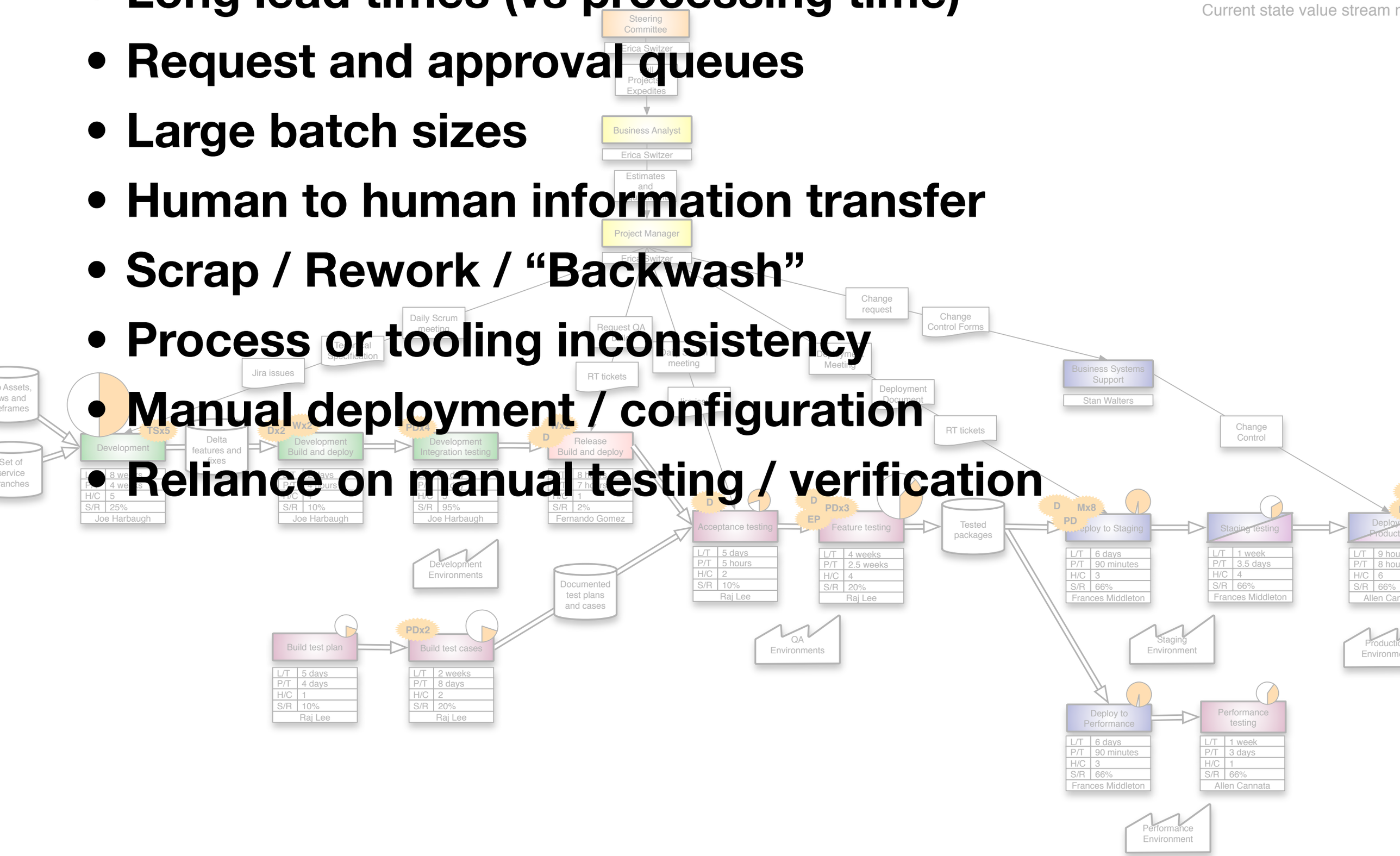

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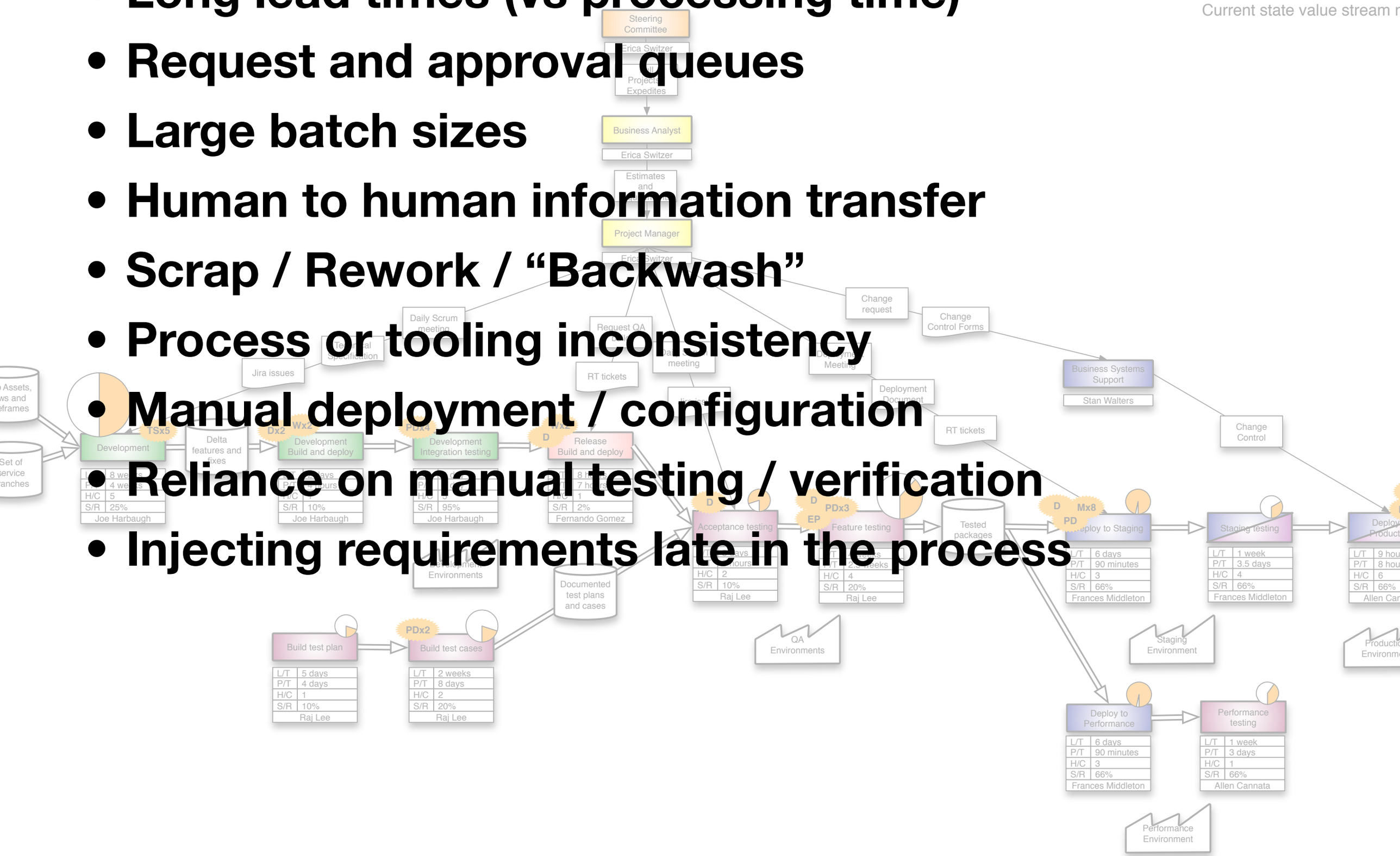

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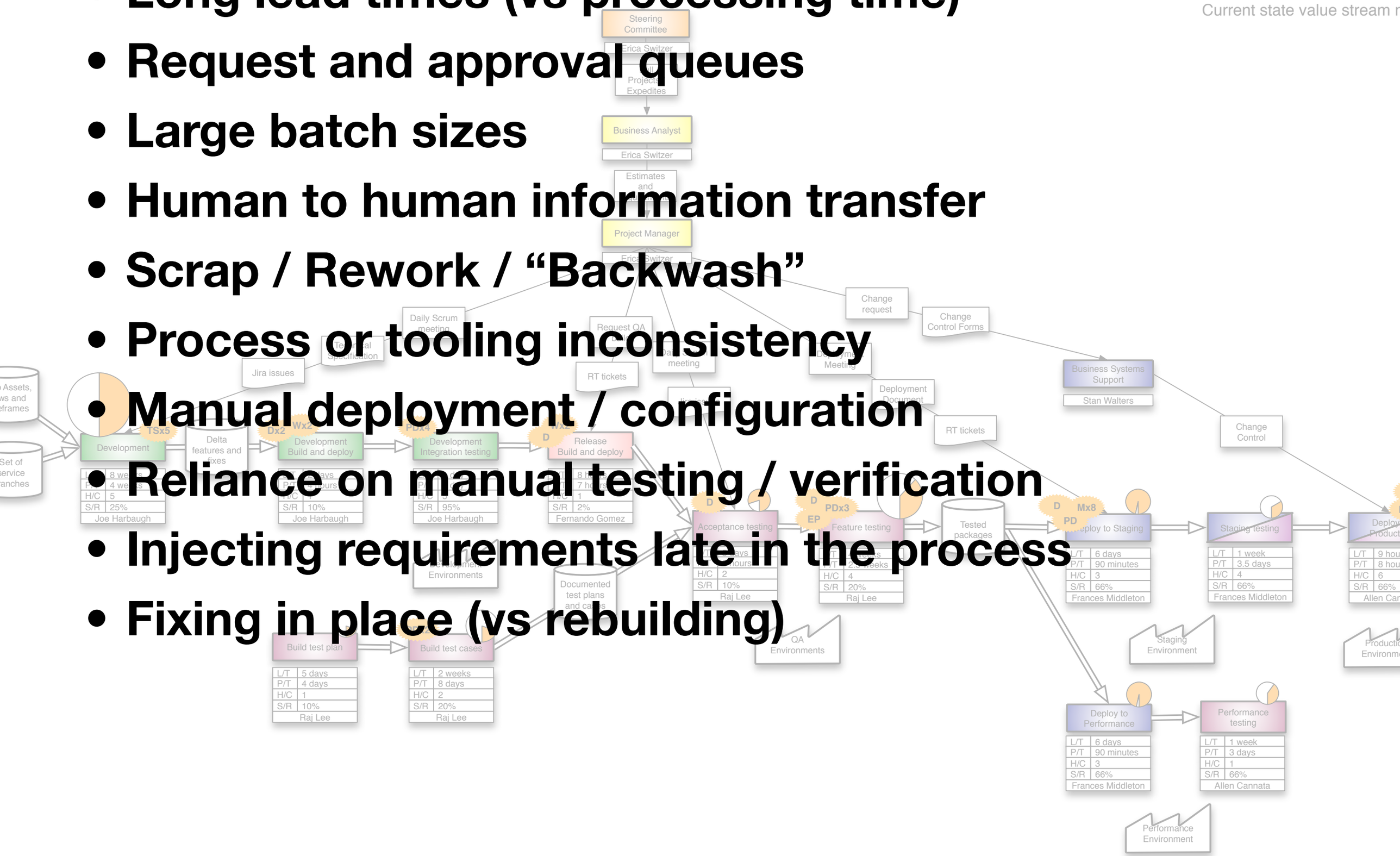

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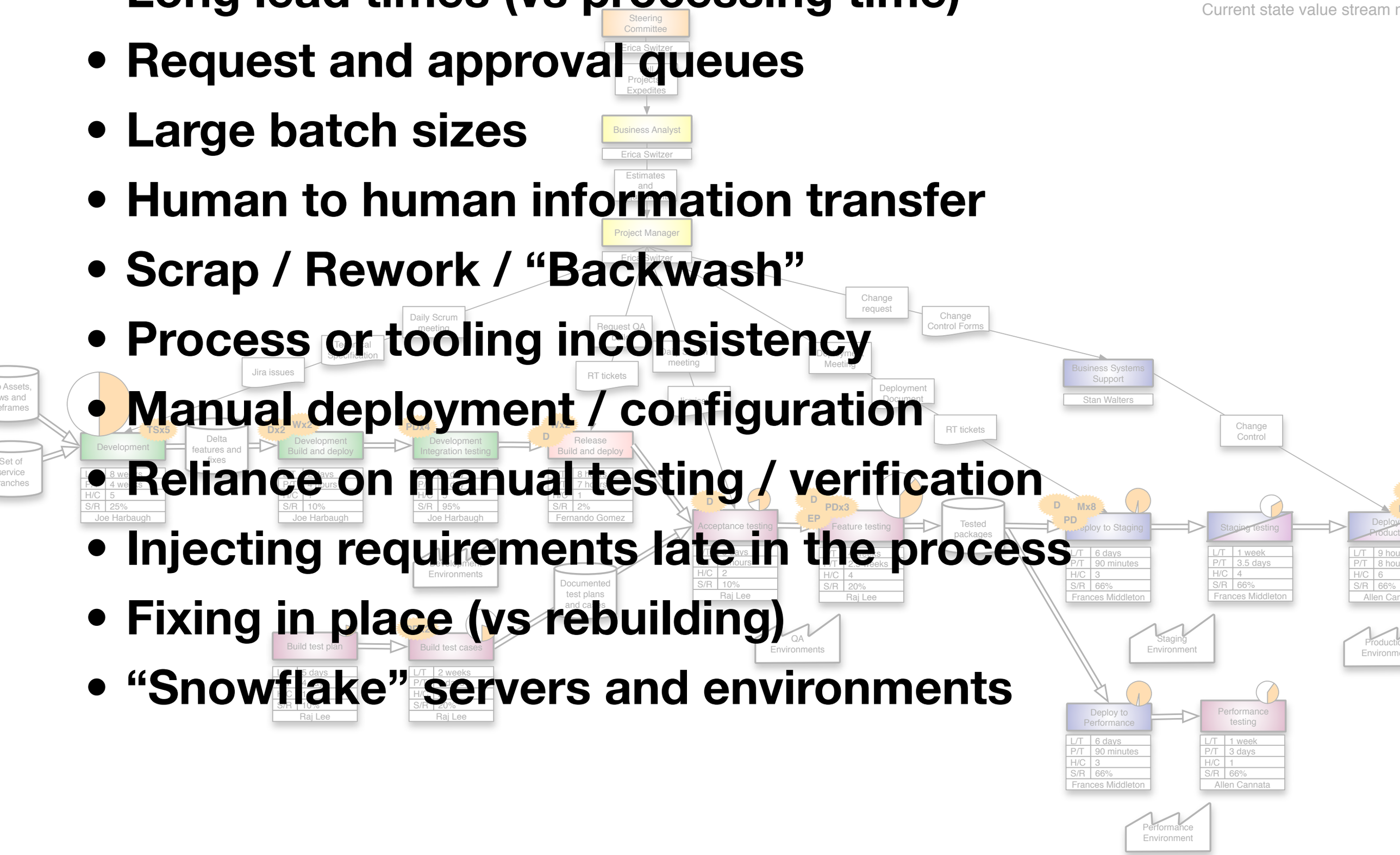

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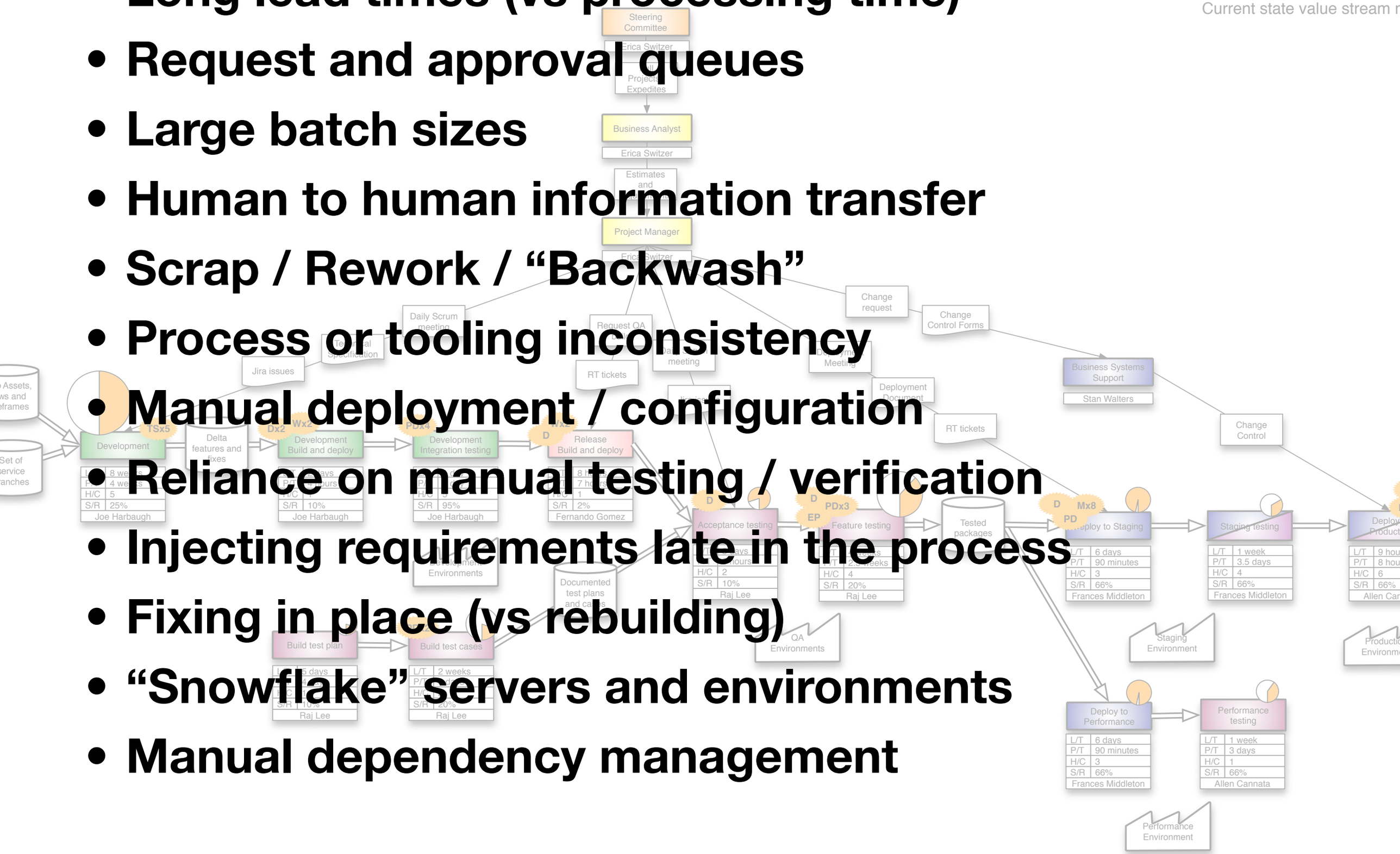

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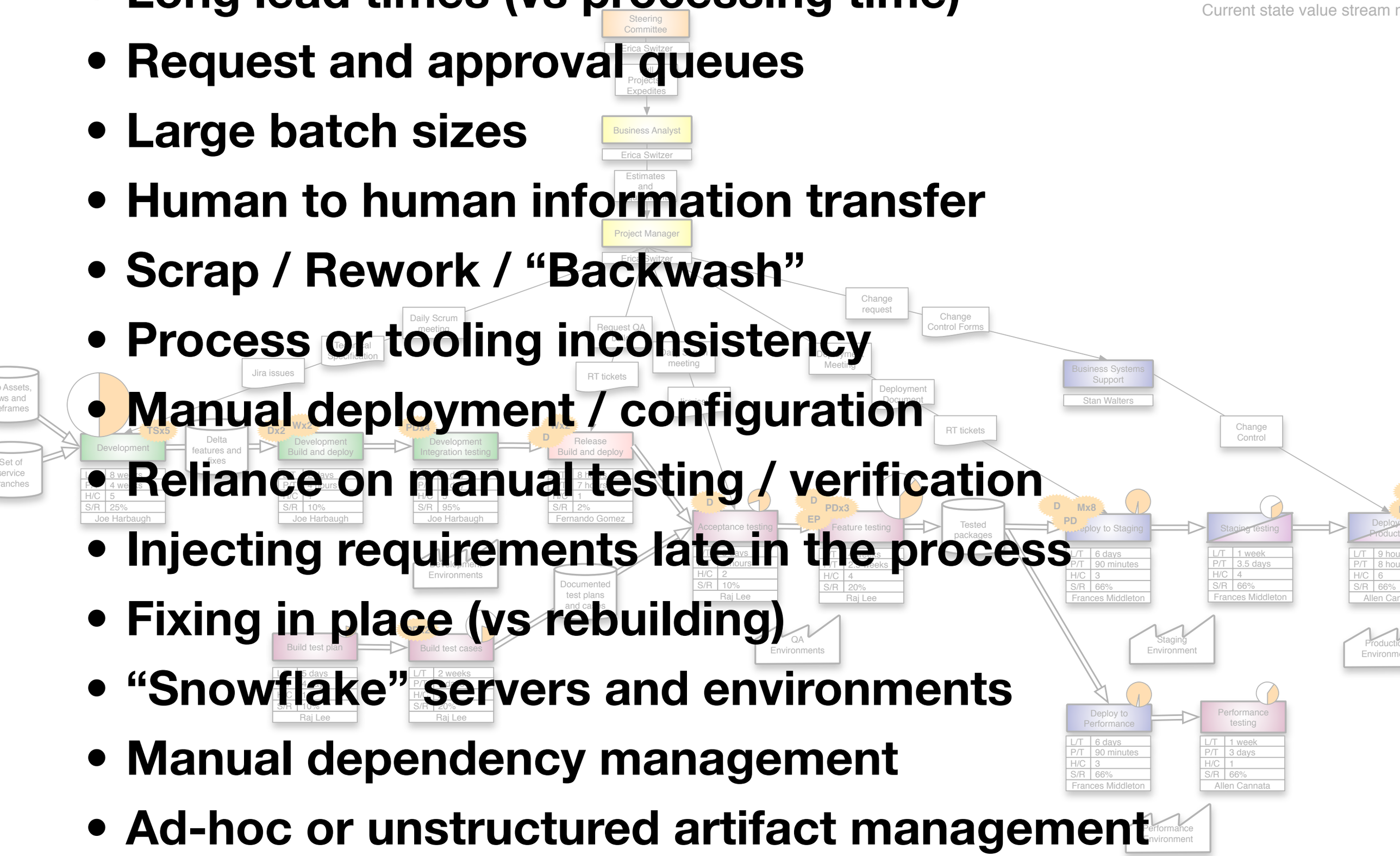

Building organizational alignment

1. Socialize the concepts and vocabulary
2. Visualize the system
   a. value stream mapping
   b. timeline analysis
   c. waste analysis

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3. Pick metrics that matter

Are you getting better as an organization?

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- Cycle Time

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- Cycle Time
- MTTD (Mean Time To Detect)

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- MTTR (Mean Time to Repair)

Are you getting better as an organization?

- Cycle Time
- MTTD (Mean Time To Detect)
- MTTR (Mean Time to Repair)
- Quality at the Source (Scrap)

Metrics chains tie the individual to the goal

What matters to the business

Capability that influences what matters to the business

Activity over which an individual can cause/influence outcomes

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(continuous improvement program)

Start with a burst of energy

DevOps Workshop

Agenda	Day 1	Day 2	Day 3	Day 4
	Kickoff DevOps Goals Key Concepts	Current State Analysis	Future State / Solution Design	Future State / Solution Design
	Lunch	Lunch	Lunch	Lunch
	Case Study Discussion	Current State Analysis	Future State / Solution Design	Wrap-up

= Principles = Analysis = Design

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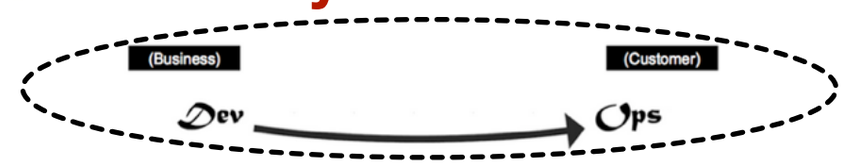

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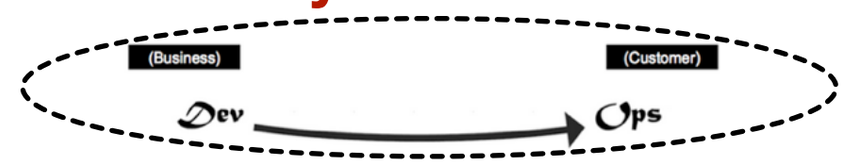
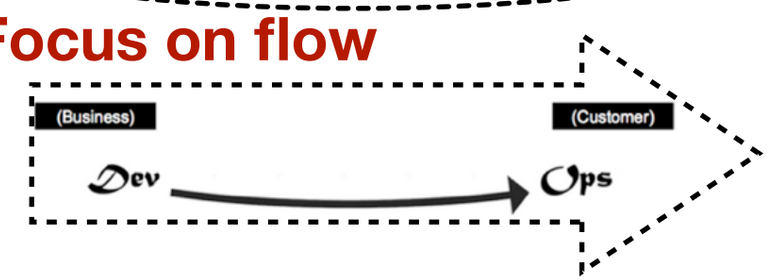


2. Focus on flow



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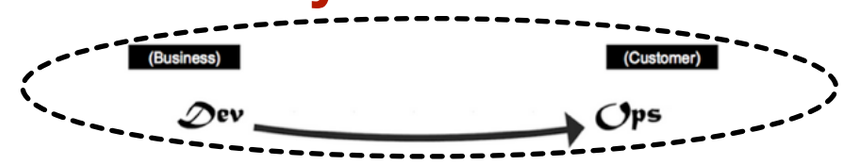

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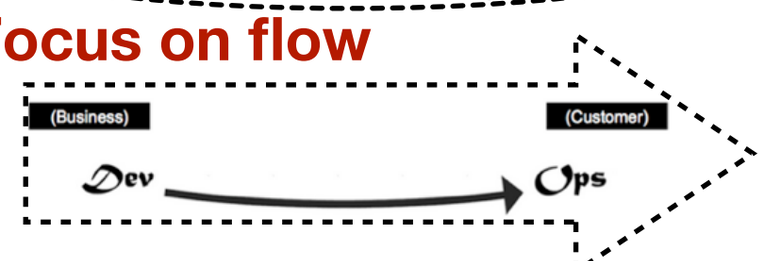

3. Recognize feedback loops

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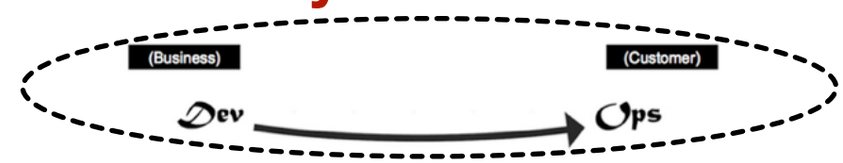

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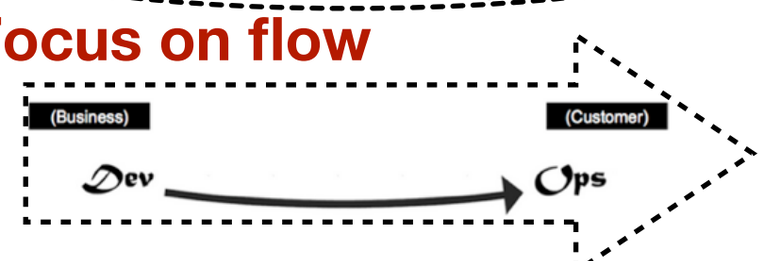
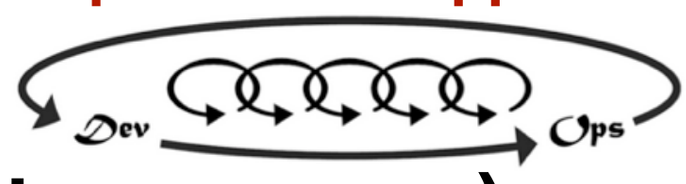


3. Recognize feedback loops

4. Look for continuous improvement opportunities



Dev initiated DevOps Transformation

1. Take an “operations first” mindset
2. Build organizational alignment
3. **Establish a new model for working with Ops**

Example

What does Dev want?

What does Dev want?

- **What they need to get their job done**

What does Dev want?

- What they need to get their job done
- When they need it

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What does Dev want?

- What they need to get their job done
- When they need it
- Fast feedback
- Dependable and predictable systems to integrate with
- Limit extraneous information or tasks
- For everyone to get out of their way

What does Ops want?

What does Ops want?

- Enough time to do their work
  - Deployment / provisioning
  - Stability and performance engineering
  - Hardening and security
  - Paying down technical debt
  - Compliance

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What does Ops want?

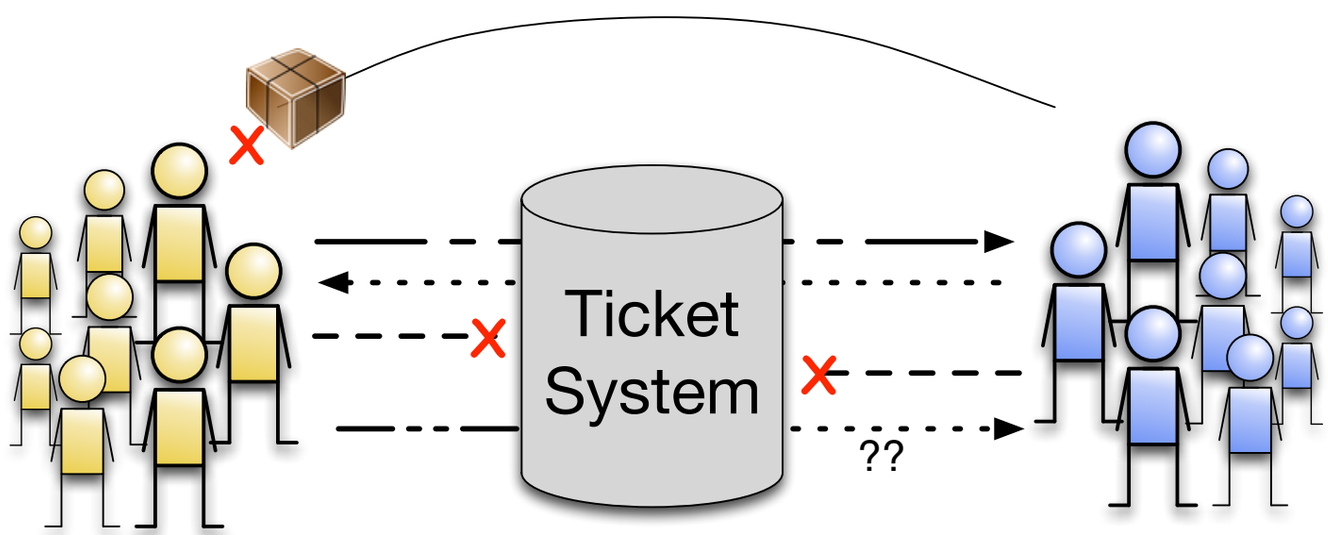
- Enough time to do their work
  - Deployment / provisioning
  - Stability and performance engineering
  - Hardening and security
  - Paying down technical debt
  - Compliance
- To have their requirements considered earlier in the lifecycle
- Confidence that changes are not going to break the system or create a vulnerability

Dev and Ops interact through request queues

Dev and Ops interact through request queues

Leads to...

- Bottlenecks
- Increased lead times
- Reinforces organizational silos
- Misinterpretation or omissions



Replace request queues with self-service interfaces

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    - Less time spent “doing”, more time adding value
    - Stop being the blocker

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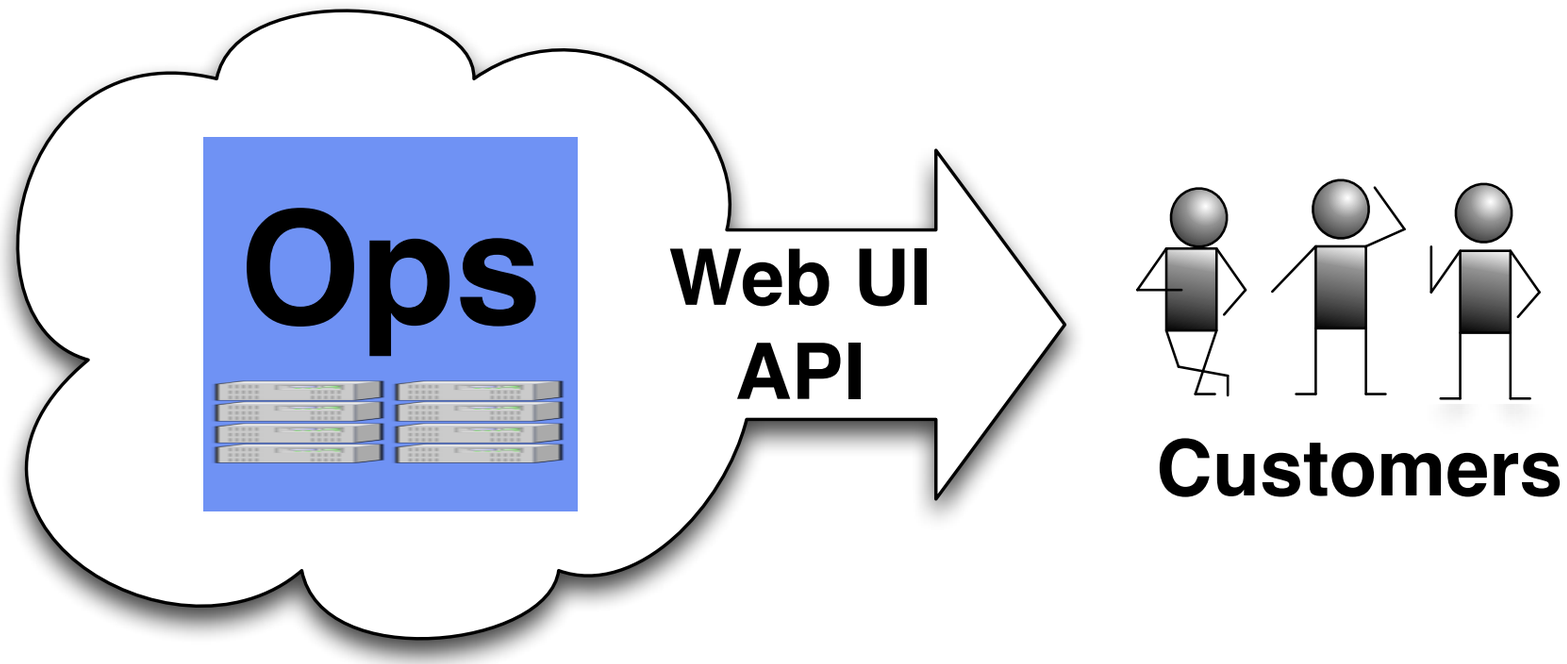
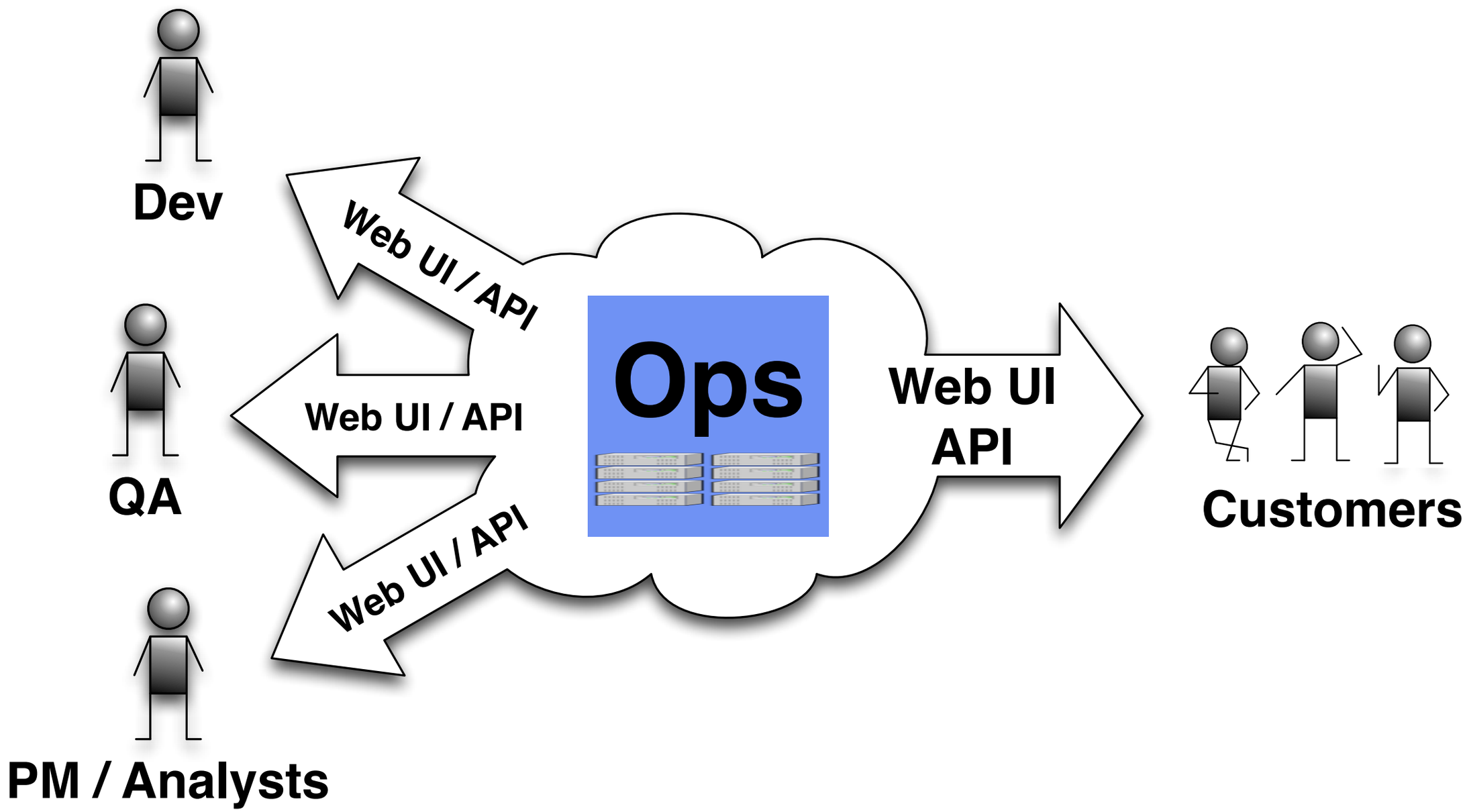
- Fully automate what used to be done by humans
- Put behind self-service interfaces for on-demand consumption
- Benefits to Ops
  - Less time spent “doing”, more time adding value
  - Stop being the blocker
- Benefits to rest of organization
  - Decouple processes and avoid bottlenecks
  - Each team can move at their own pace
  - Cuts down on scrap and communication overhead
  - Enables a pull-based lifecycle

Service provider mindset is already familiar



Extend concept to internal interfaces as well

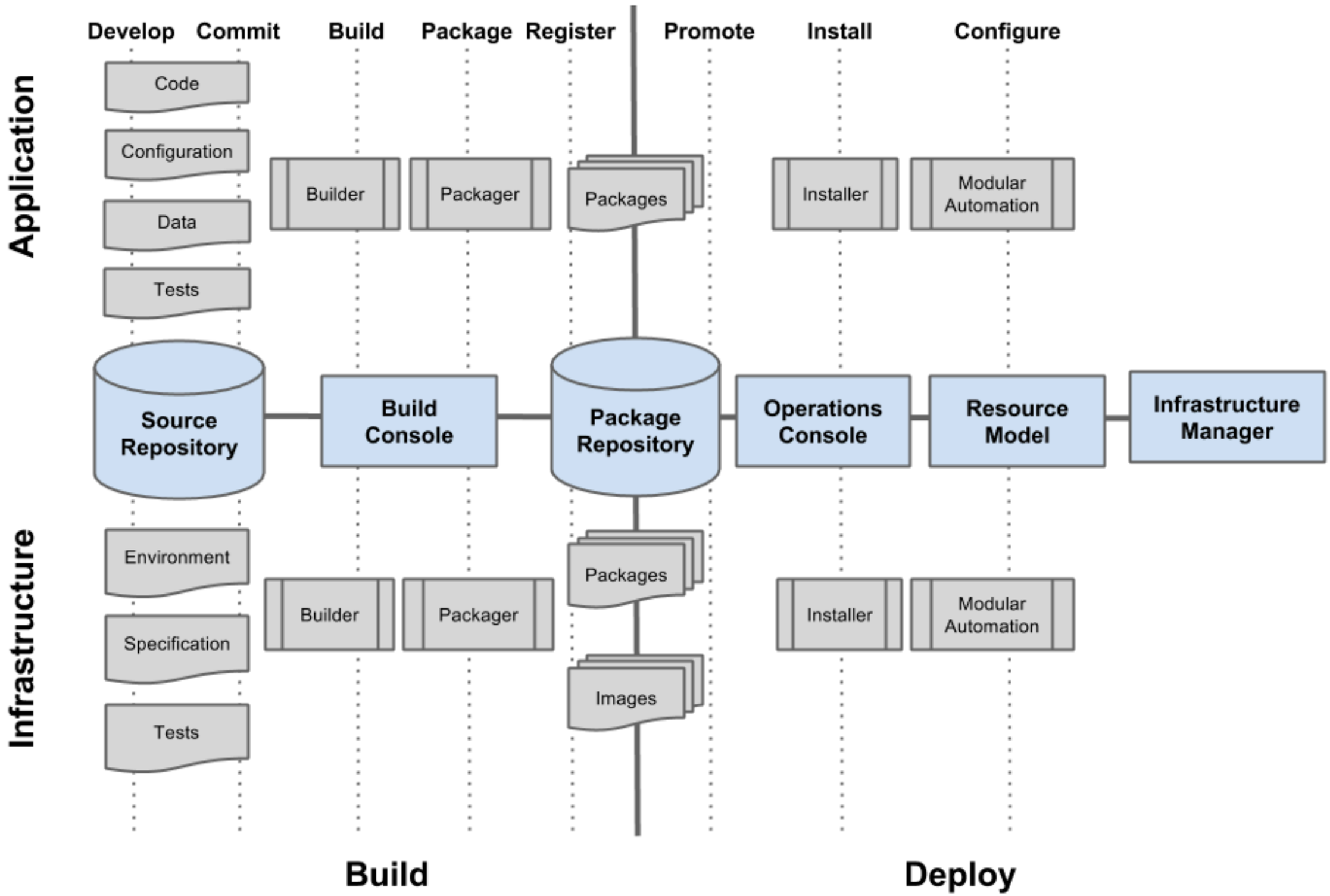


Why Ops will initially say no

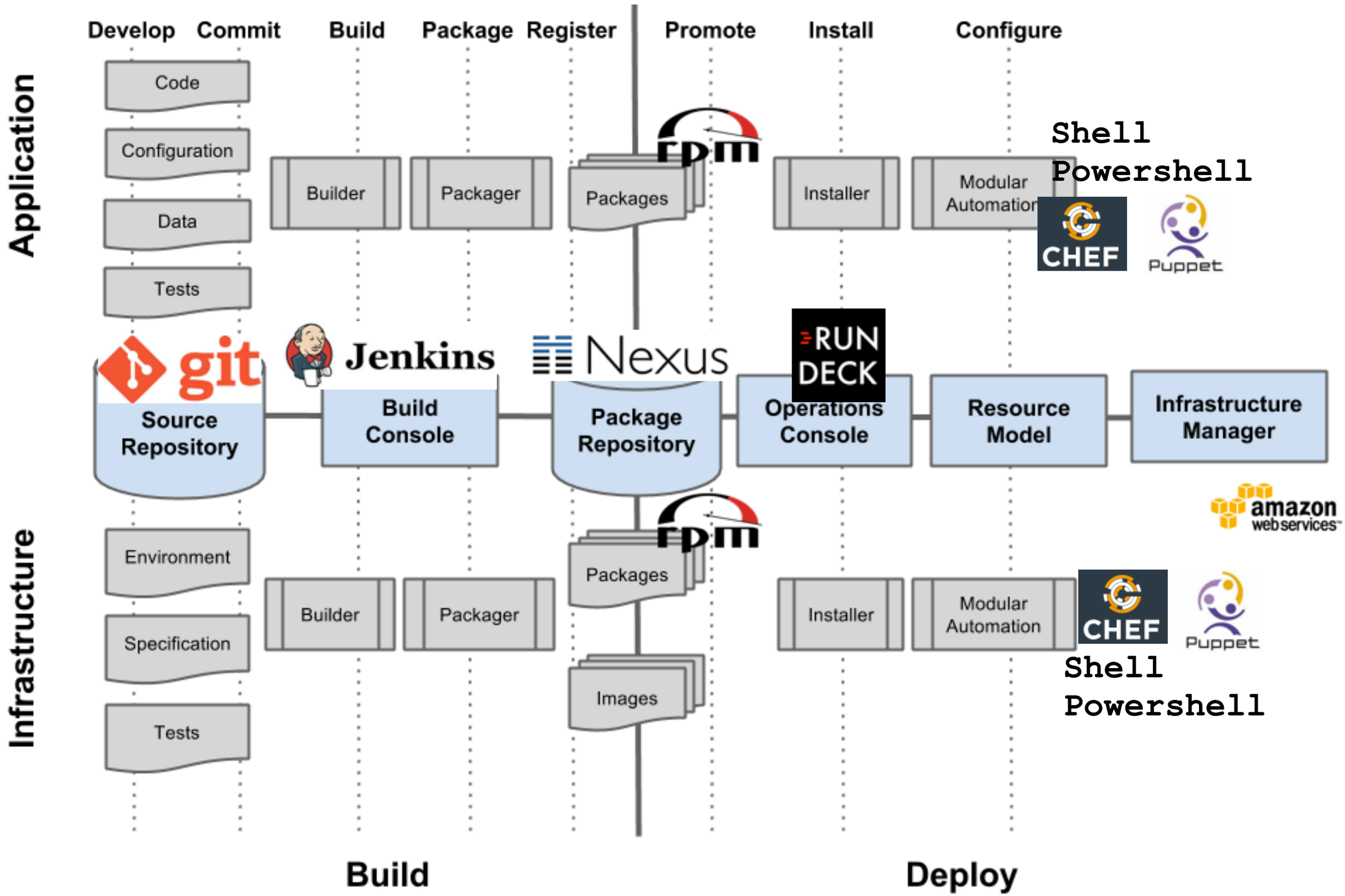
- Low confidence that new changes won’t break things
- Governance / Compliance
  - Auditing
  - Access Control
  - Accounting

...so lets show them what's possible step-by-step

Fully automated, specification driven lifecycle



Example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Commit
Build
Package
Register
Promote
Install
Configure
Application
Code
Configuration
Data
Tests
Builder
Packager
Packages
Installer
Modular Automation
Shell
Powershell
CHEF
Puppet
git
Jenkins
Nexus
RUN DECK
Source Repository
Build Console
Package Repository
Operations Console
Resource Model
Infrastructure Manager
amazon webservices
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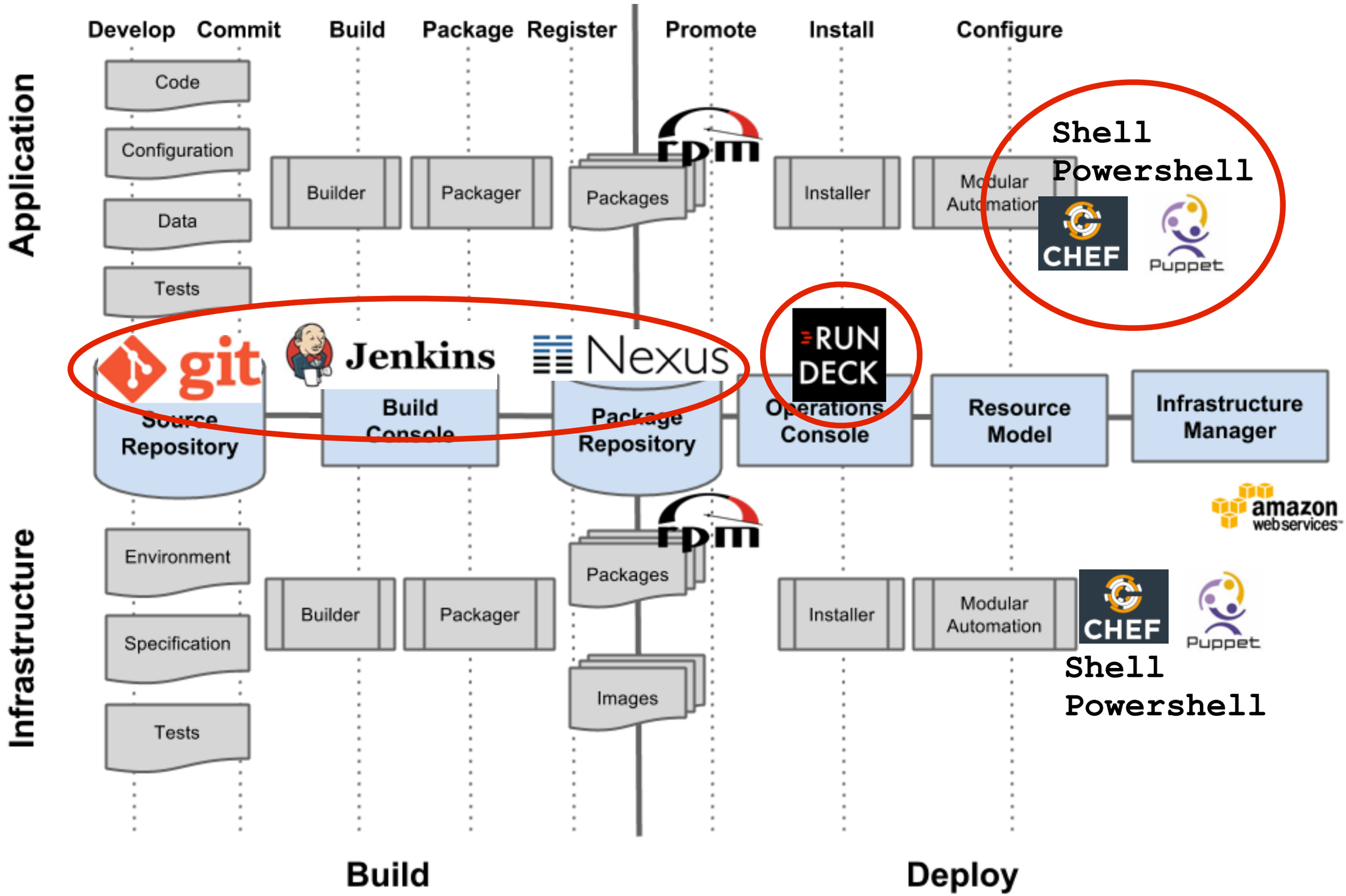
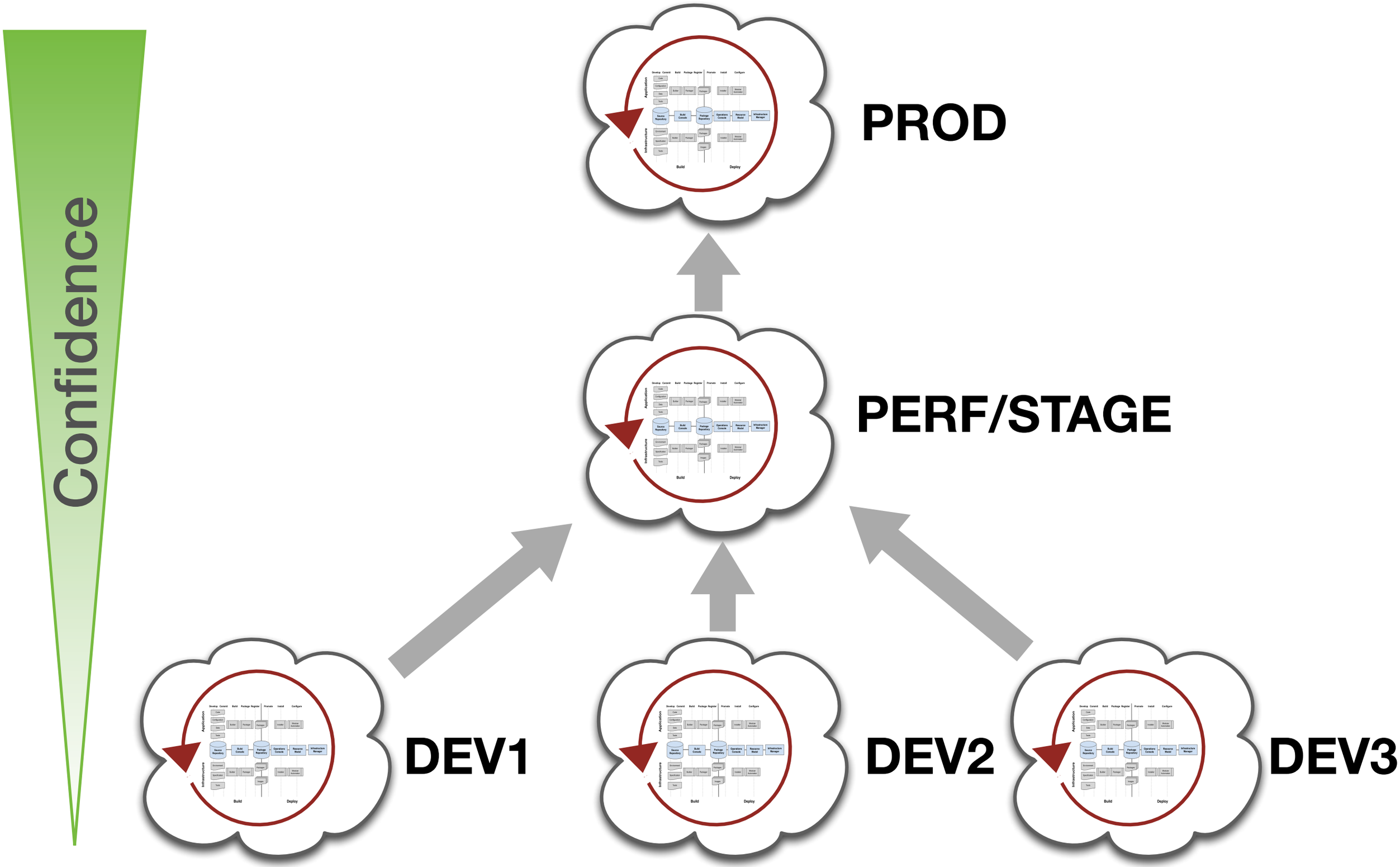
Example Governance / Compliance



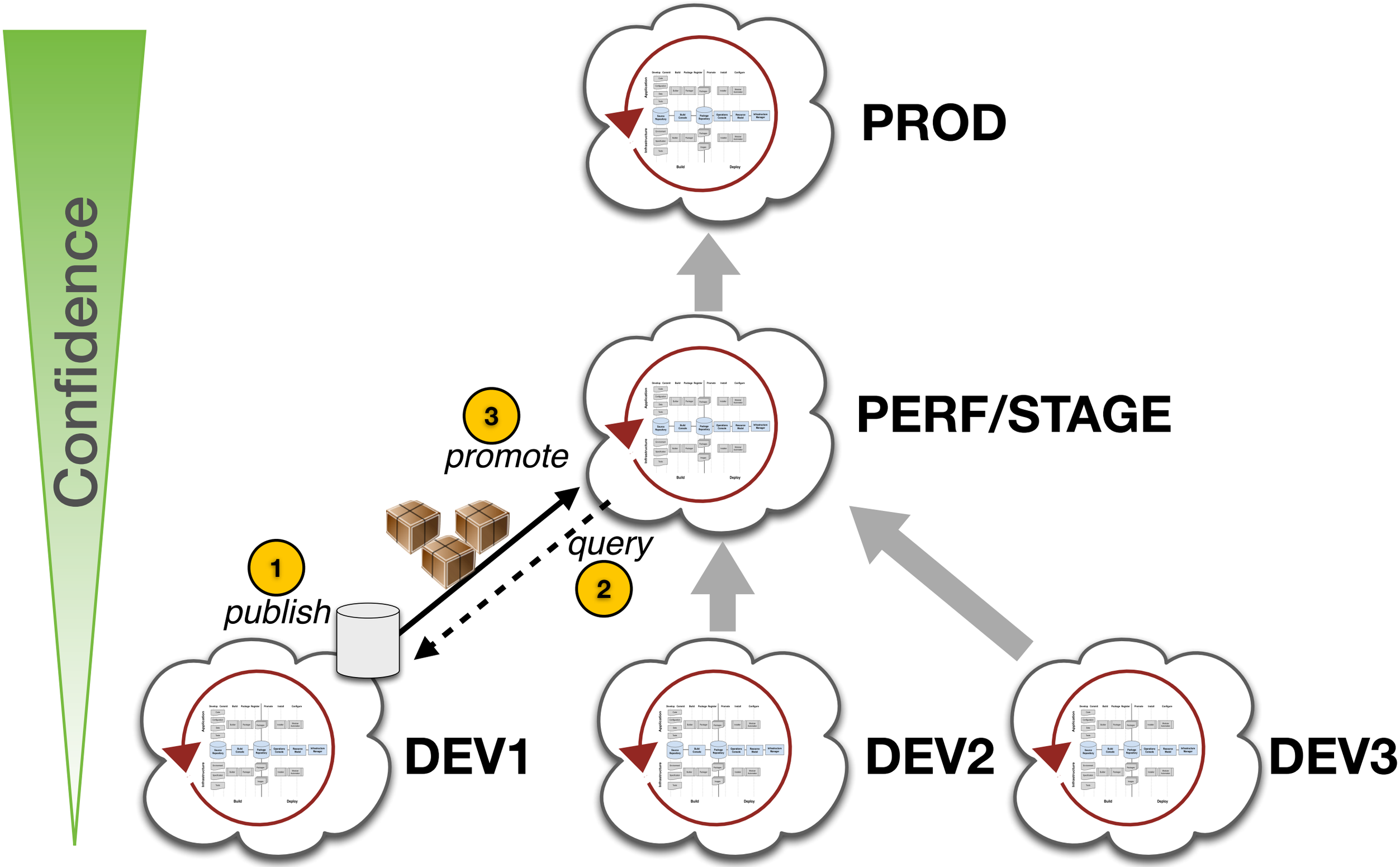
Mitigate quality and security risks

- Repeatedly “rehearse” all operations from earliest possible point in lifecycle
- Everybody should be deploying and testing with the same toolchain, automation, and tests
- QA and InfoSec provide standards and tooling that are used by Dev upfront

Build confidence from the start



Pull-based model to control promotions



Don’t forget to give it a name

Operations as a Service (OaaS)

Ticketless IT

Don’t forget to give it a name

Operations as a Service (OaaS)

More web / cloud friendly

Ticketless IT

Bigger impact with traditional enterprise IT

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Damon Edwards

@damonedwards

dev2ops.org

DevOps Cafe

http://www.dtosolutions.com

http://www.simplifyops.com

QCon

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