

DEVOPS ENTERPRISE SUMMIT

AN  REVOLUTION EVENT



GET TOGETHER GO FASTER

October 22-24, 2018
The Cosmopolitan of Las Vegas
Las Vegas, Nevada

 Electric Cloud

 REVOLUTION

#DOES18



Operations: The Last Mile

Damon Edwards Co-Founder and Chief Product Officer, Rundeck, Inc.



DEVOPS
ENTERPRISE
SUMMIT

AN  REVOLUTION EVENT



Operations: The Last Mile

Damon Edwards
@damonedwards

 RUNDECK

The RunDeck logo consists of a stylized red 'E' icon followed by the word 'RUNDECK' in a bold, black, sans-serif font.

Developers have had an unfair advantage.



Agile
2001



ITIL
1989



Ah-ha!



Ka-ching!

2018



Story time....



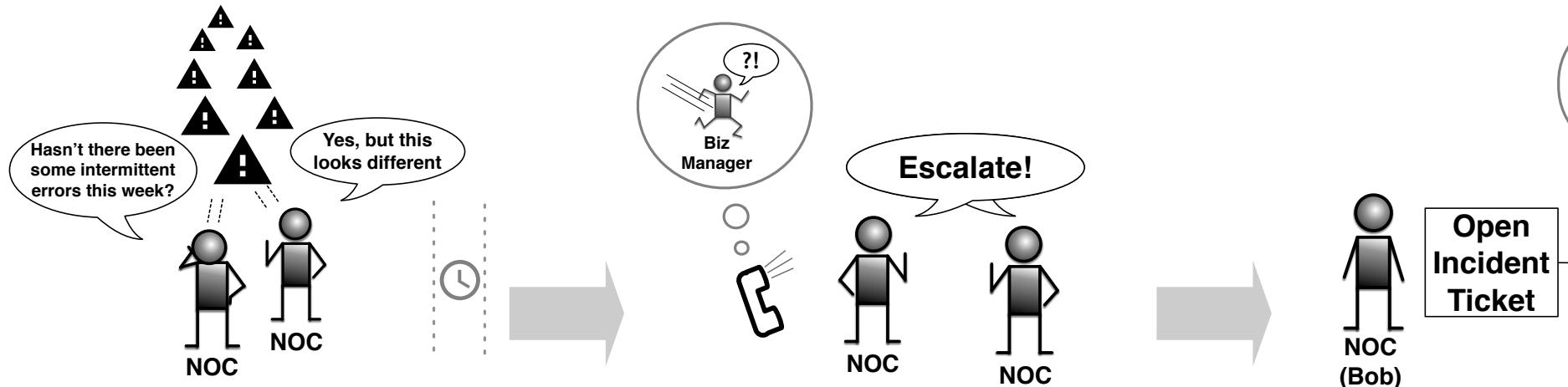
**Digital
Agile
DevOps
SRE**

**Cloud
Docker
Kubernetes
Microservices**



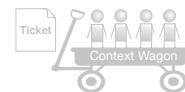
**But nobody was talking about what
happened *after* deployment...**

It was just another Tuesday...

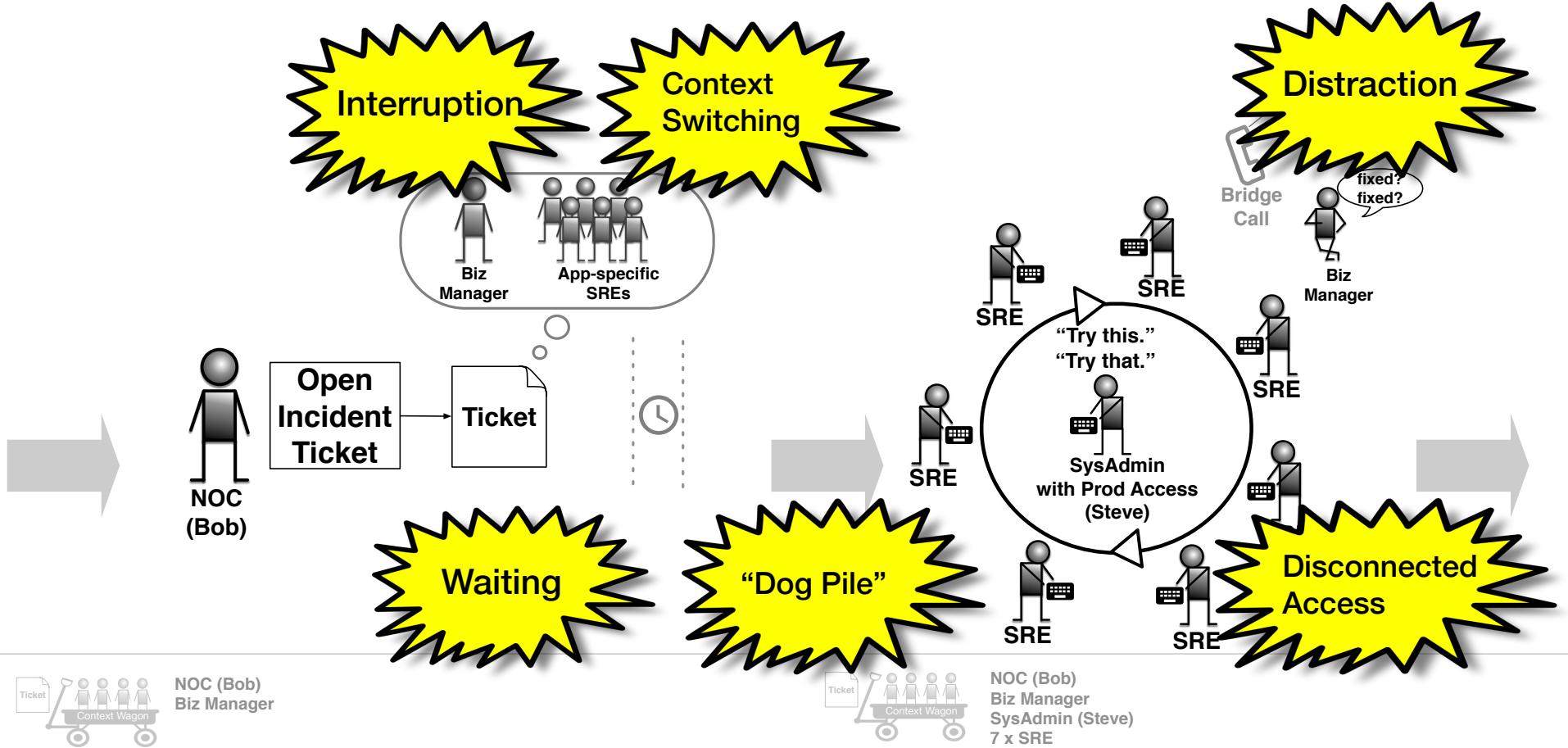


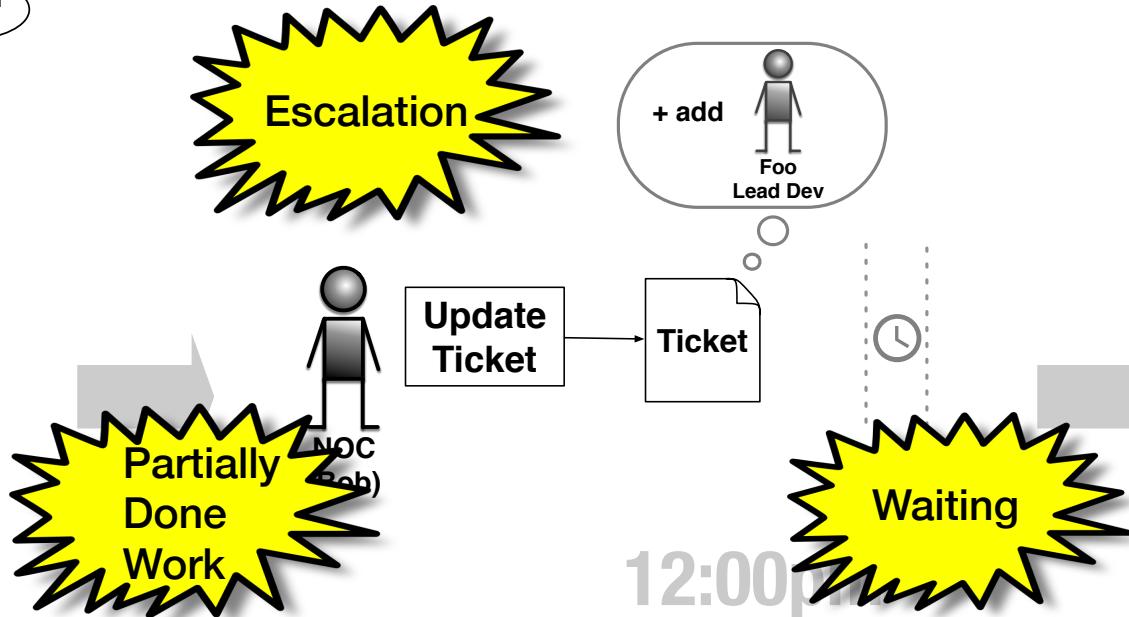
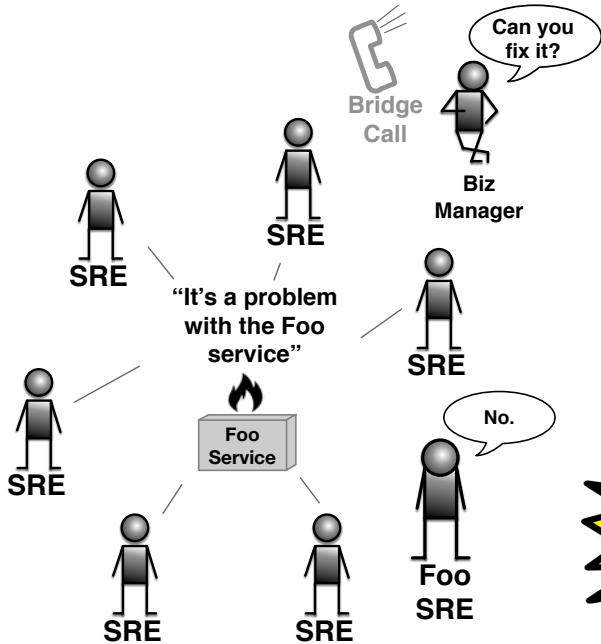
9:30am

10:00am



NOC (Bob)
Biz Manager





pm



Ignore.



Interruption

Hey did you see
that ticket?



App
Manager

sigh.
I'll take a look



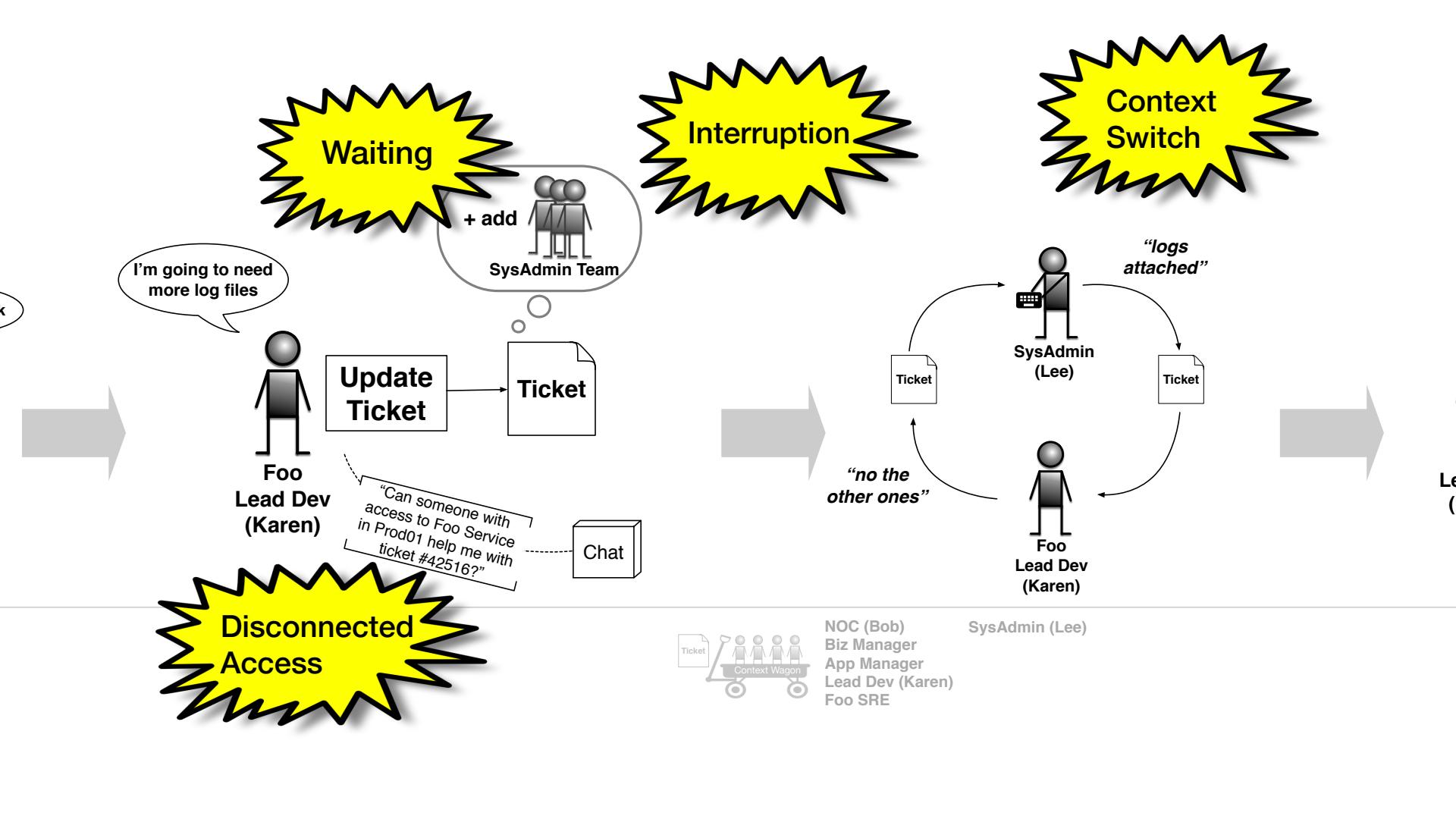
Foo
Lead Dev
(Karen)

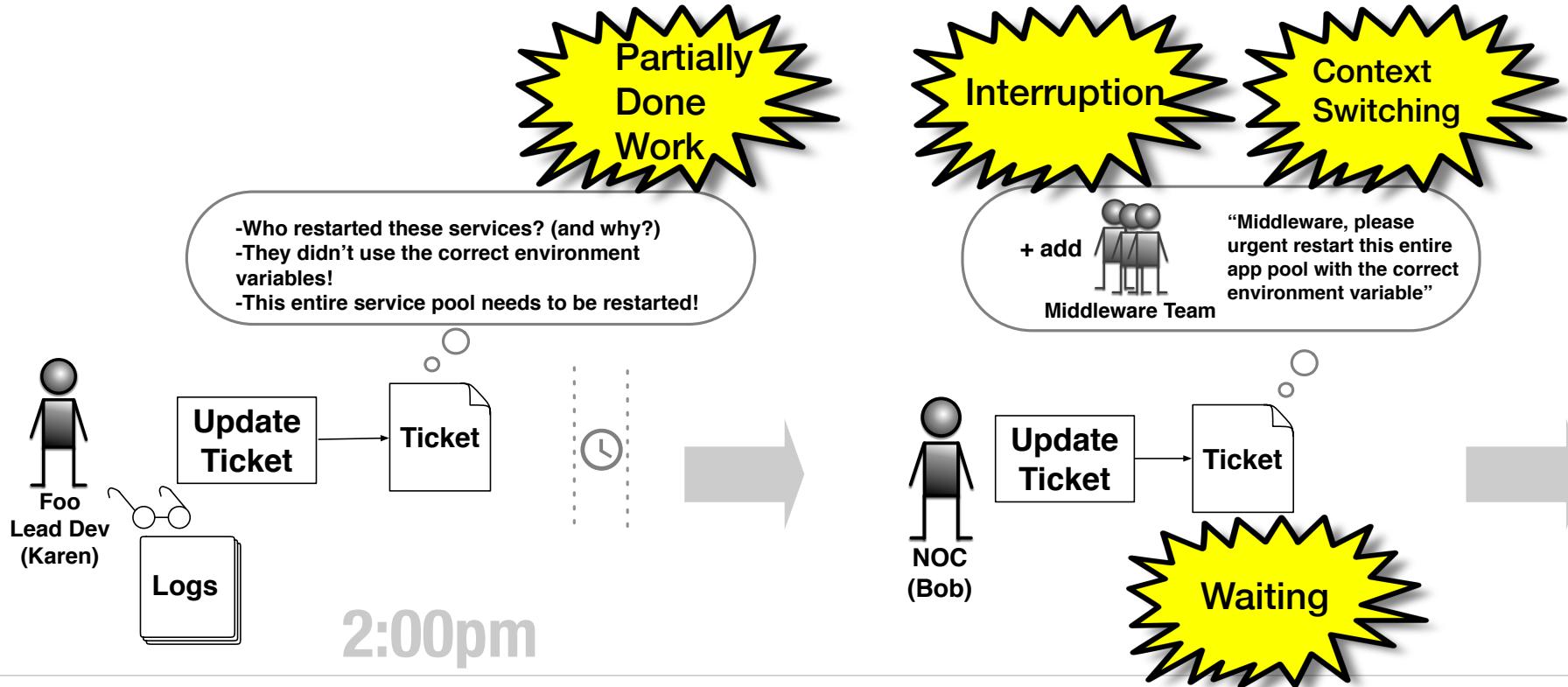


I'm go
mon

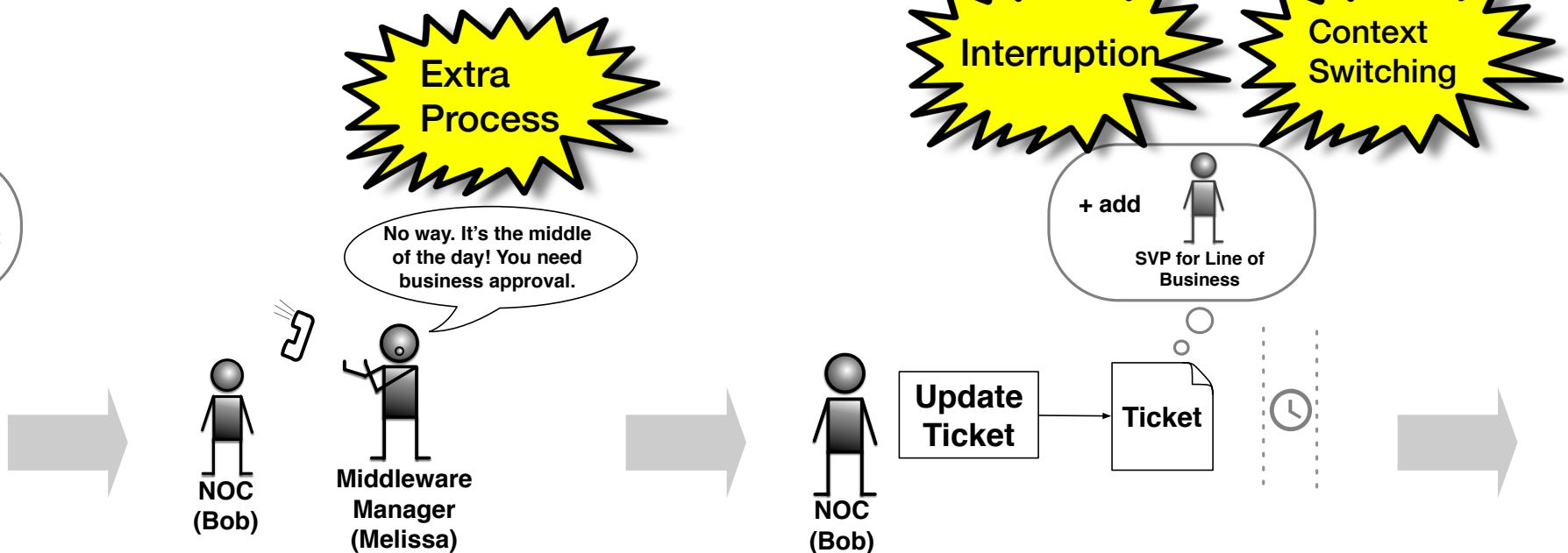


NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE





base
s entire
e correct
able"

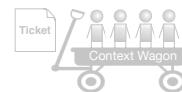


2:30pm

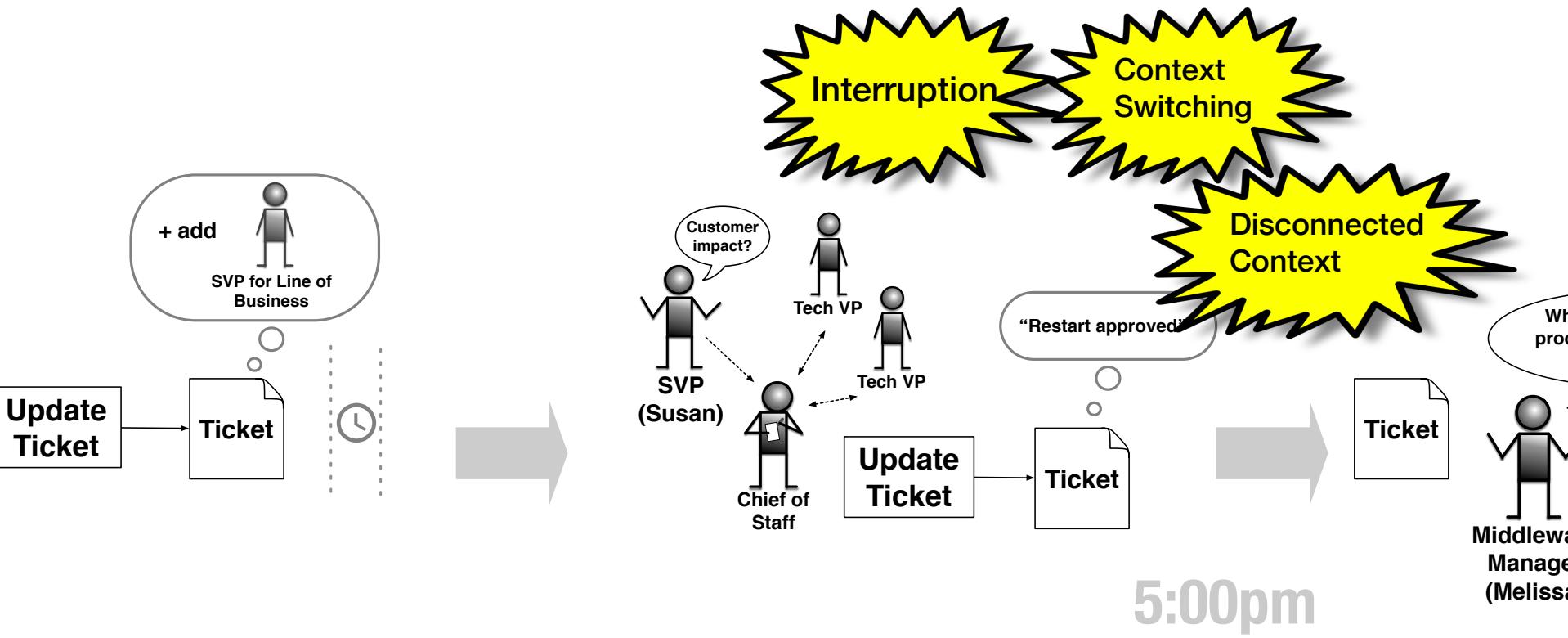


NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

SysAdmin (Le...
Middleware Ma...



NOC (B...
Biz Ma...
App M...
Lead D...
Foo SRE

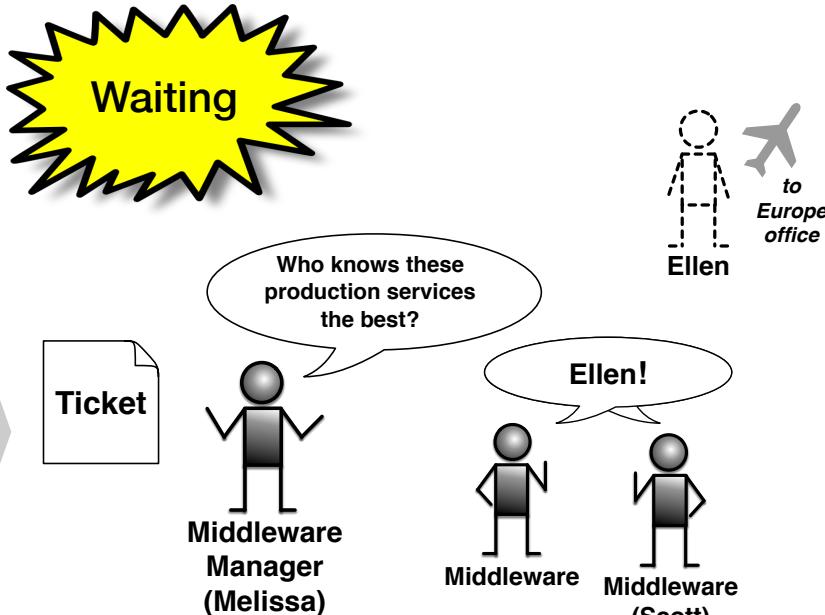


NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

SysAdmin (Lee)
Middleware Manager
SVP
Chief of Staff
2 x Tech VP

"approved"
Ticket

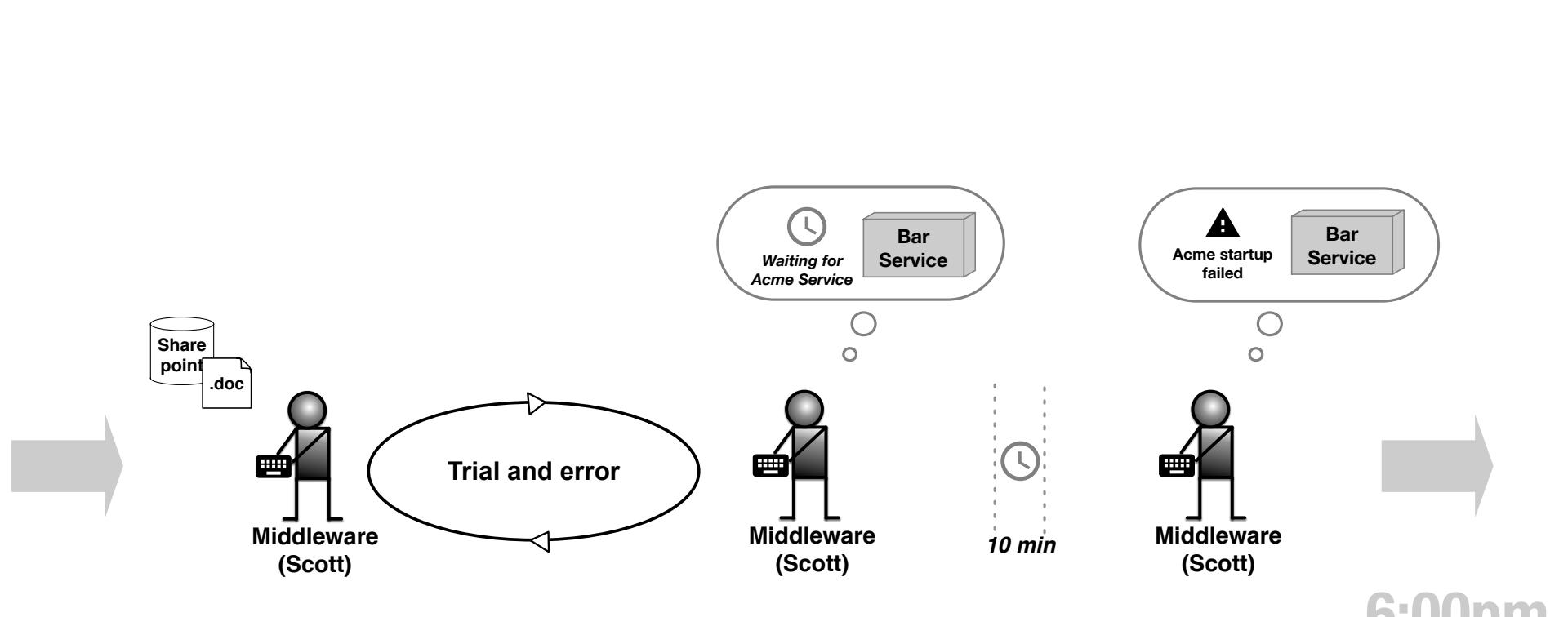
5:00pm



NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

SysAdmin (Lee)
Middleware Manager
SVP
Chief of Staff
2 x Tech VP

Middleware (Scott)



NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

SysAdmin (Lee)
Middleware Manager
SVP
Chief of Staff
2 x Tech VP

Middleware (Scott)



Come on.. no.no.no.
What? Why?

Middleware
(Scott)

6:45



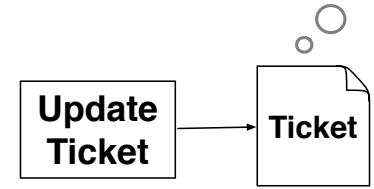
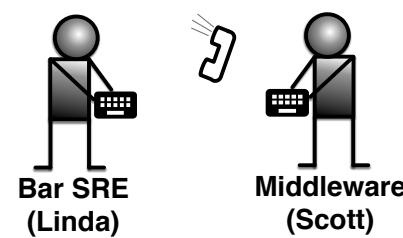
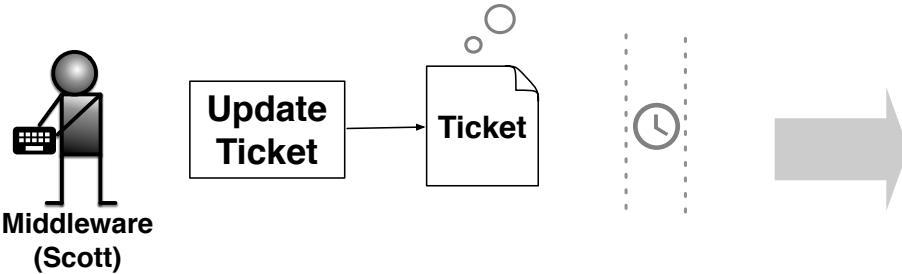
-Bar app startup timed out. Error says can't connect to Acme service.
- I looked at Acme but it seems to be running
-Is this error message correct? Why can't Bar connect?

+ add
Bar SRE



The new environment pre-flight check is preventing startup.
Looks like Bar's connection to Acme is being blocked.

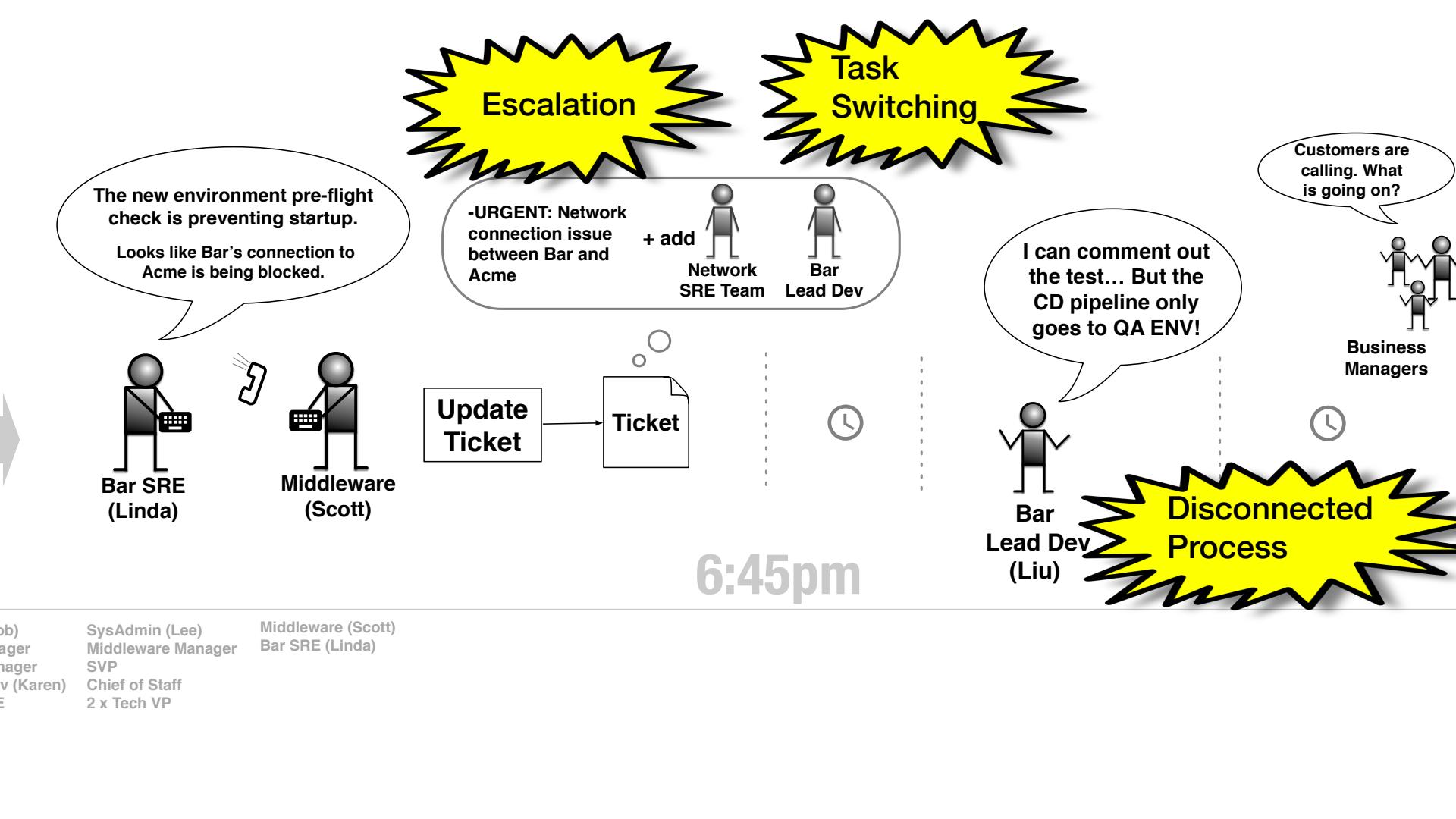
+ add
Network SRE Team

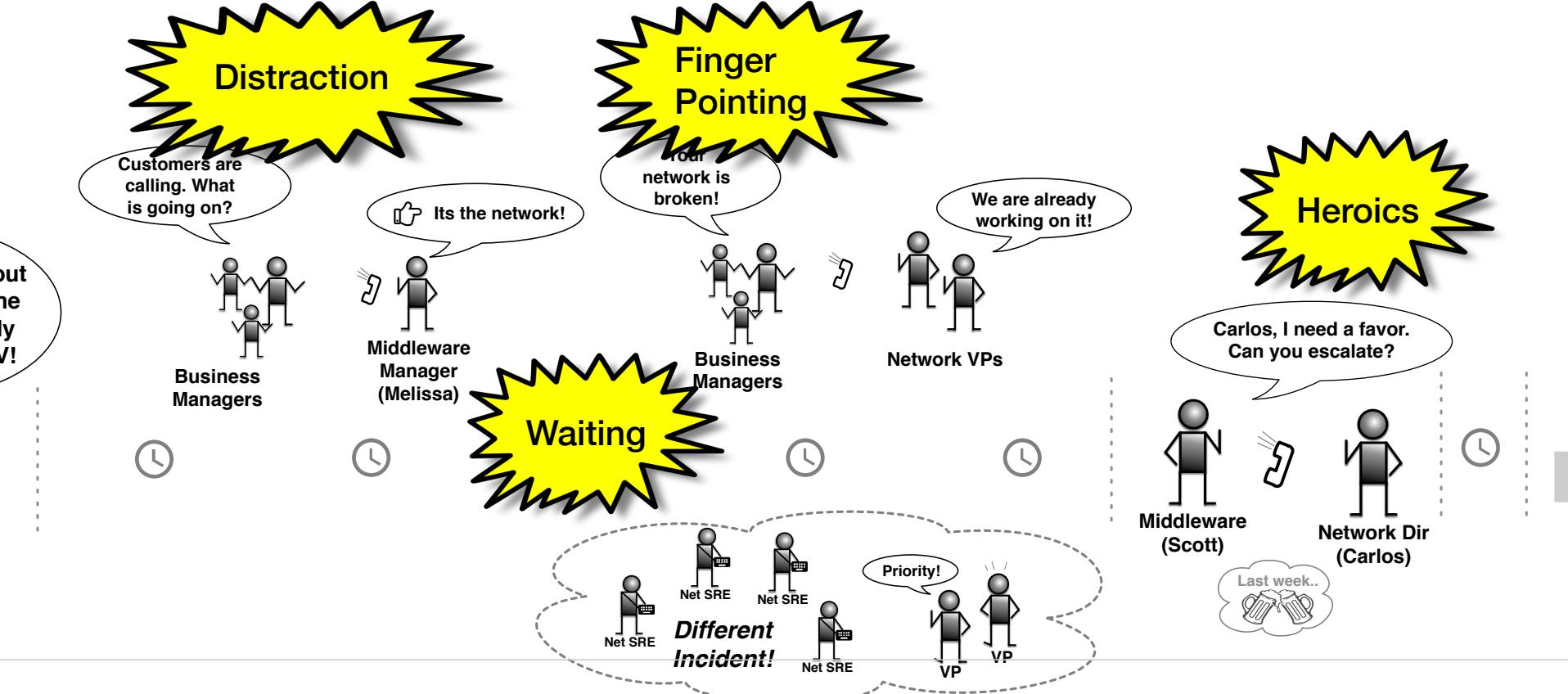


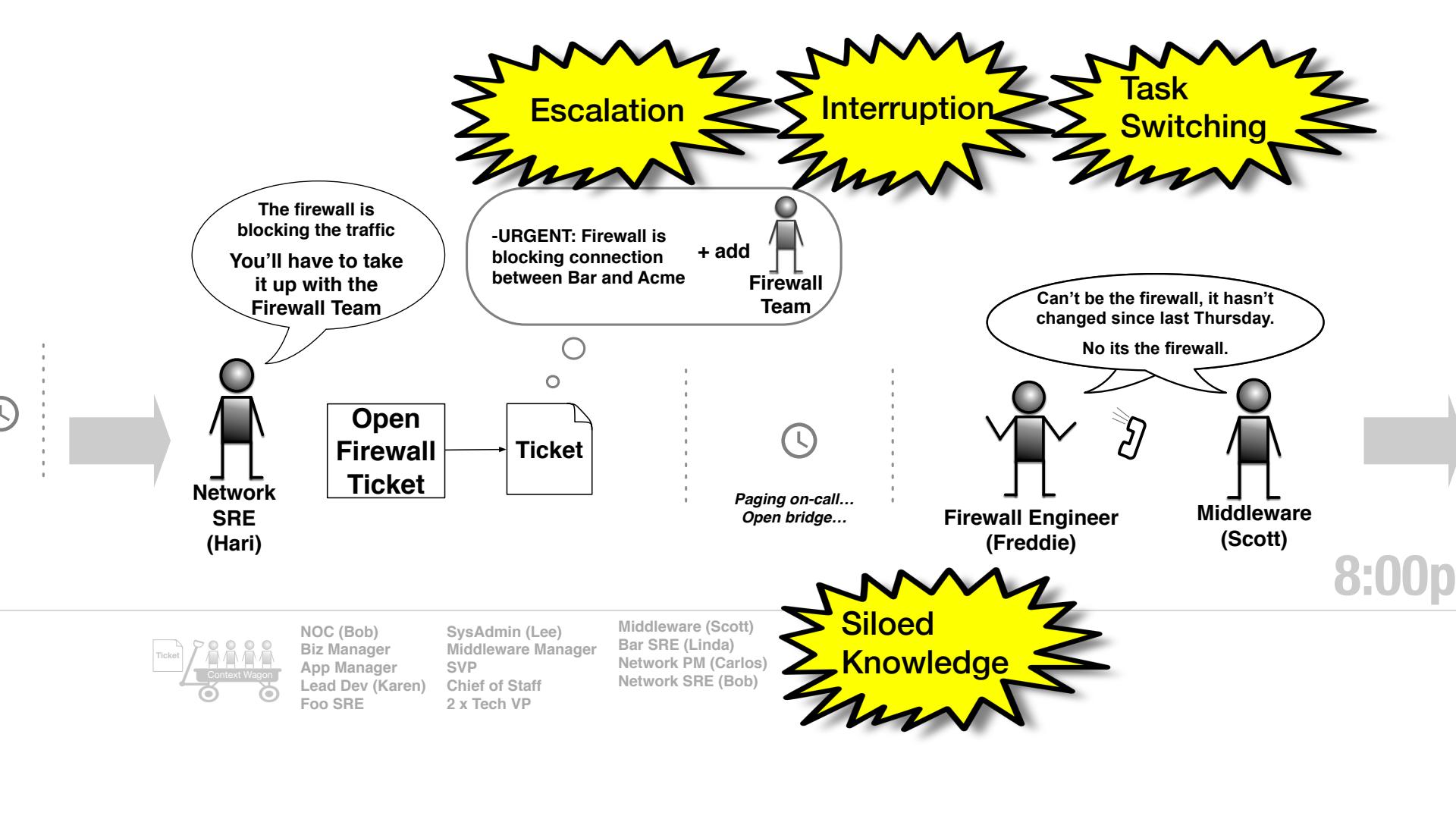
NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

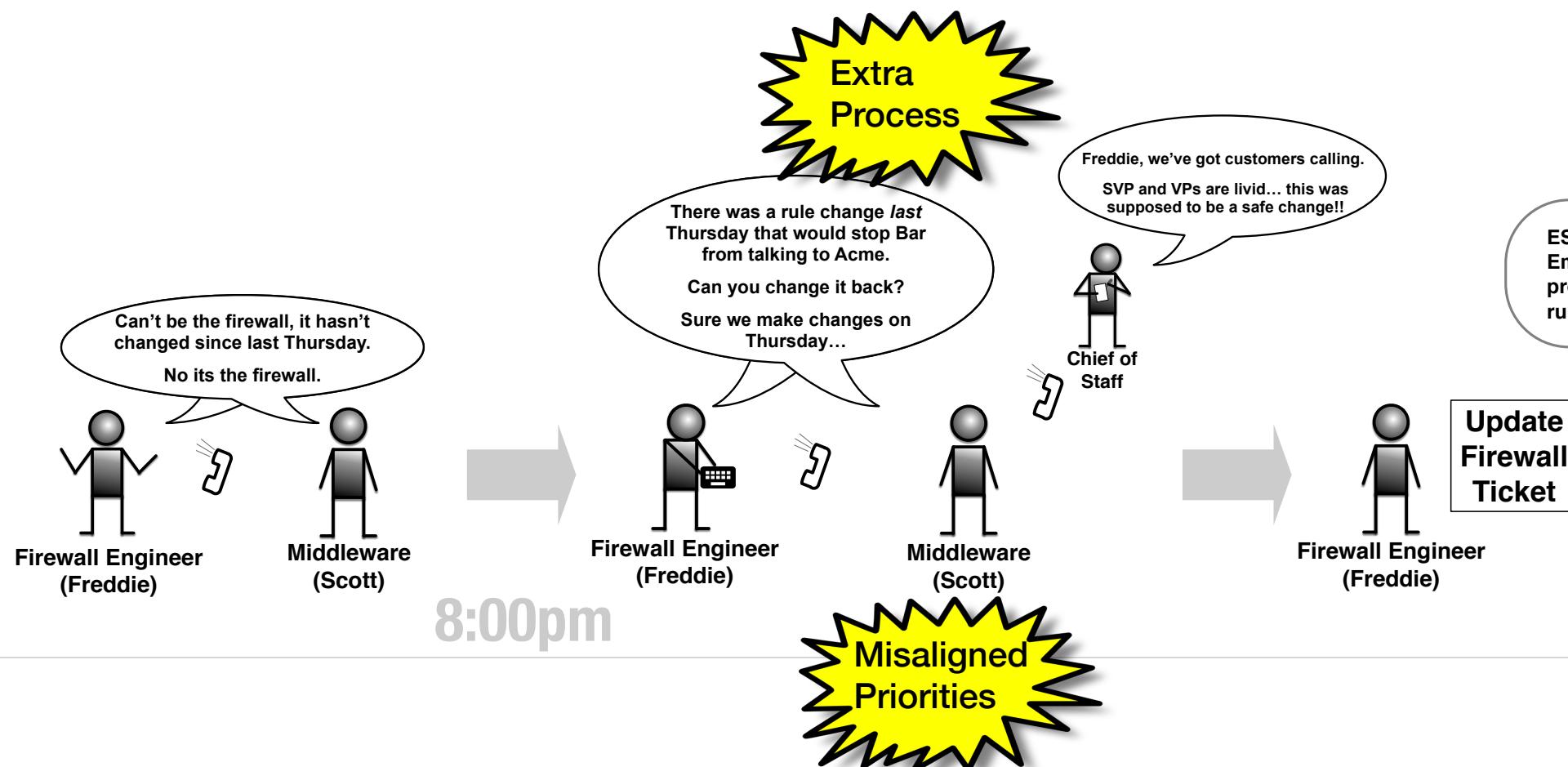
SysAdmin (Lee)
Middleware Manager
SVP
Chief of Staff
2 x Tech VP

Middleware (Scott)
Bar SRE (Linda)

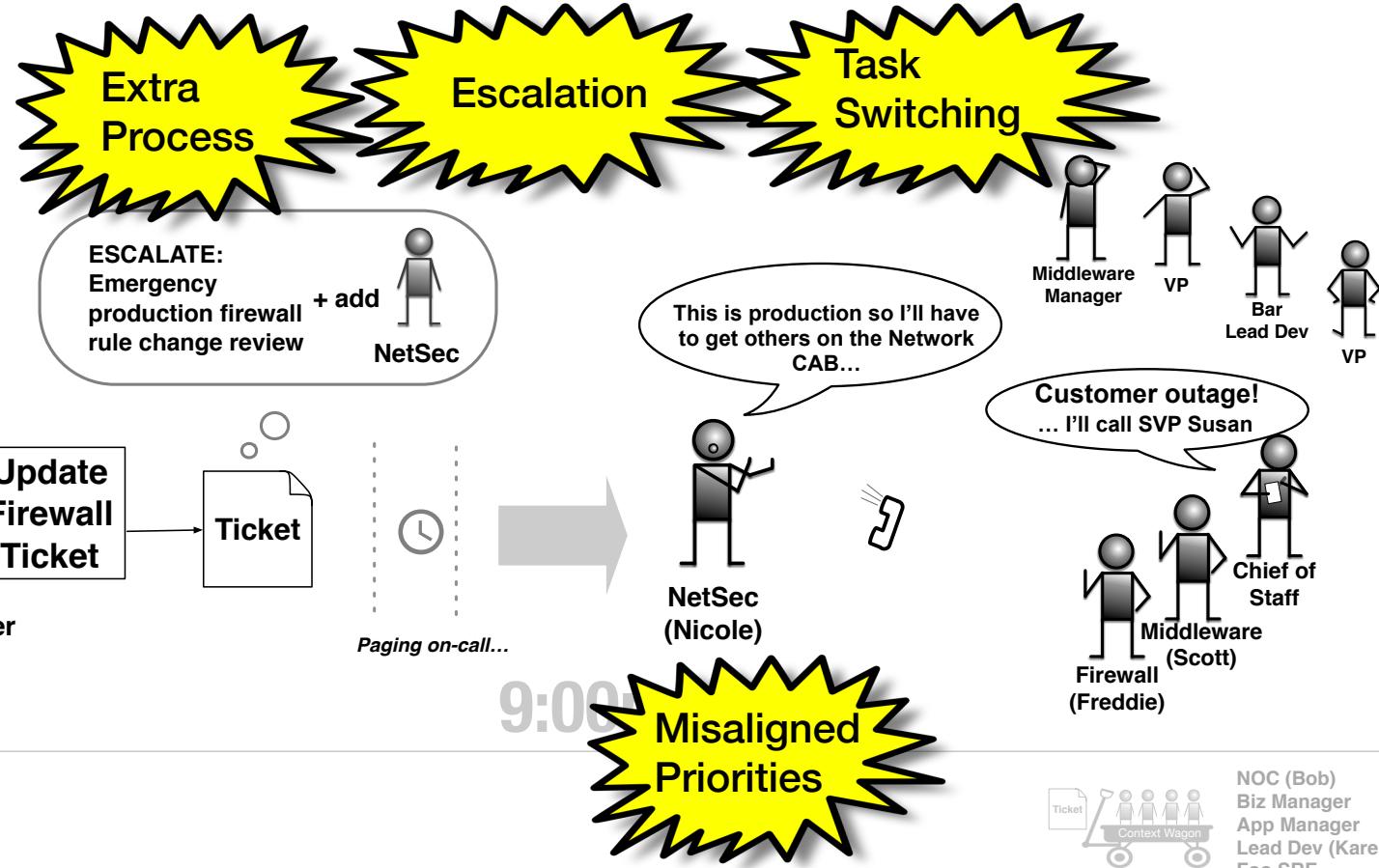






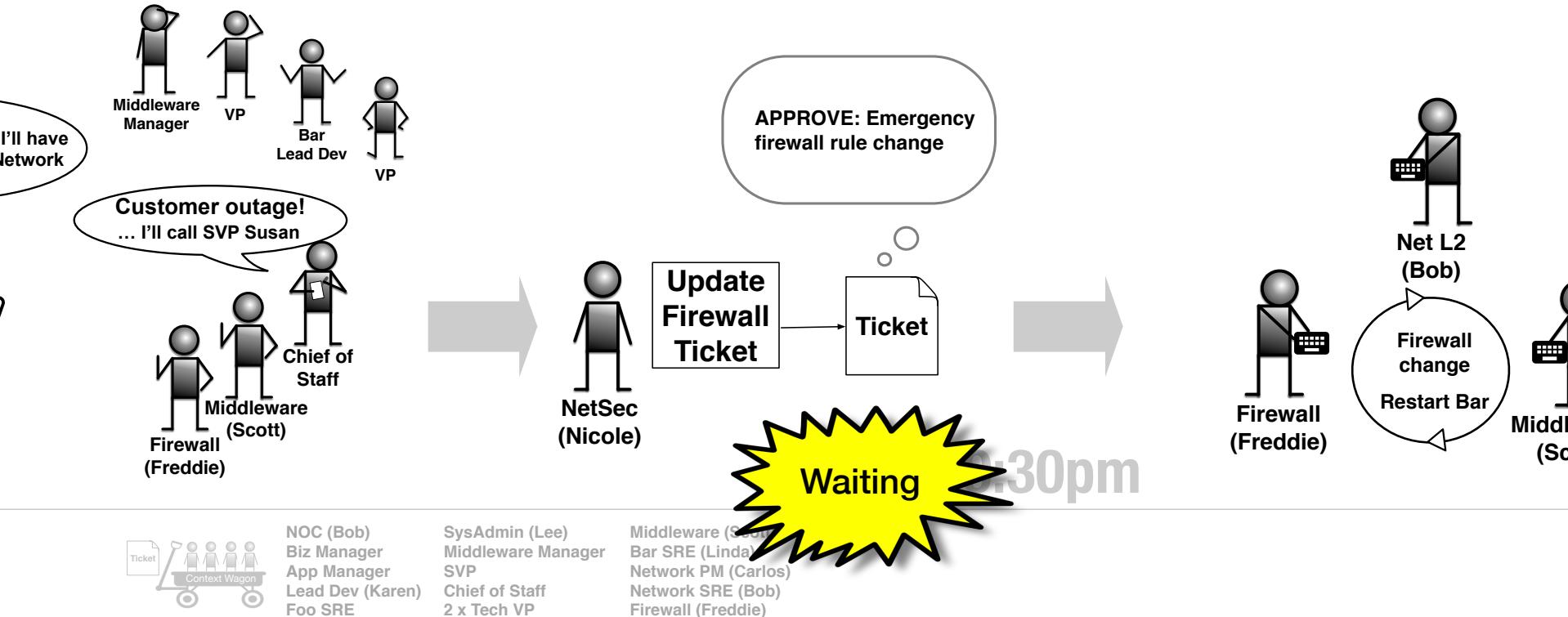


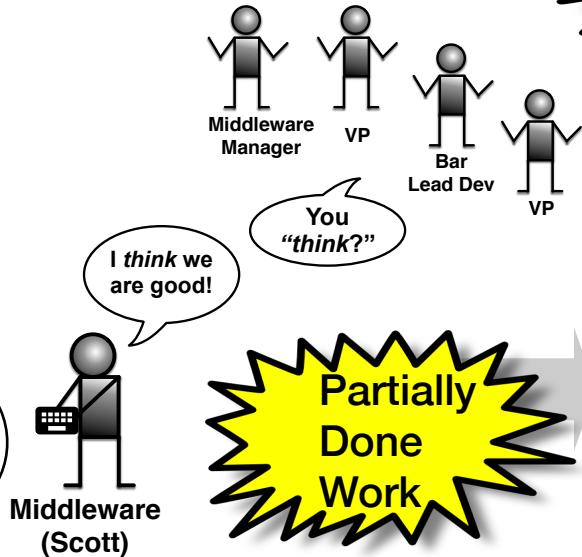
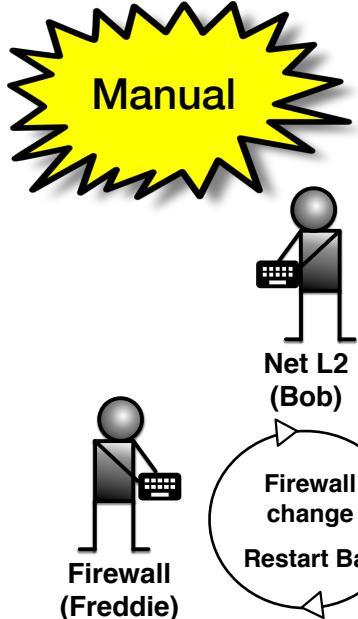
We've got customers calling.
and VPs are livid... this was
set to be a safe change!!



NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

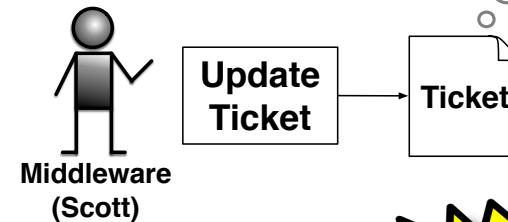
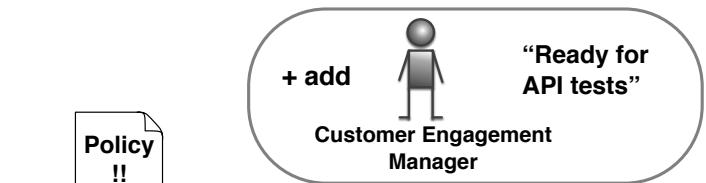
SysAd
Middle
SVP
Chief c
2 x Tec





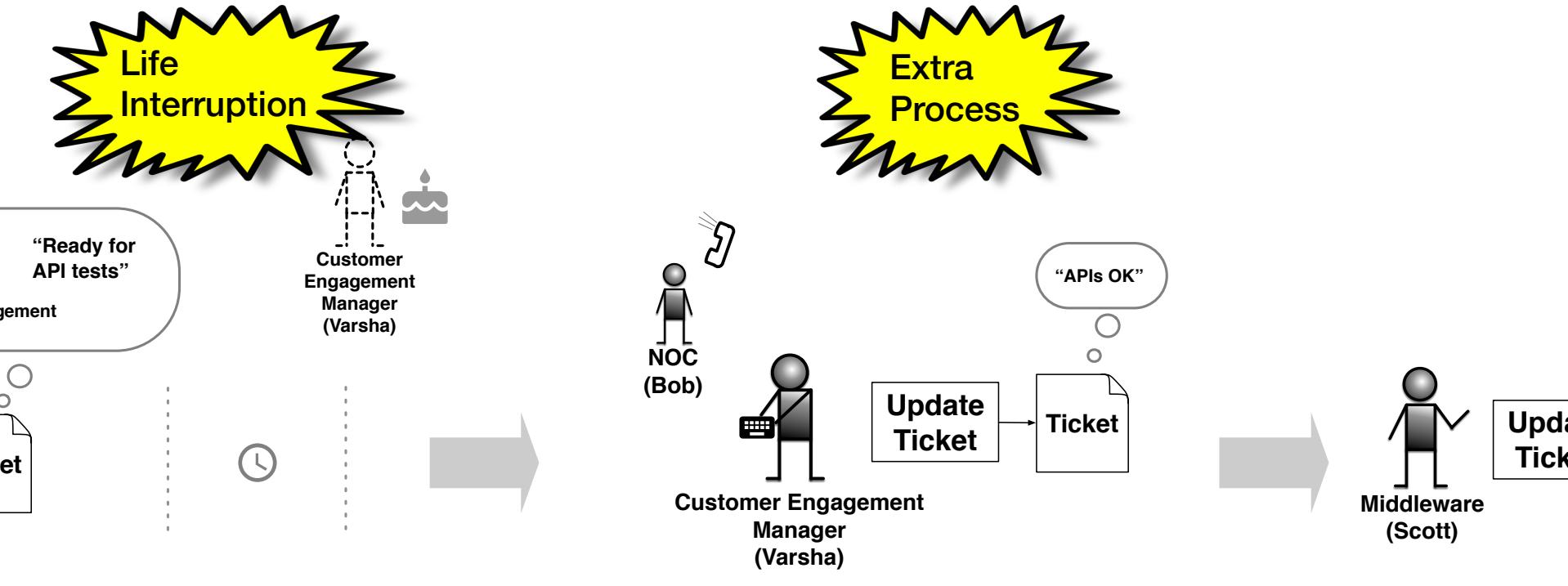
Partially Done Work

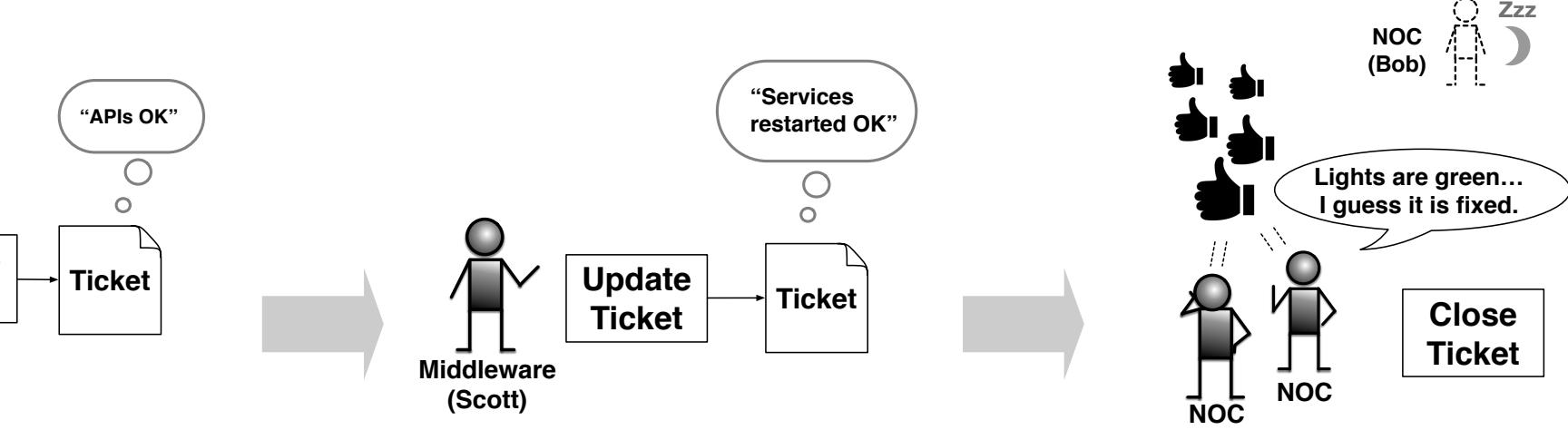
Escalation



9:45pm

Extra Process





11:30pm



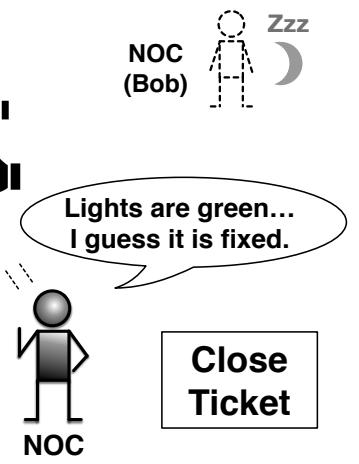
NOC (Bob)
Biz Manager
App Manager
Lead Dev (Karen)
Foo SRE

SysAdmin (Lee)
Middleware Manager
SVP
Chief of Staff
2 x Tech VP

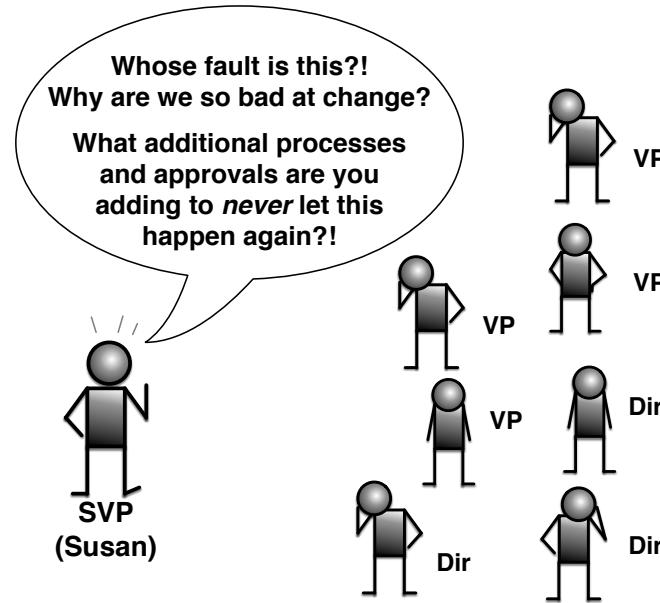
Middleware (Scott)
Bar SRE (Linda)
Network PM (Carlos)
Network SRE (Bob)
Firewall (Freddie)

NetSec (Nicole)
Cust. Engmt. (Varsha)

N



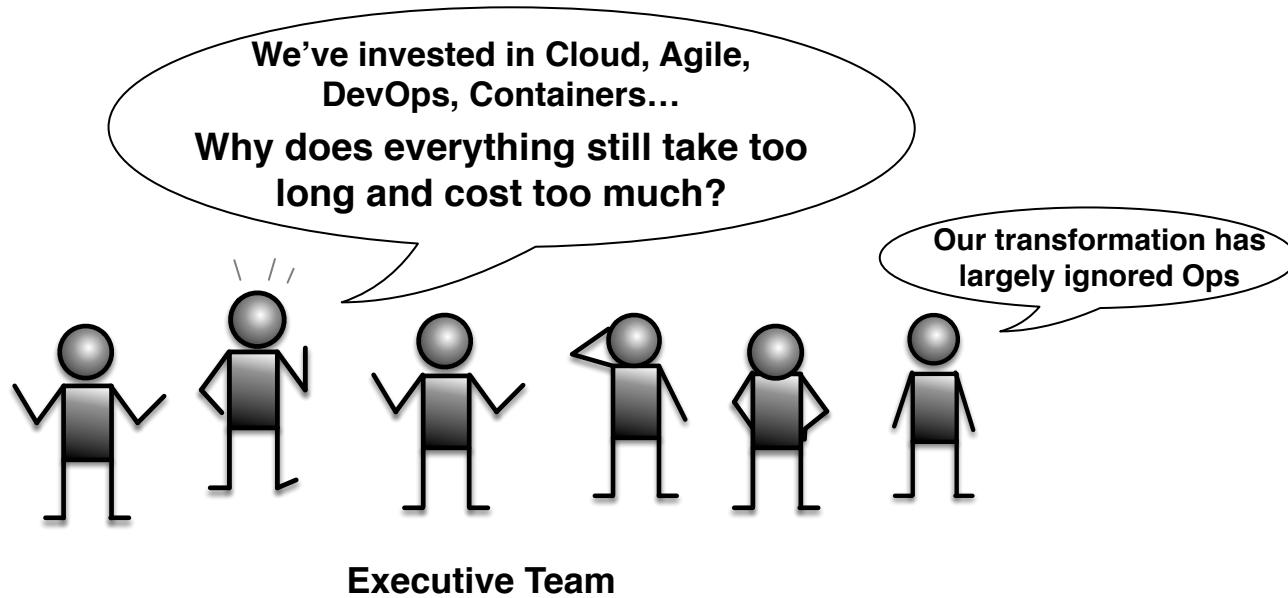
Next Day



cott)
a)
Carlos)
(Bob)
(die)

NetSec (Nicole)
Cust. Engmt. (Varsha)

Later...



Most companies chase the symptoms...

(Unfortunately) Typical Enterprise Incident

Start

...by following the conventional wisdom:

"We need better tools"

"We need more people"

"We need more discipline and attention to detail"

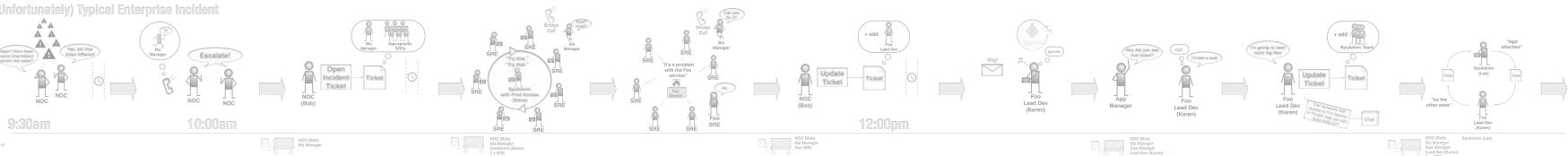
"We need more change reviews/approvals"

"We'll wait and see what ITIL v4 says"

End

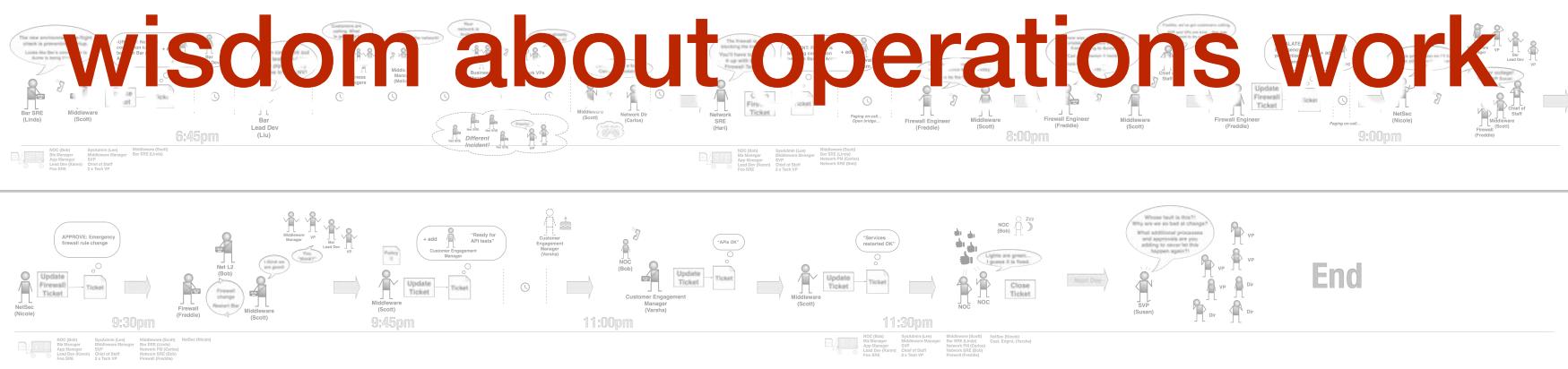
(Unfortunately) Typical Enterprise Incident

Start

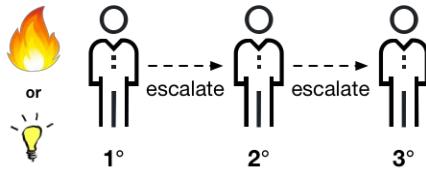


Challenge the conventional wisdom about operations work

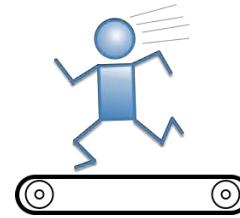
End



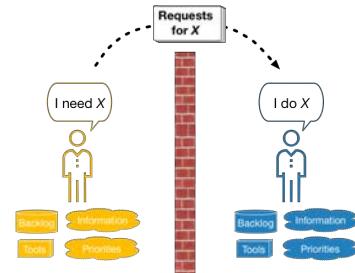
Forces That Undermine Operations



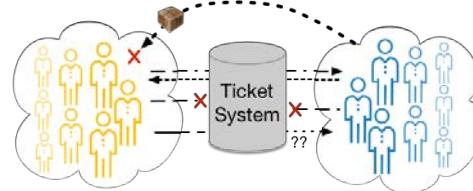
Low Trust



Excessive Toil

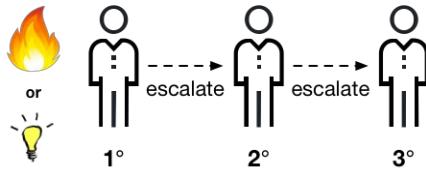


Silos



Queues

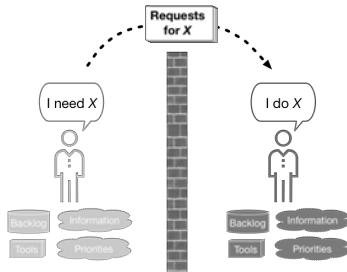
Forces That Undermine Operations



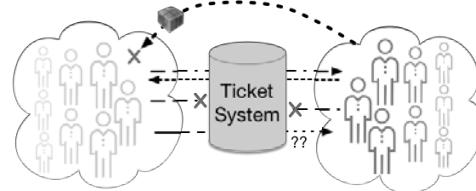
Low Trust



Excessive Toil

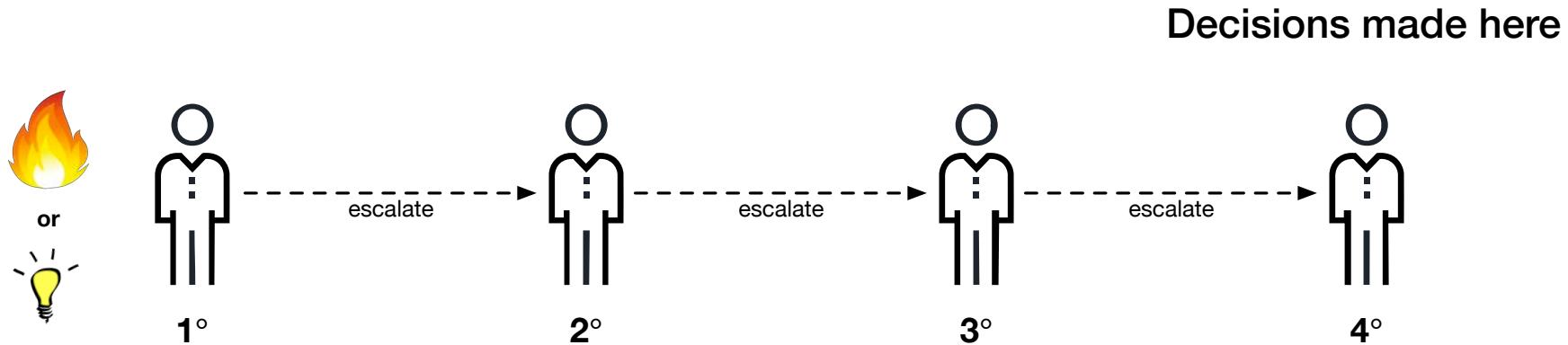


Silos



Queues

Where are decisions made? Who can take action?



All work is contextual

```
rm -rf $PATHNAME
```

```
@@ -1,2 +1,2 @@
--<!-- Status: 0k --> +<!-- Status: OK -->
```

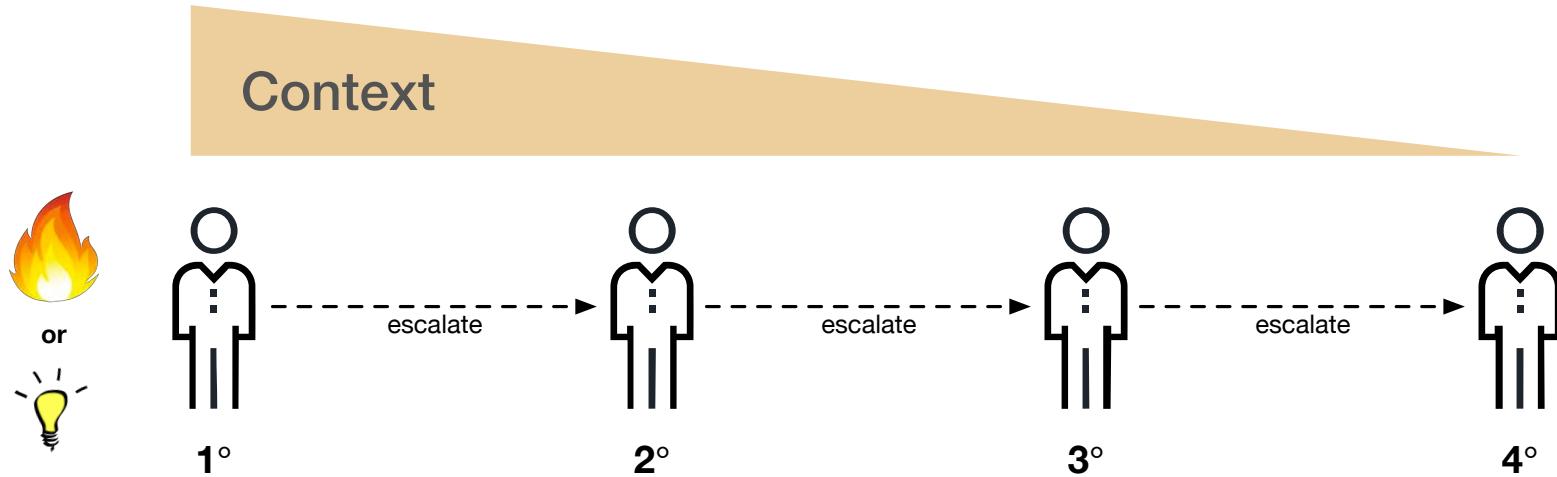
Answer is always
“it depends”

IS IT
dangerous?

John
Allspaw



Where are decisions made? Who can take action?



Psychological safety

Psychological safety is a shared belief that the team is safe for interpersonal risk taking. It can be defined as "being able to show and employ one's self without fear of negative consequences of self-image, status or career.

- William Kahn
Boston University
1990



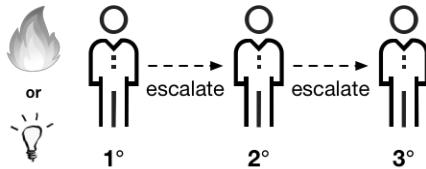
A screenshot of a magazine article from The New York Times Magazine. The title is "What Google Learned From Its Quest to Build the Perfect Team". Below the title, it says "New research reveals surprising truths about why some work groups thrive and others falter." There are also other article titles like "How to Build a Perfect Team", "The War on Meetings", and "The Case for Blind Hiring".

2016

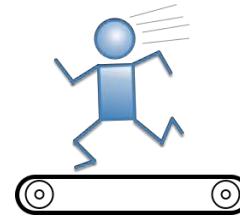
Google: most important characteristic to predict team effectiveness?

Psychological safety!

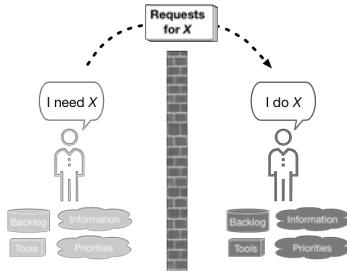
Forces That Undermine Operations



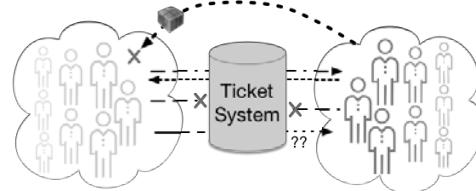
Low Trust



Excessive Toil

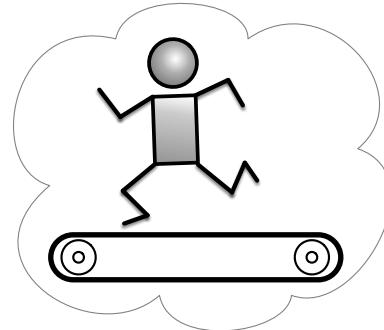


Silos



Queues

Toil: Name For a Problem We've All Felt



“Toil is the kind of work tied to running a production service that tends to be **manual, repetitive, automatable, tactical, devoid of enduring value, and that scales linearly as a service grows.**”



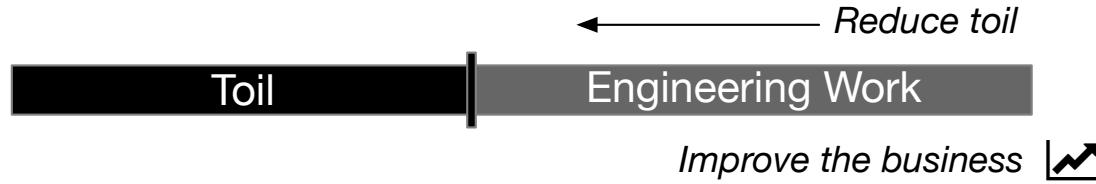
-Vivek Rau
Google

Toil vs. Engineering Work

| Toil | Engineering Work |
|----------------------|---------------------------|
| Lacks Enduring Value | Builds Enduring Value |
| Rote, Repetitive | Creative, Iterative |
| Tactical | Strategic |
| Increases With Scale | Enables Scaling |
| Can Be Automated | Requires Human Creativity |

Excessive Toil Prevents Fixing the System

Toil at manageable percentage of capacity

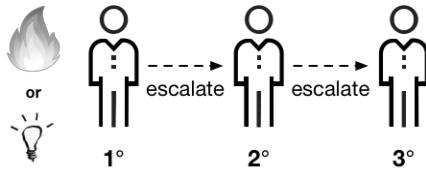


Downward spiral is inevitable!



RUNDECK

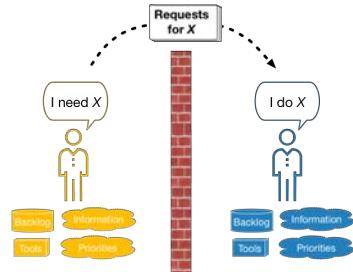
Forces That Undermine Operations



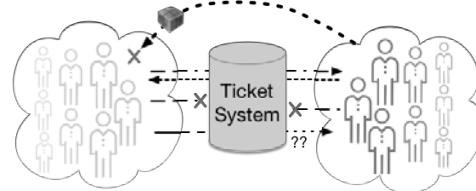
Low Trust



Excessive Toil

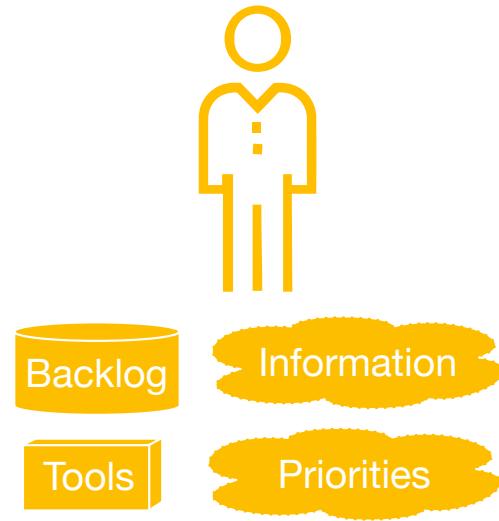


Silos



Queues

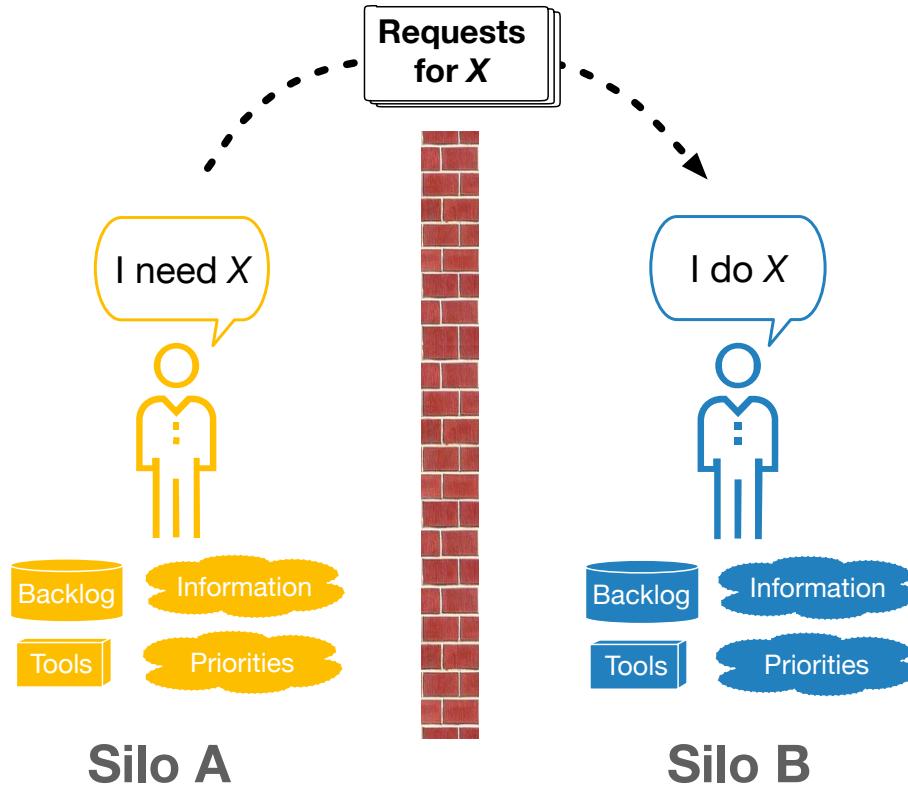
Silos



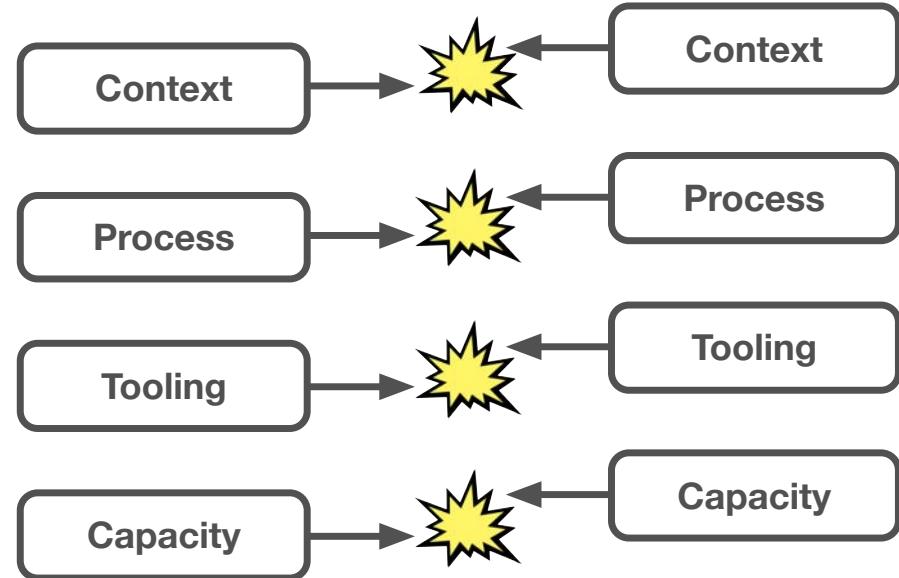
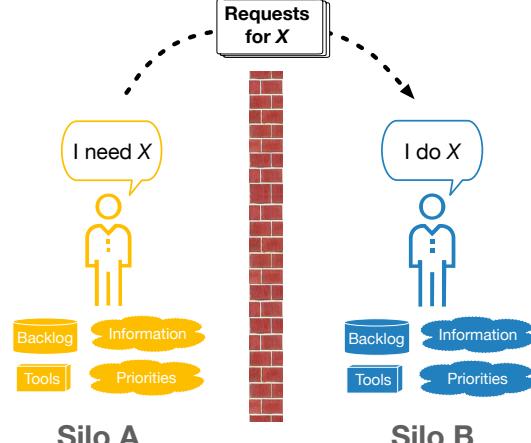
Silos



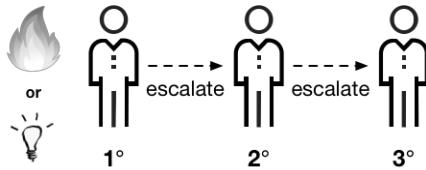
Silos



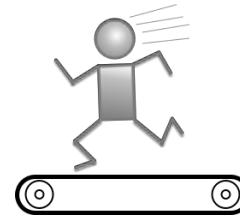
Silos cause disconnects and mismatches



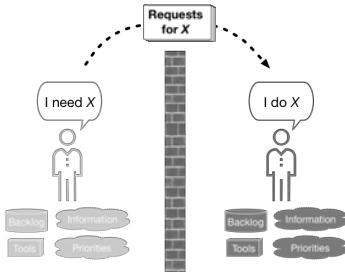
Forces That Undermine Operations



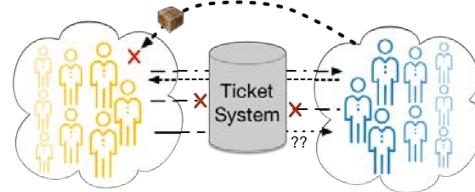
Low Trust



Excessive Toil



Silos

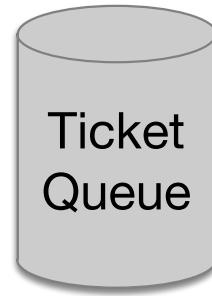


Queues

How do we cover for our silos' disconnects and mismatches?

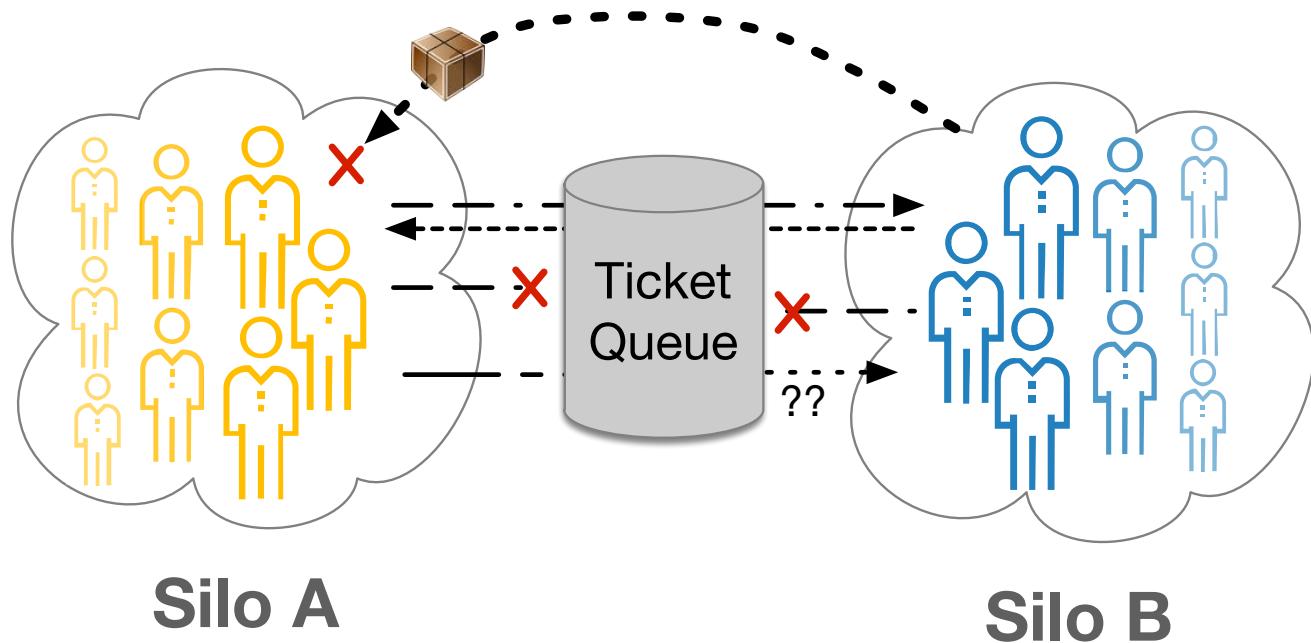


Silo A

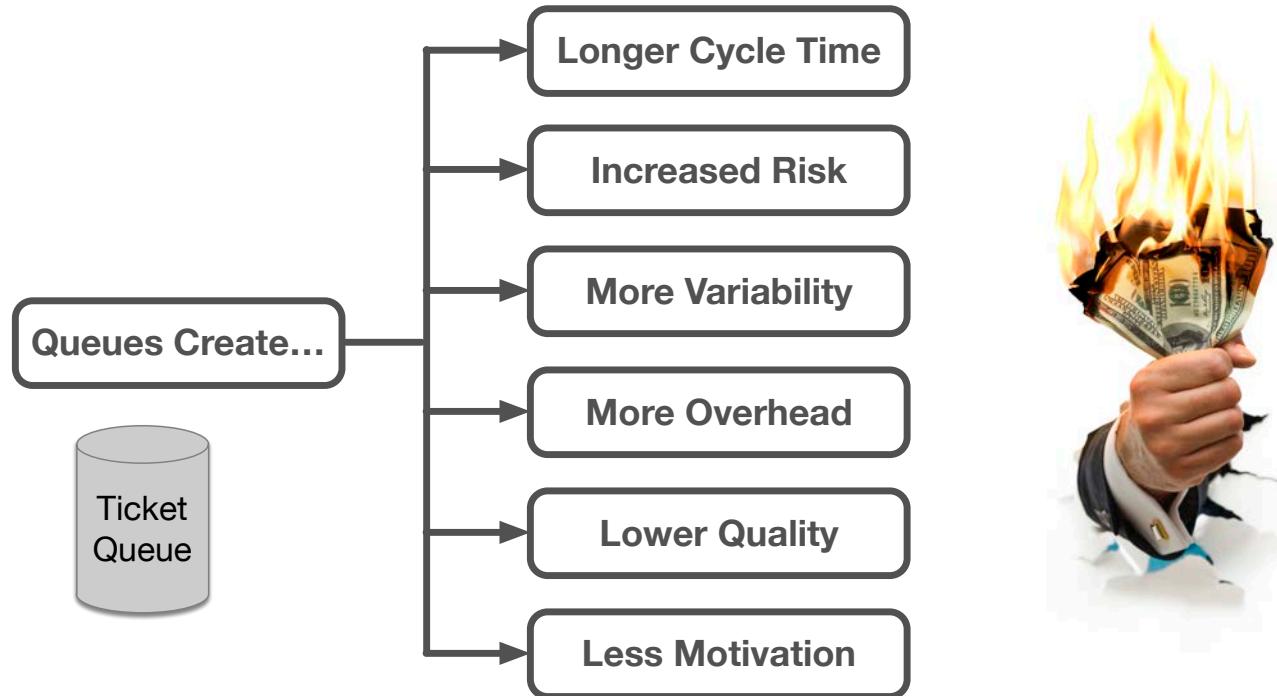


Silo B

We all know how well that works



Ticket queues are an expensive way to manage work

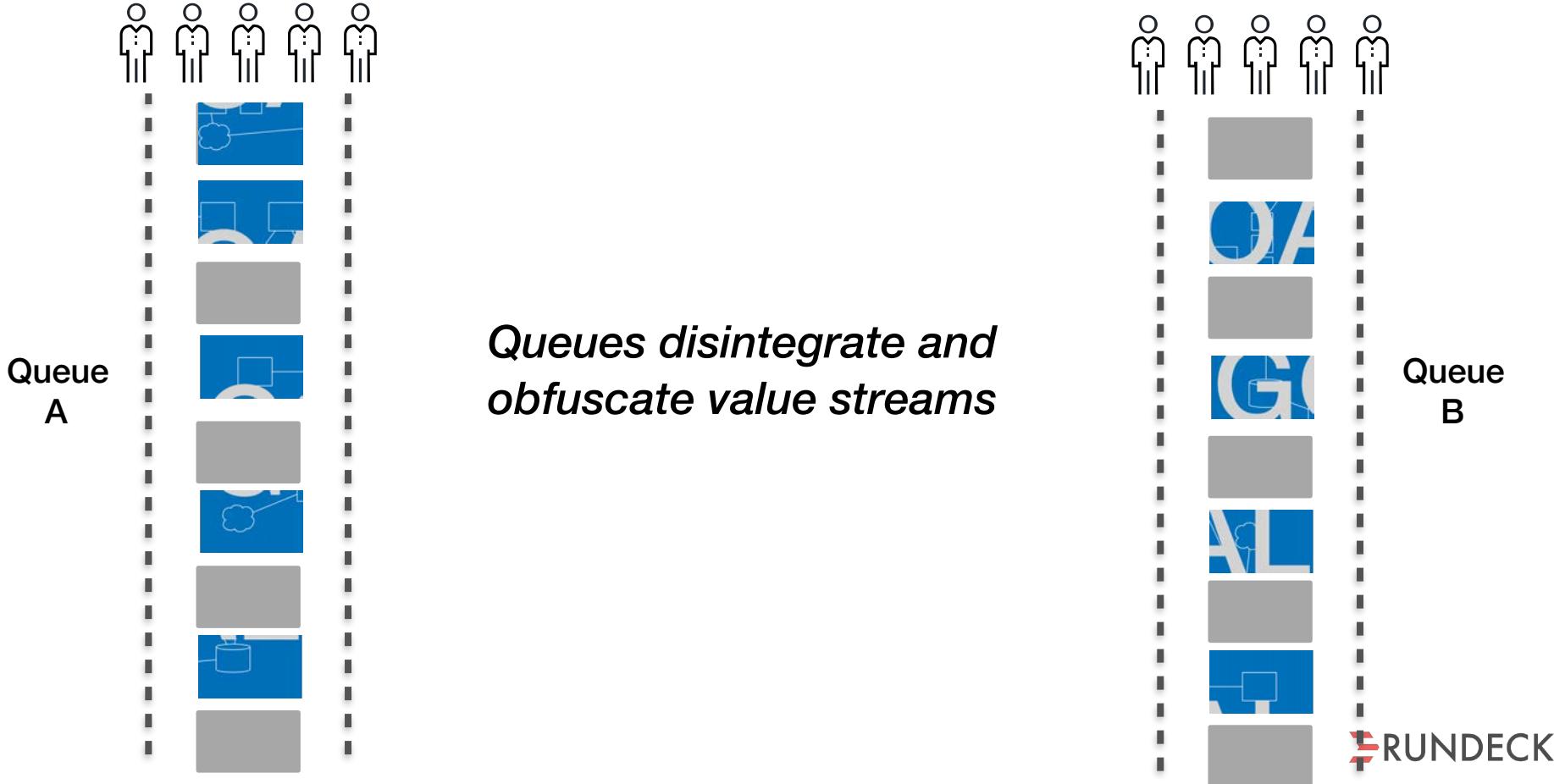


Adapted from Donald G. Reinertsen, The Principles of Product Development Flow: Second Generation Lean Product Development

What do queues do to value streams?



What do queues do to value streams?



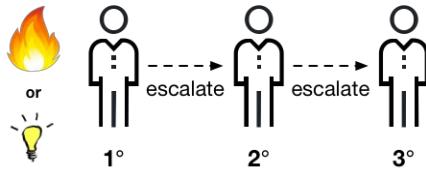
Ticket queues are “snowflake makers”



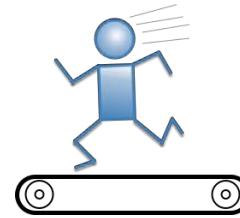
Snowflakes

Technically acceptable, but brittle and unreproducible

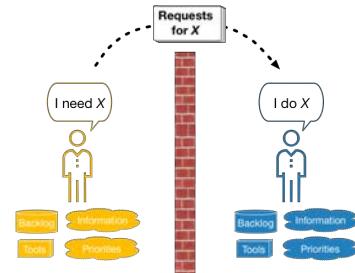
Forces That Undermine Operations



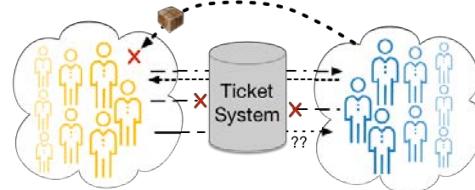
Low Trust



Excessive Toil



Silos



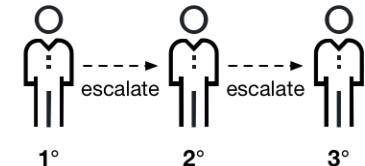
Queues

So what can we do differently?

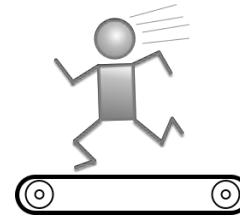
Forces That Undermine Operations



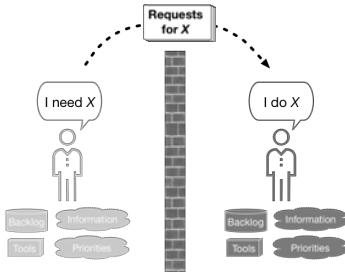
or



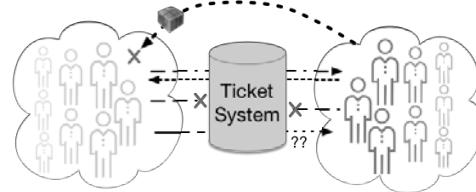
Low Trust



Excessive Toil

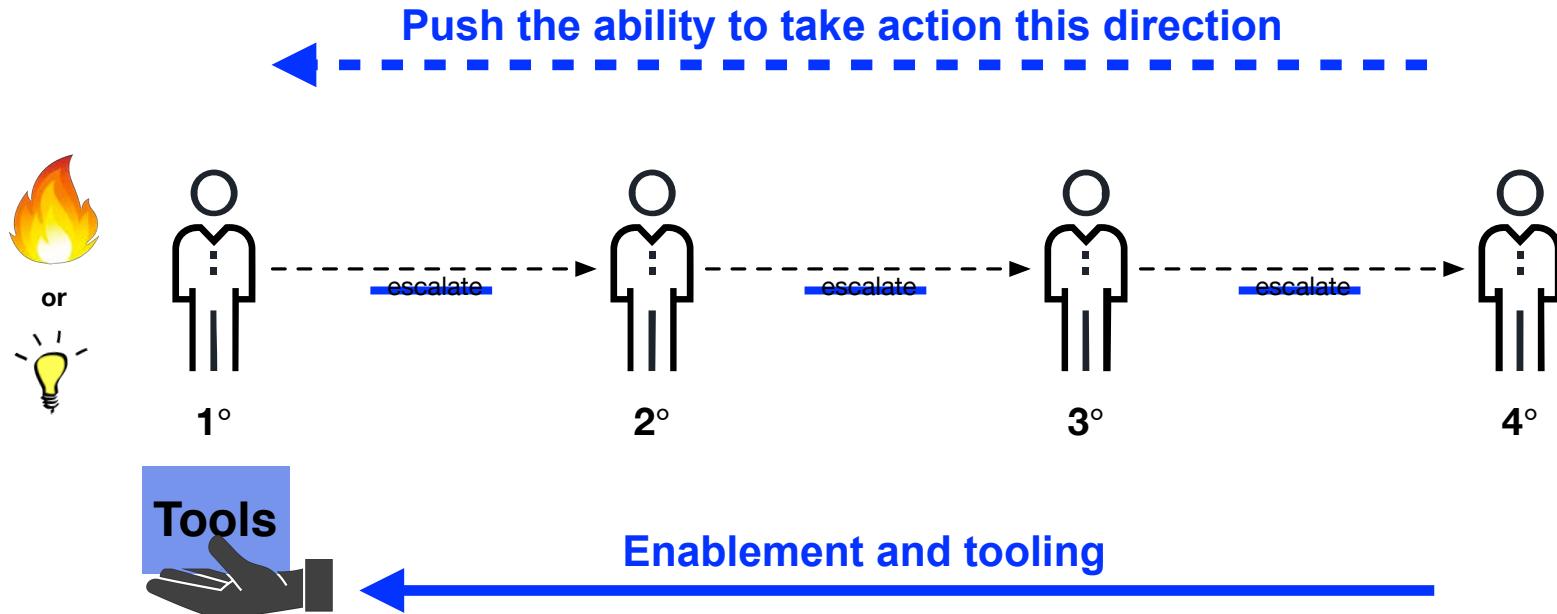


Silos

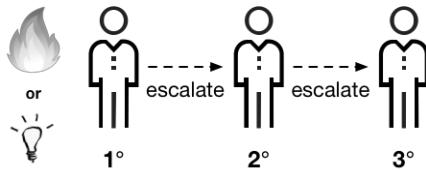


Queues

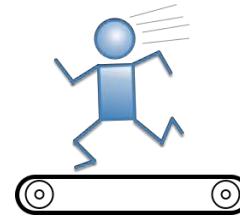
“Shift Left” the ability to take action



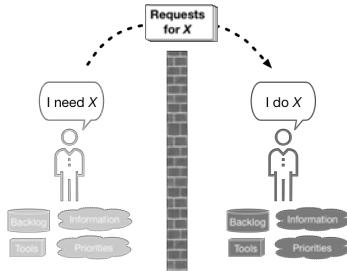
Forces That Undermine Operations



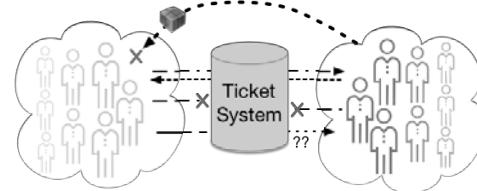
Low Trust



Excessive Toil



Silos

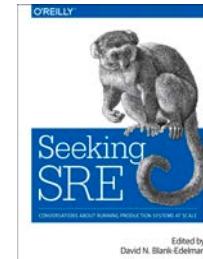
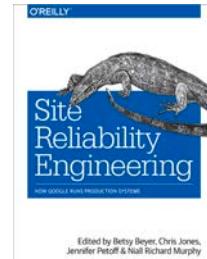


Queues

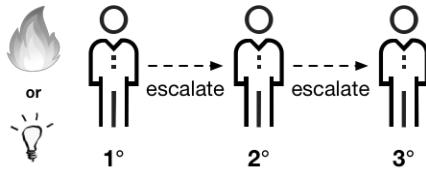
Reduce Toil

1. Track toil levels for each team
2. Set toil limits for each team
3. Fund efforts to reduce toil (with emphasis on teams over toil limits)

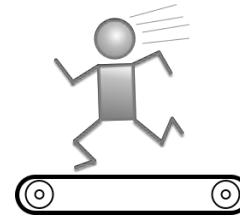
Bonus: Use Service Level Objectives, Error Budgets, and other lessons from SRE



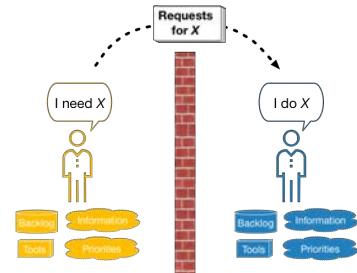
Forces That Undermine Operations



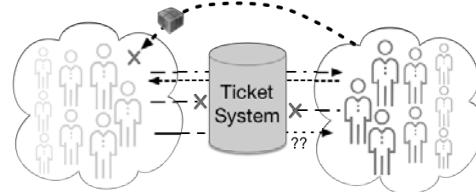
Low Trust



Excessive Toil

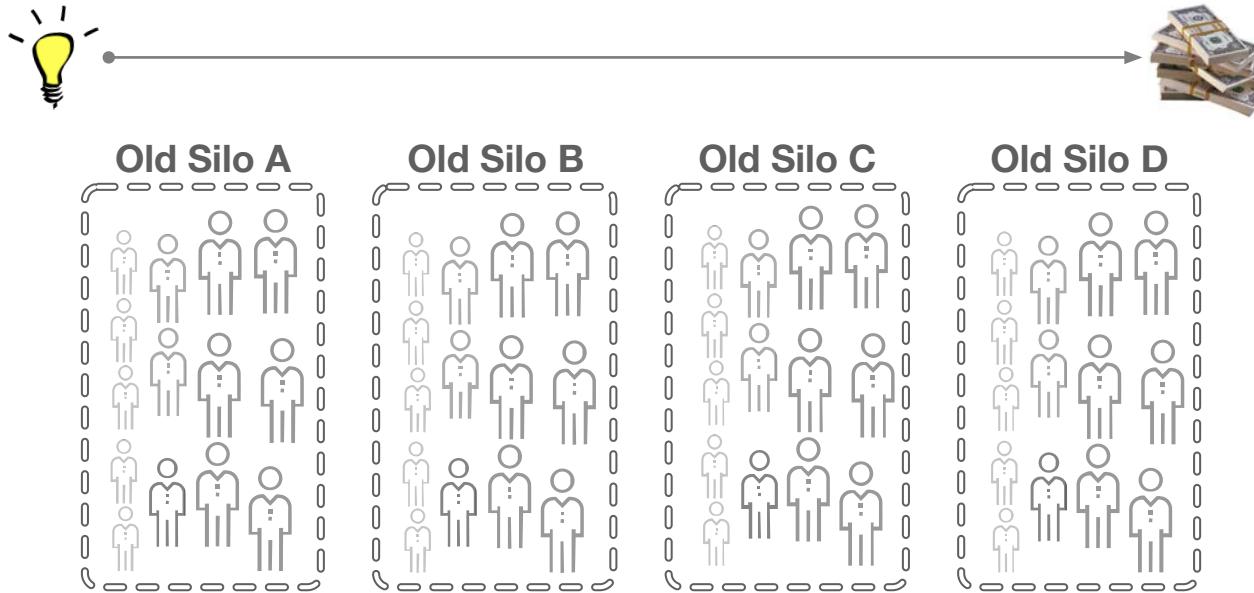


Silos

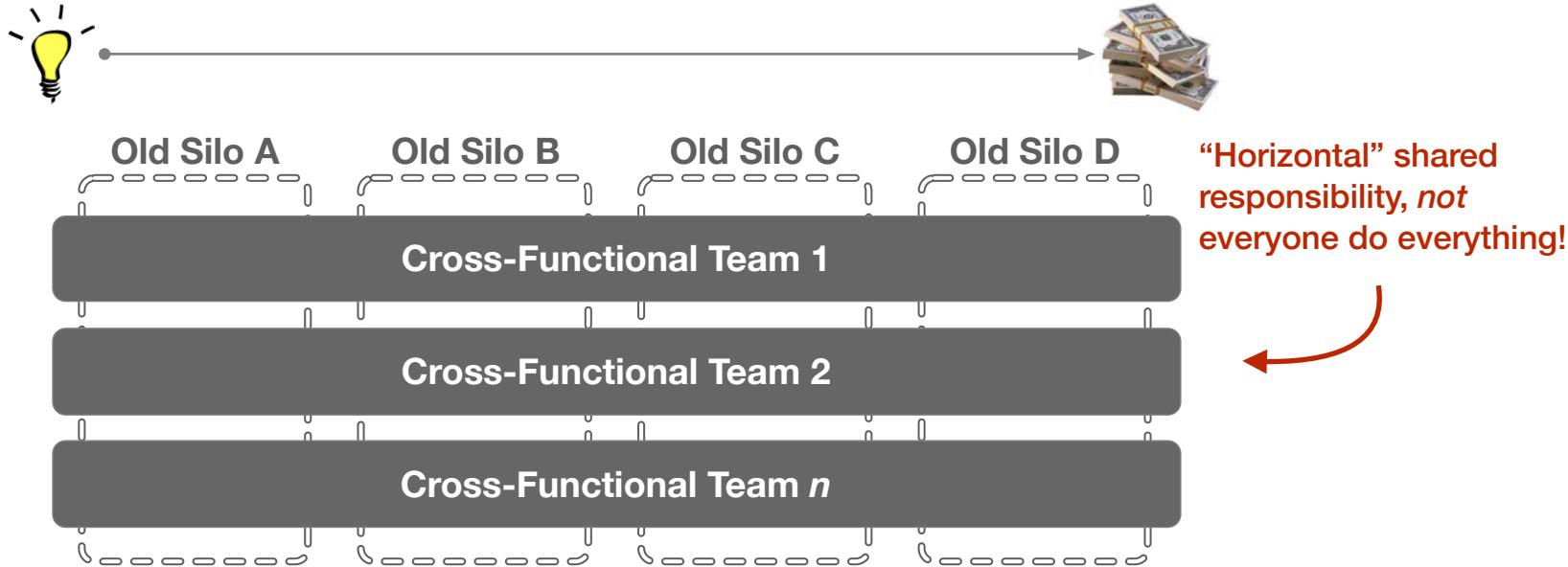


Queues

Obvious: Get rid of as many silos as possible

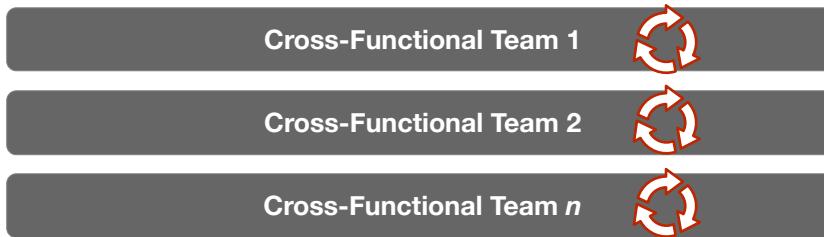


Obvious: Get rid of as many silos as possible



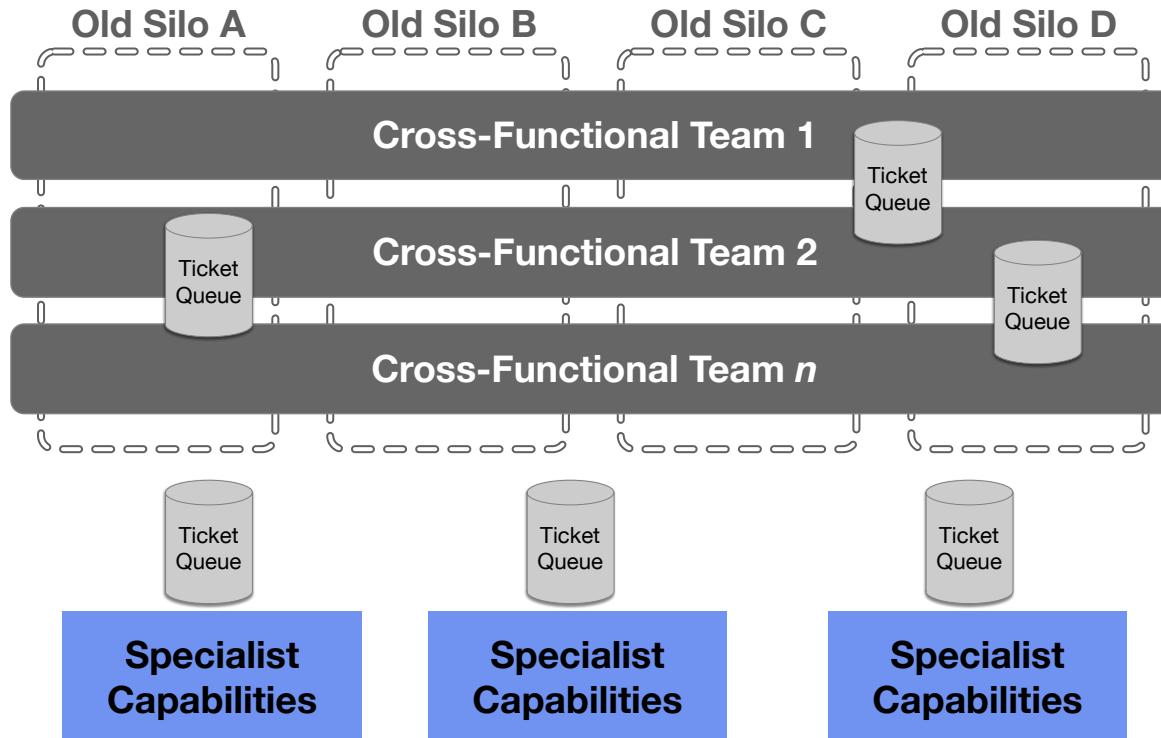
Shared and dedicated responsibility is key

*“Netflix”
Model*

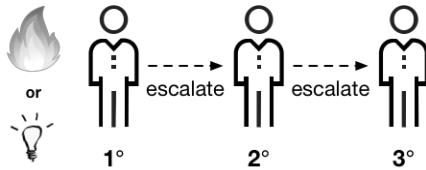


*Same
high-quality,
high-velocity
results!*

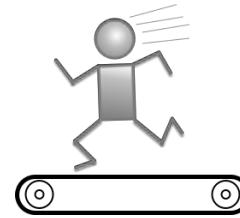
But what about the cross-cutting concerns?



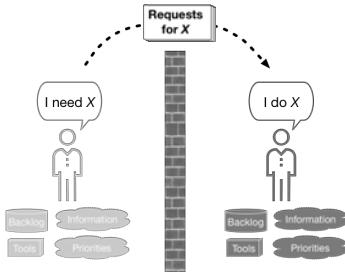
Forces That Undermine Operations



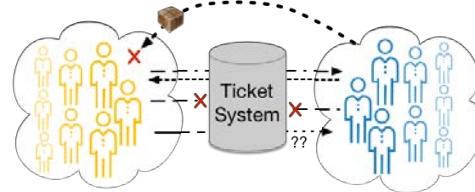
Low Trust



Excessive Toil

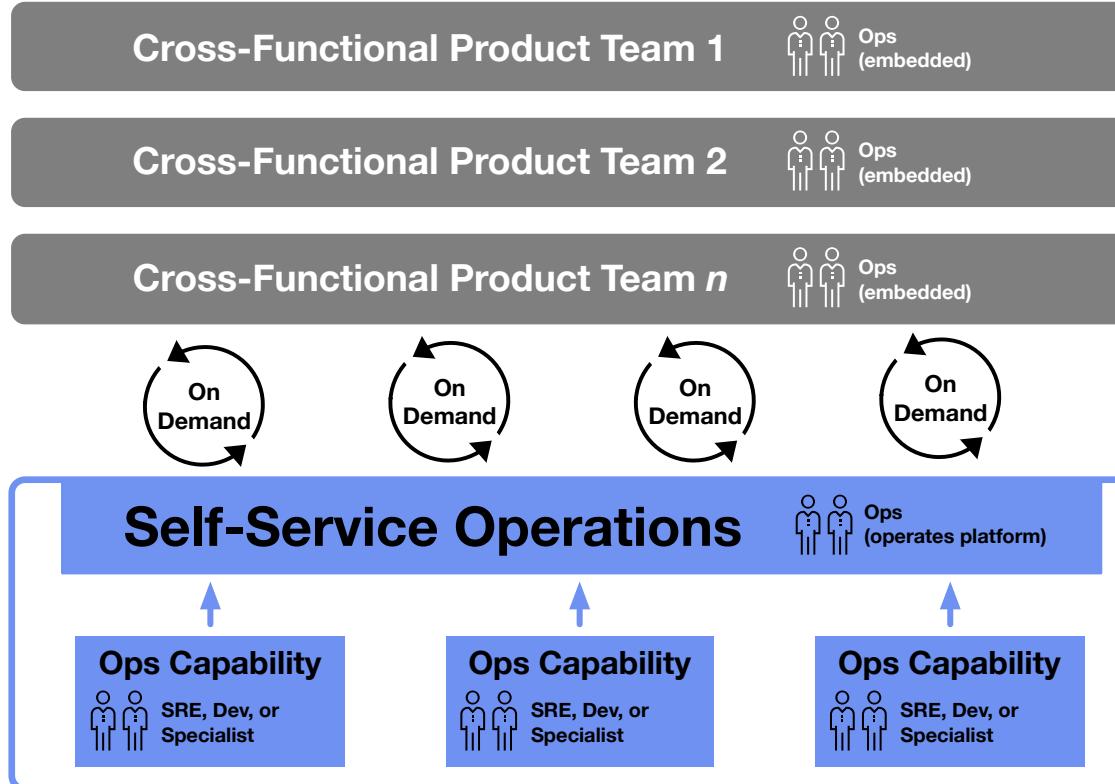


Silos

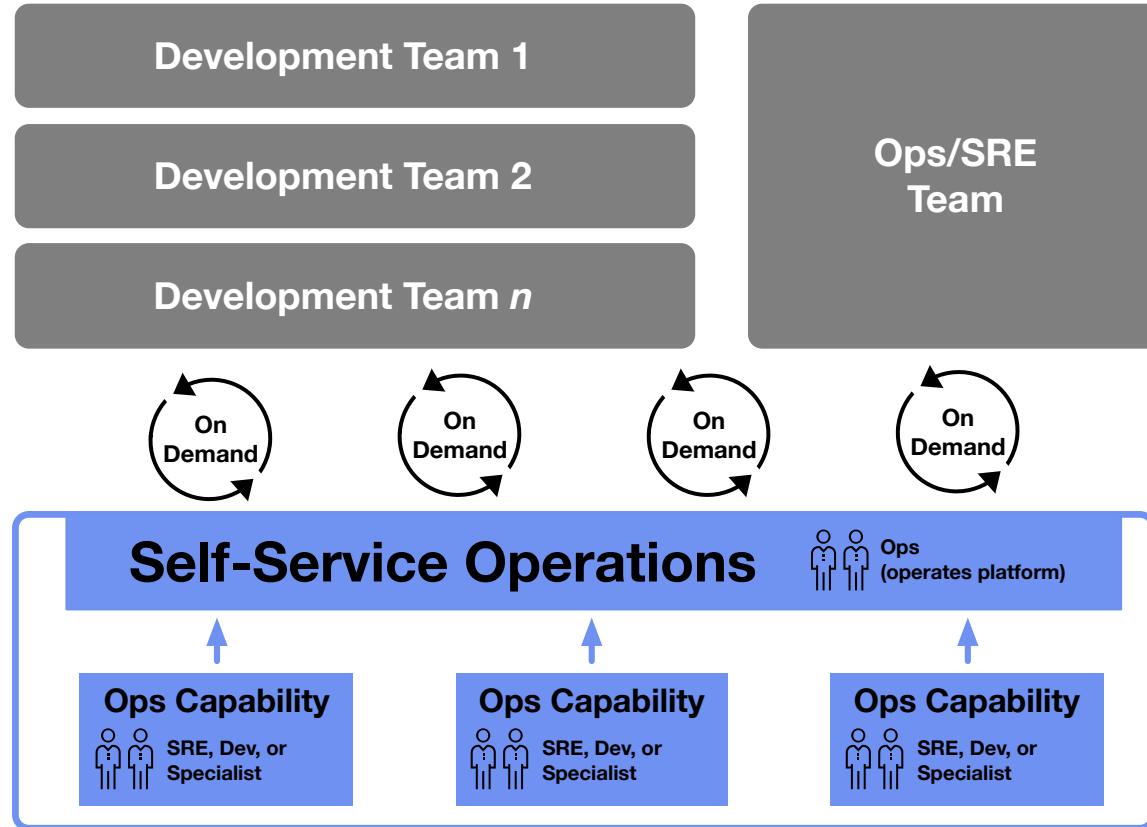


Queues

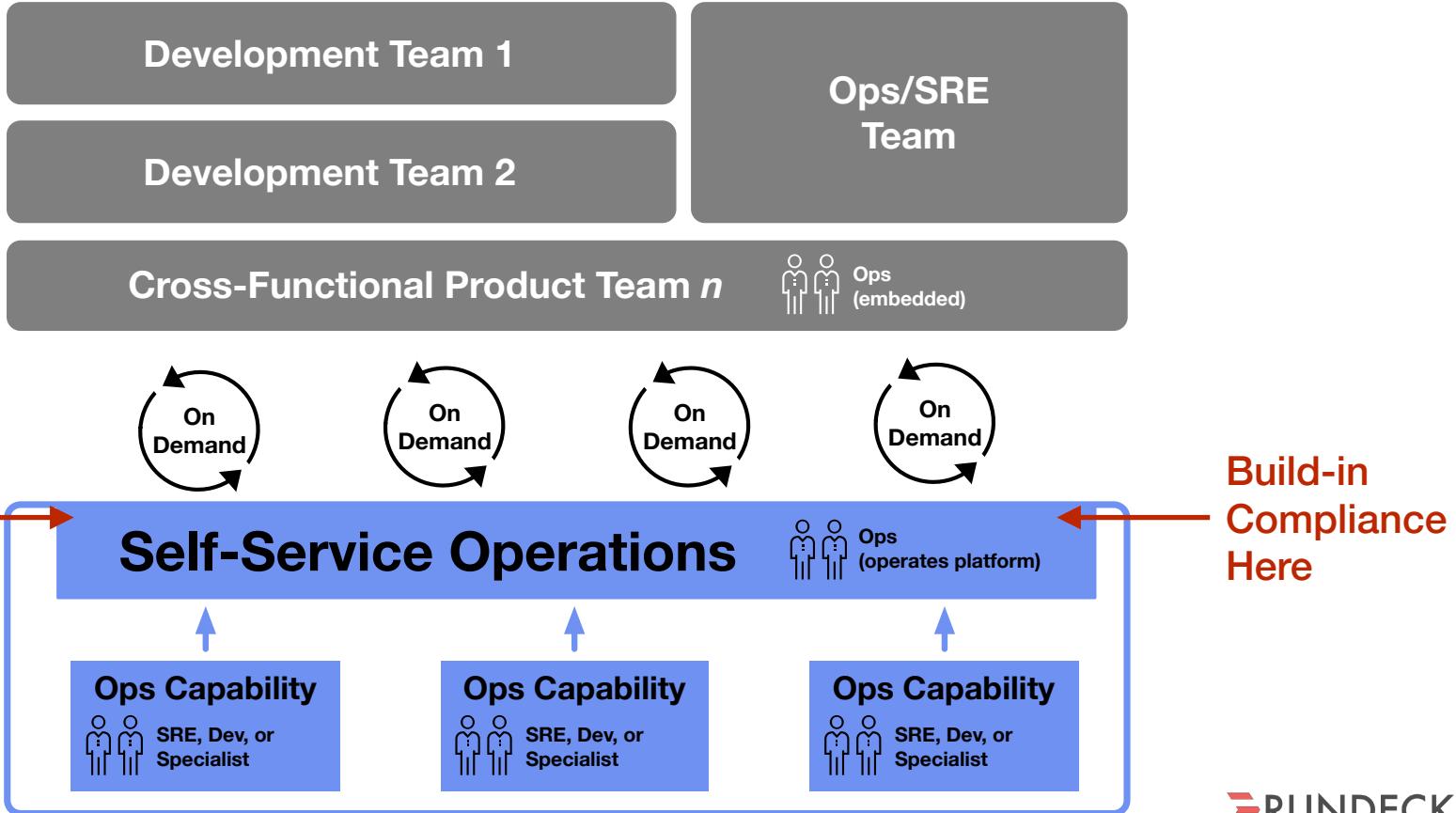
Self-Service Operations: Turn handoffs into self-service



Self-Service Operations: Works with any org model

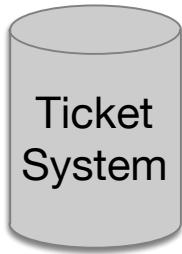


But, what about security and compliance?



Are all tickets bad?

No. Just use tickets for what they are good for

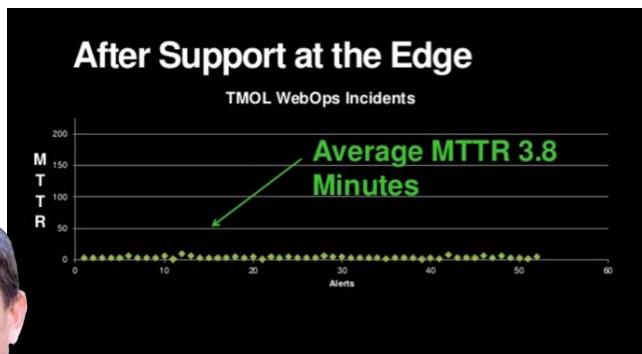
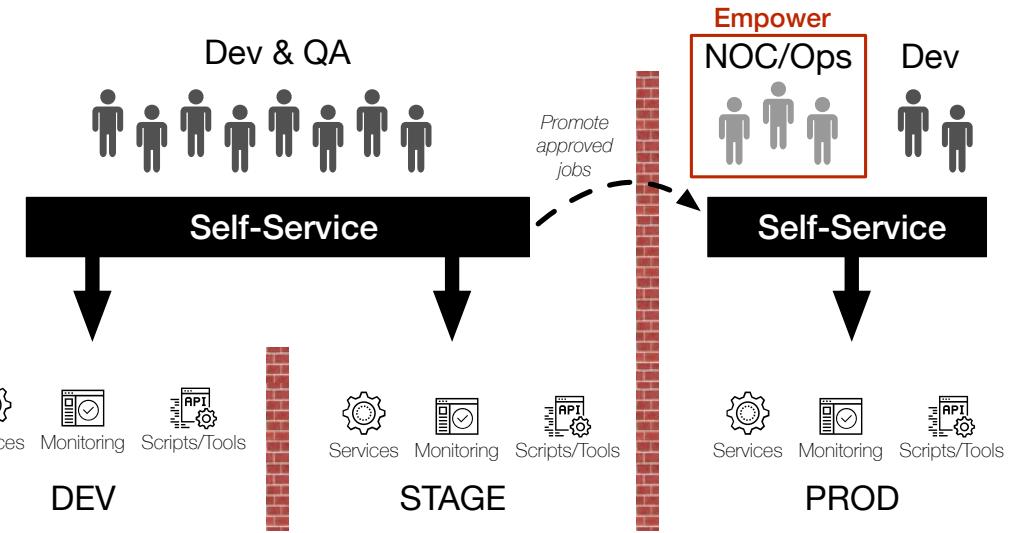


1. Documenting true problems/issues/exceptions
2. Routing for necessary approvals

Not as a general purpose work management system!

Strategy: Self-Service improves response times

ticketmaster®

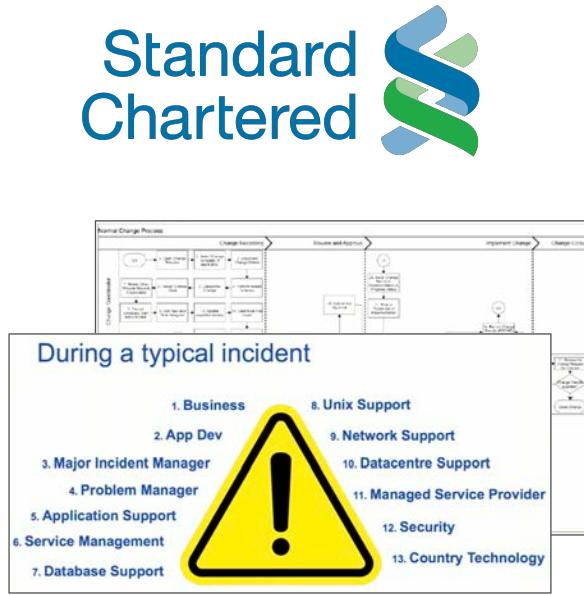


Jody Mulkey at DOES '15 SF
<https://youtu.be/USYrDaPEFtM>



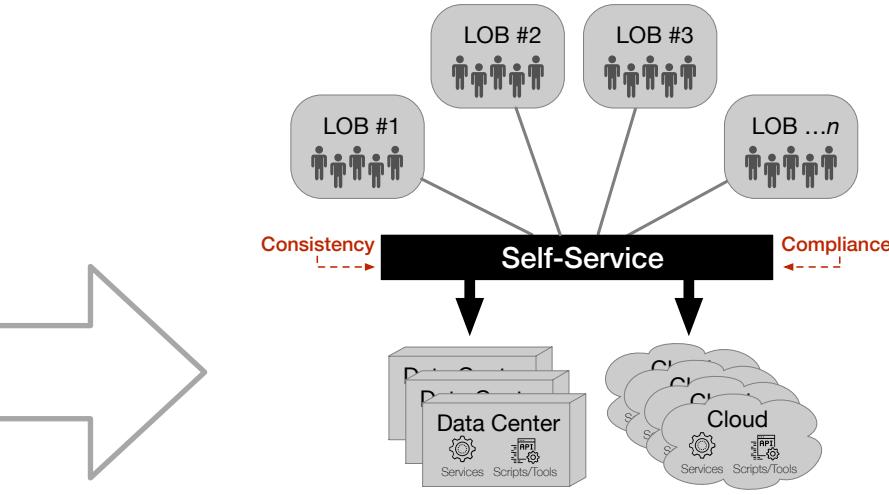
RUNDECK

Strategy: Self-Service improves consistency & compliance



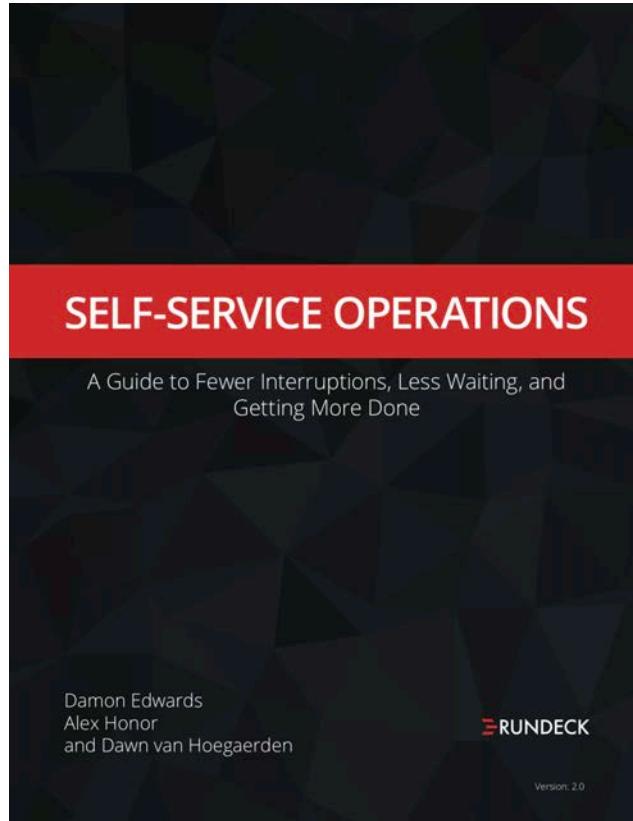
Optimized for compliance

- 86,000+ employees
- 60+ countries
- Highly regulated



12 months: 13,000+ ops tasks in privileged environments that didn't require a review

Shaun Norris at DOES '18 London
<https://youtu.be/d5IMvK0YHTg>



Where I need your help...

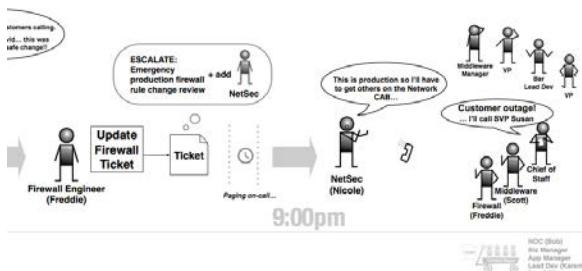
Working on documenting the Self-Service Operations design pattern.

Read for free online:

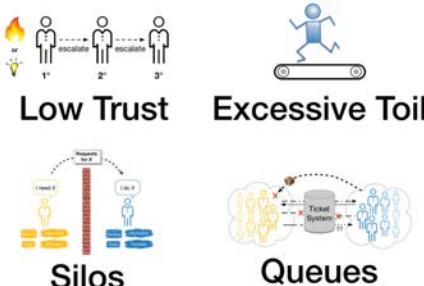
rundeck.com/self-service

Recap

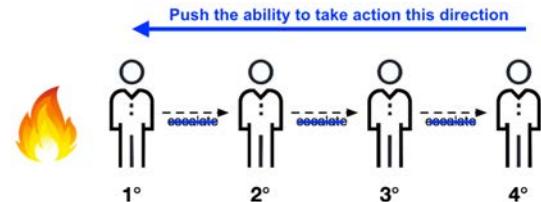
Don't forget about Ops.
Challenge conventional wisdom.



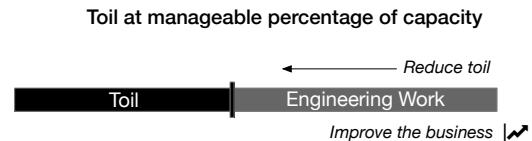
Understand the forces undermining operations work



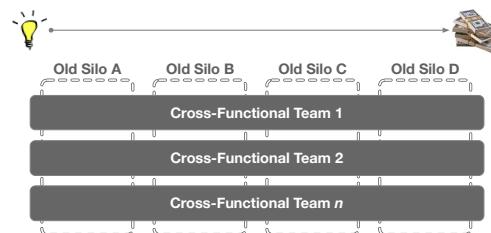
“Shift-Left” control and decision making.



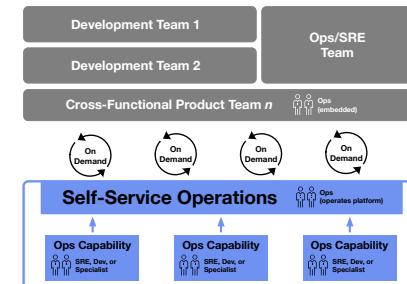
Learn from SRE: Reduce toil to create capacity to change



Focus on removing silos and queues



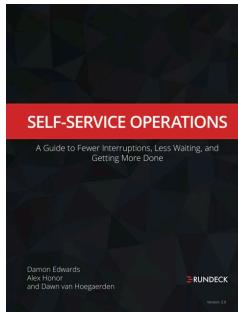
Leverage the Self-Service Operations design pattern



Let's talk...



@damonedwards
damon@rundeck.com



rundeck.com/self-service

DEVOPS ENTERPRISE SUMMIT

AN  REVOLUTION EVENT



GET TOGETHER GO FASTER

October 22-24, 2018
The Cosmopolitan of Las Vegas
Las Vegas, Nevada

 Electric Cloud

 REVOLUTION

#DOES18