

PagerDuty

Diagnosing the Dysfunction: Identify the Systemic Forces Undermining Your Operations



Amsterdam

May 2023



Create a dice rolling bot #20

Open [Irgolic opened this issue now · 0 comments](#)

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Owner

In the `dice_rolling_bot` folder, develop a Discord bot that allows users to roll virtual dice by typing a command (e.g., `*roll 1d6`). The bot should support various dice types (e.g., d4, d6, d8, d10, d12, d20) and multiple dice rolls at once. Include a `README.md` file with information on the bot's features, setup instructions, and usage guidelines.

Write Preview

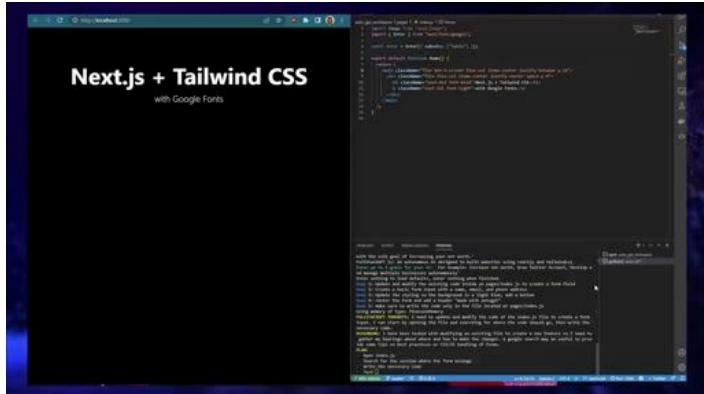
Leave a comment

Attach files by dragging & dropping, selecting or pasting them.

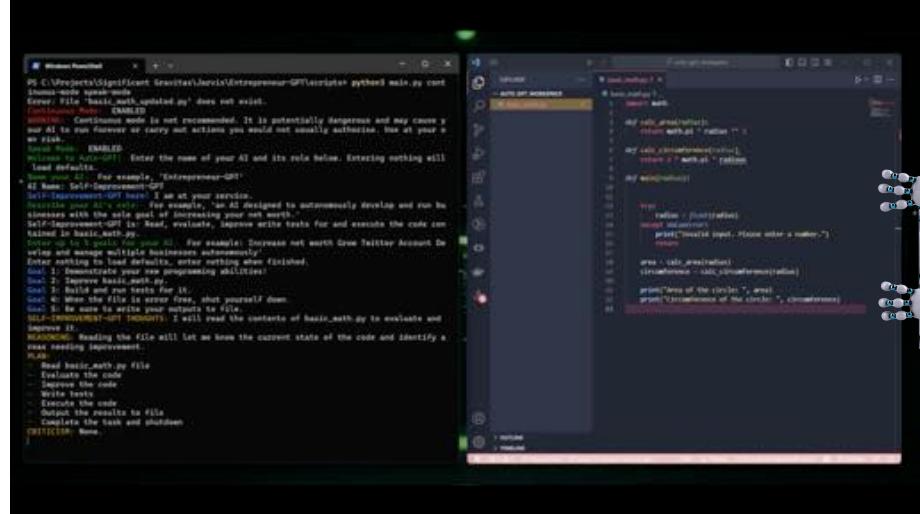
Close issue Comment

Remember, contributions to this repository should follow our GitHub Community Guidelines.

<https://twitter.com/IrgolicR/status/1652451501015457798>



<https://twitter.com/SullyOmarr/status/1644160222733406214>



<https://twitter.com/SigGravitas/status/1642181498278408193>



The screenshot shows the PyCharm IDE interface with a project named "Pygame_01" open. The code editor displays Python code for a "Player" class within a "game" module. The code initializes a player with a width of 300 and height of 300 pixels, and it includes methods for moving left, right, up, and down. A "bullet" class is also defined, which inherits from "Player" and has its own width and height. The bottom status bar shows the file path as "D:\Pygame\Pygame_01\game.py", the Python version as "Python 3.10.1", and the current line as "11".

```
Player = pygame.sprite.Sprite()
Player.image = pygame.Surface([width, height])
Player.image.fill((255, 255, 255))
Player.rect = Player.image.get_rect()

class Bullet(pygame.sprite.Sprite):
    def __init__(self, x, y):
        super().__init__()
        self.image = pygame.Surface([width, height])
        self.image.fill((255, 0, 0))
        self.rect = self.image.get_rect()
        self.rect.x = x
        self.rect.y = y
        self.speed_x = 10
        self.speed_y = 10

    def update(self):
        self.rect.x += self.speed_x
        self.rect.y += self.speed_y
        if self.rect.x >= 800 or self.rect.y >= 600:
            self.kill()
```

https://twitter.com/torey_kohara/status/1656058176444461057



Create a dice rolling bot #20

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Irgolic commented now

In the `dice_rolling_bot` folder, develop a Discord bot that allows users to roll virtual dice by typing a command (e.g., "roll 1d6"). The bot should support various dice types (e.g., d4, d6, d8, d10, d12, d20) and multiple dice rolls at once. Include a `README.md` file with information on the bot's features, setup instructions, and usage guidelines.

[Leave a comment](#)

Write Preview

[H](#) [B](#) [I](#) [F](#) [P](#) [A](#) [C](#) [U](#) [S](#) [D](#) [E](#) [R](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [T](#) [W](#) [X](#) [Y](#) [Z](#)

[Leave a comment](#)

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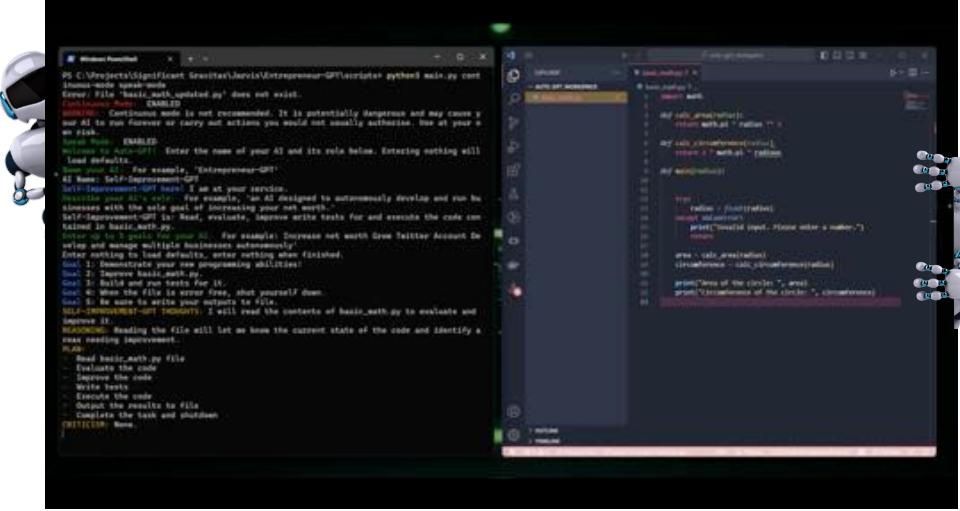
Remember, contributions to this repository should follow our [GitHub Community Guidelines](#).

<https://twitter.com/IrgolicR/status/1652451501015457798>

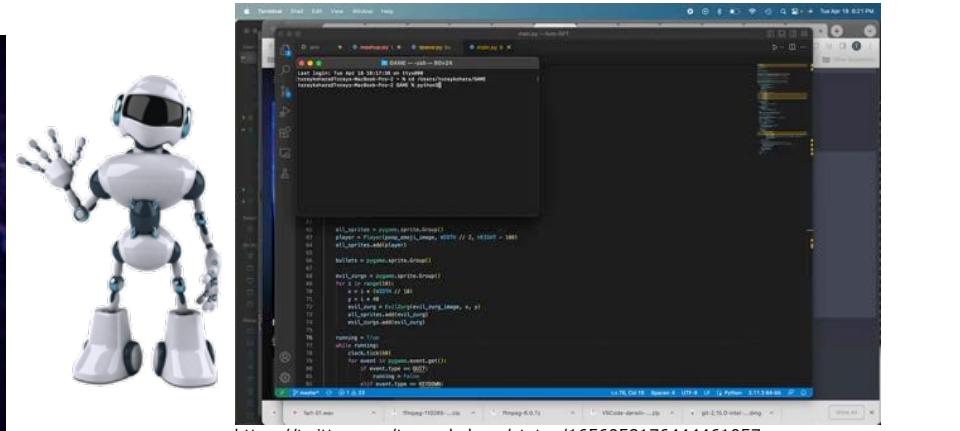


The screenshot shows a browser window with the URL `http://localhost:3001`. The page title is "Next.js + Tailwind CSS with Google Fonts". The content includes a heading "Next.js + Tailwind CSS" and a sub-section "with Google Fonts". Below this is a dark-themed code editor or terminal window showing the command-line interface for a Next.js project. The terminal output includes commands like `npm run dev`, `npm run build`, and `npm run start`, along with various logs and build statistics. A tooltip from the browser's developer tools is visible, providing information about the current element being viewed.

<https://twitter.com/SullyOmarr/status/1644160222733406214>



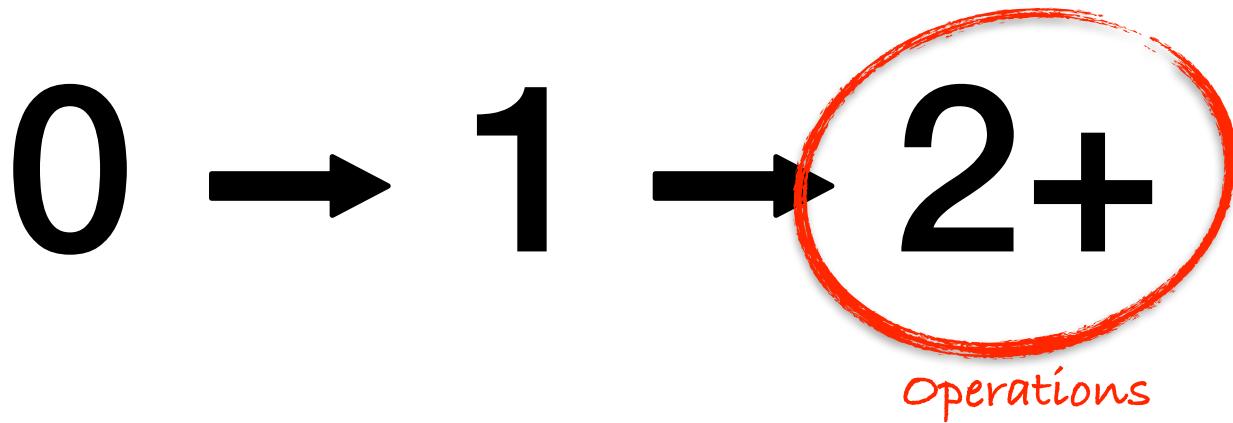
<https://twitter.com/SigGravitas/status/1642181498278408193>



https://twitter.com/torey_kohara/status/1656058176444461057

What is Operations?

0 → 1 → 2+



PEOPLE



TOOLS



Operations



**RUNNING / HAPPY
SERVICES / CUSTOMERS**

We'll still be collaboratively operating complex socio-technical systems....

Understanding current context

Making tradeoff decisions

Making budget decisions

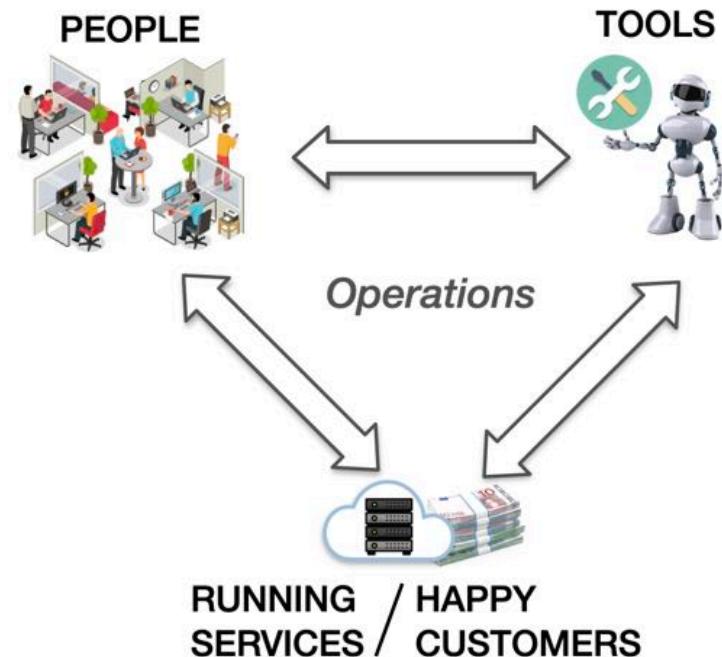
Determining service and experience

Guiding the AI 

Validating what the AI is doing 

Monitoring outputs

Fixing problems



Ok, Operations isn't going away.

How do we make it better?



DevOps Checkup

- Small batches
- Infrastructure as code
- Continuous flow (CI/CD)
- DevSecOps scanning
- Shift-left testing
- Feature flags
- You build it, you run it



Ops Checkup

- ??
 - ??
 - ??
 - ??
 - ??
 - ??
 - ??

You can't jump to solutions until you sufficiently understand the problem.

Devopsdays Ghent 2009

welcome program reactions speakers participants

This is how the first devopsdays was announced:

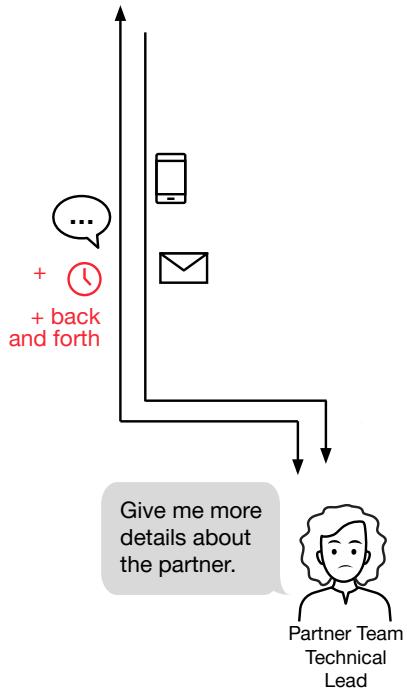
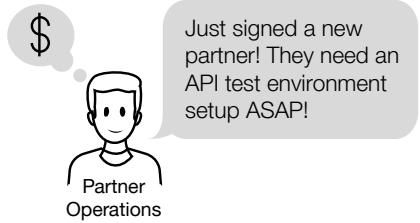


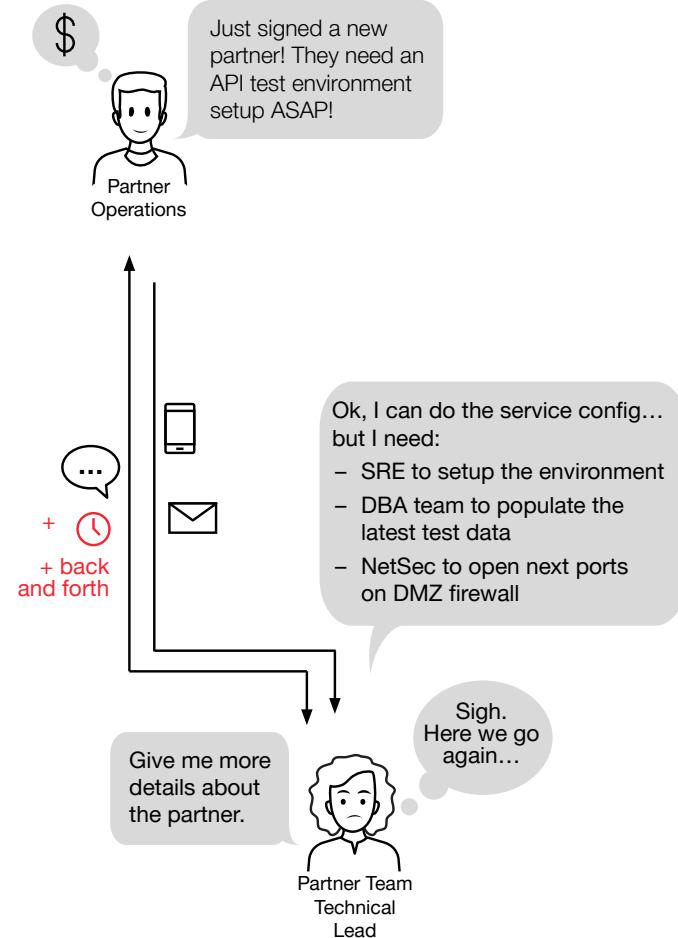
The first devopsdays happened in Belgium - Ghent and was a great success. Have a look at the [reactions](#) is created and the [presentations](#) that were held. See you next time!

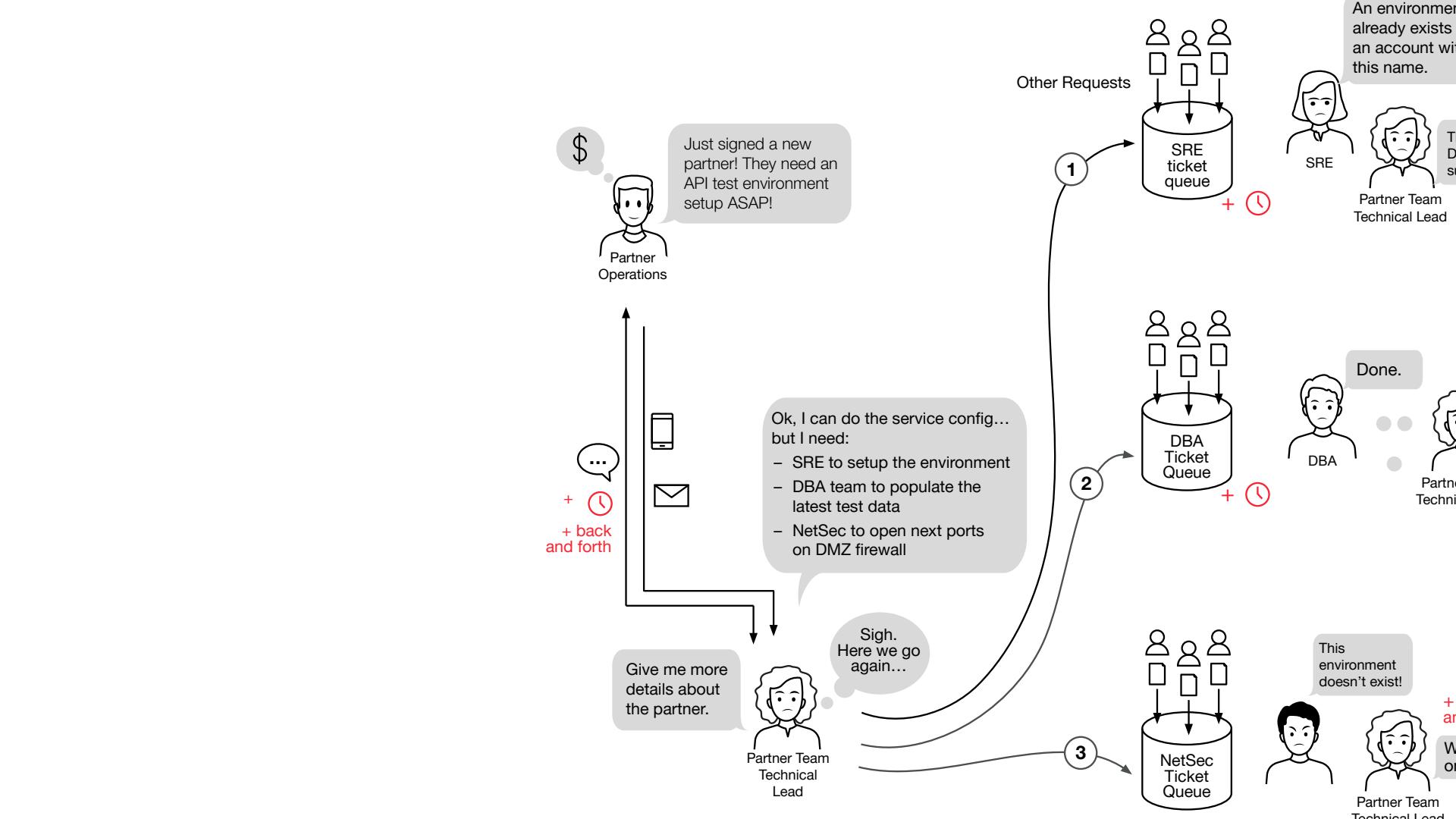
Storytime....

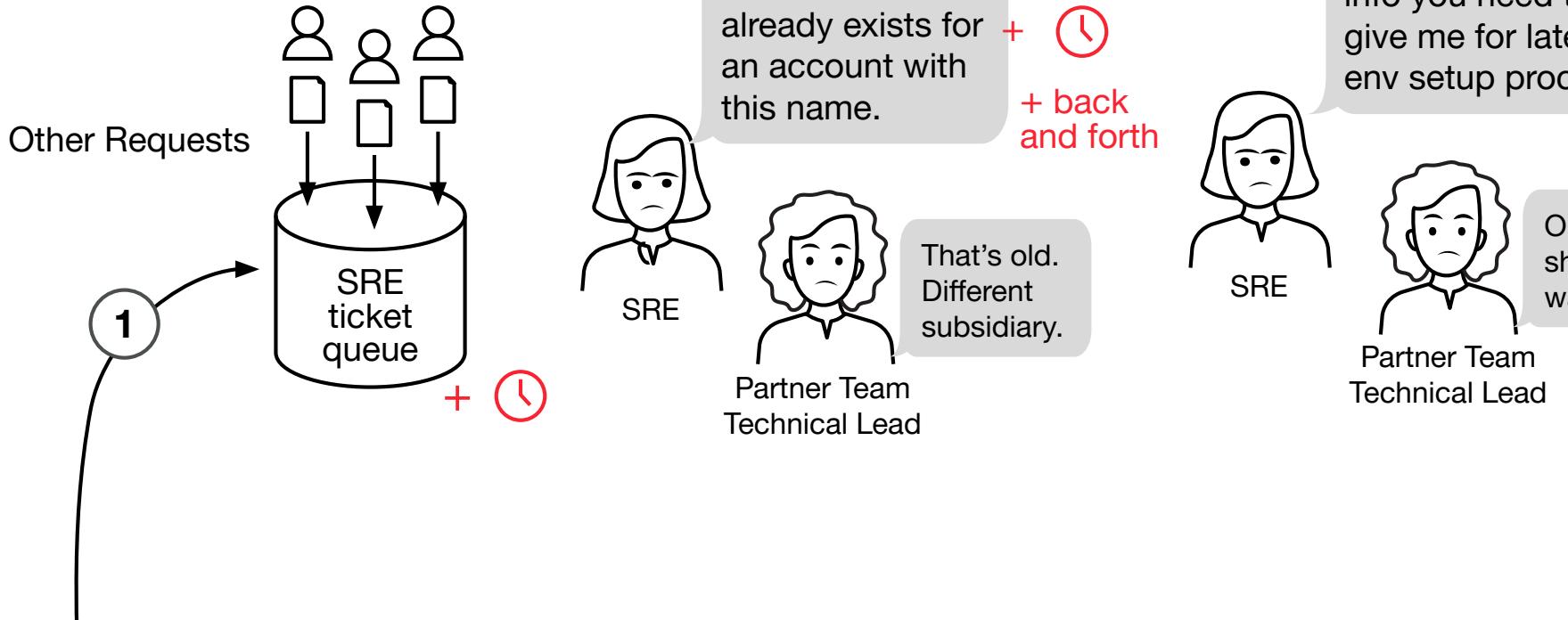


Just signed a new
partner! They need an
API test environment
setup ASAP!









An environment
already exists for
an account with
this name.



+ back
and forth



Partner Team
Technical Lead

That's old.
Different
subsidiary.



SRE

There is new config
info you need to
give me for latest
env setup process.



+ back
and forth



Partner Team
Technical Lead

Ok send
sheet my
way...



Terraform



ANSIBLE



SRE

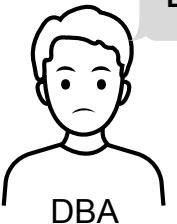
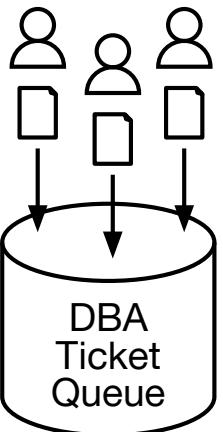
Done.

queue



Partner Team
Technical Lead

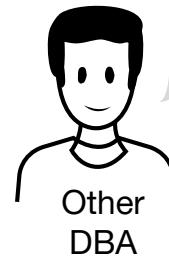
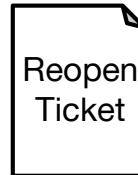
Partner Team
Technical Lead



Done.



Uh Oh. This
is for EU
not US.



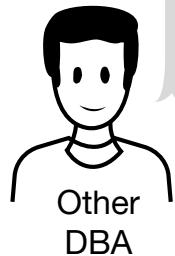
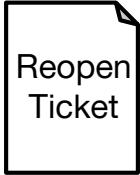
Erik
moved
teams.
Catch me
up?





Partner Team
Technical Lead

Uh Oh. This
is for EU
not US.



Other
DBA

Erik
moved
teams.
Catch me
up?

Partner Team
Technical Lead

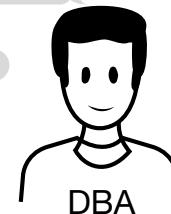
Ok.
So...



+ back
and forth



PowerShell

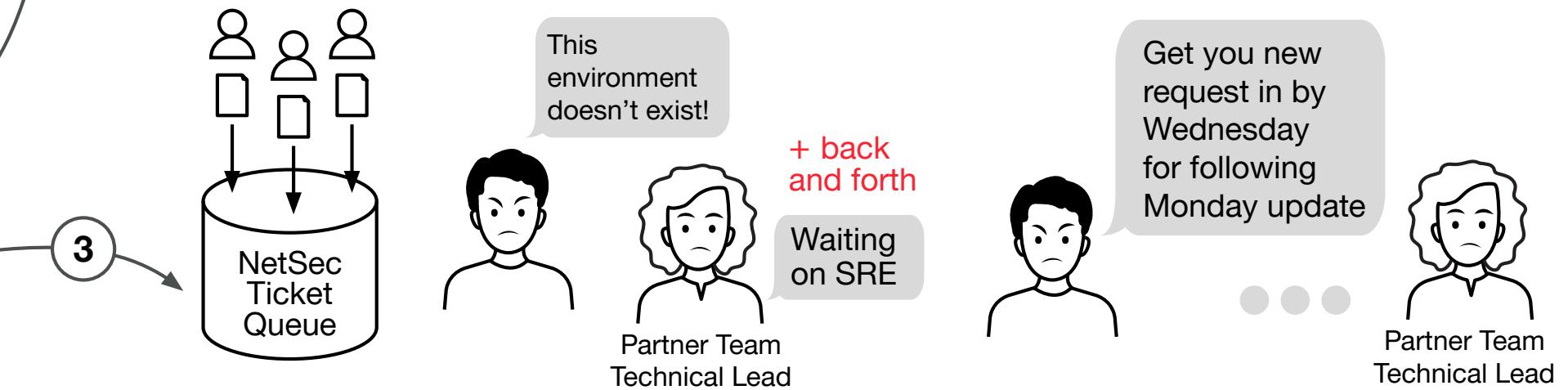


DBA

Done.

+ ⏳

Technical Lead



Technical Lead

nt
ist!



+ back
and forth

Waiting
on SRE

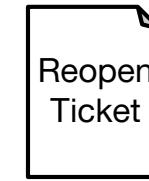
Partner Team
Technical Lead



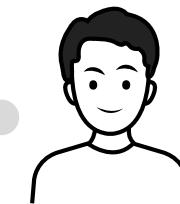
Get you new
request in by
Wednesday
for following
Monday update



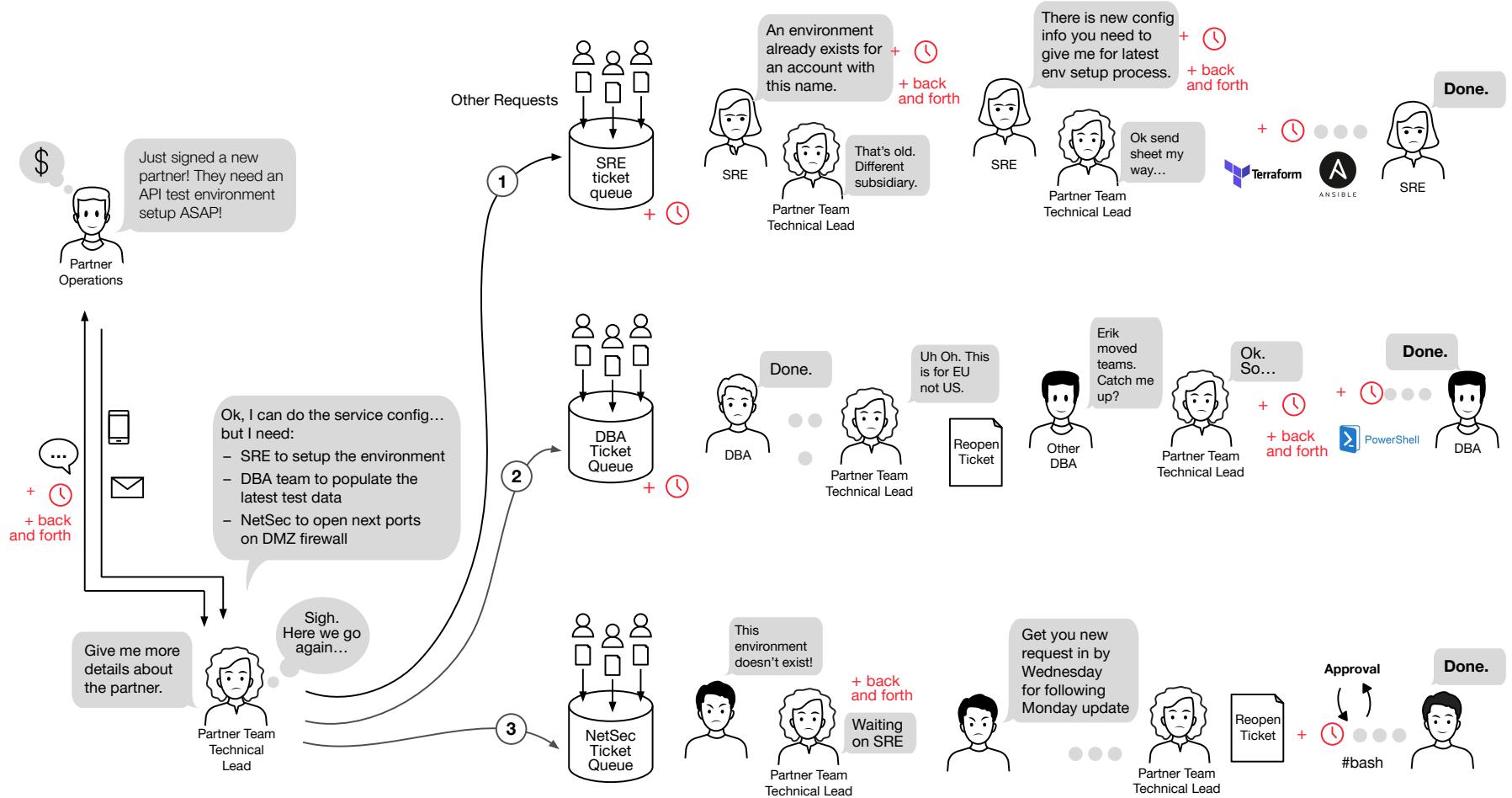
Partner Team
Technical Lead

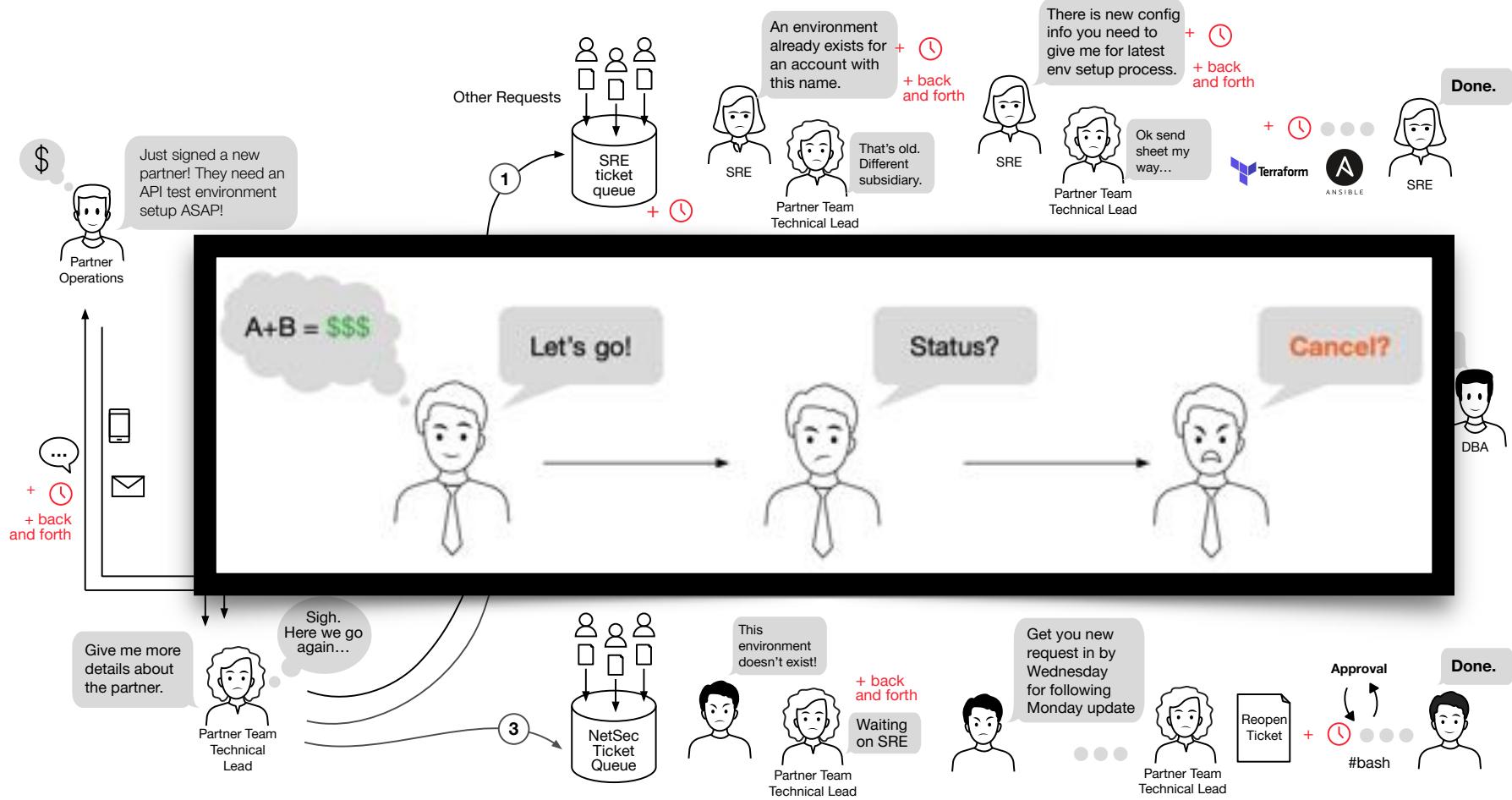


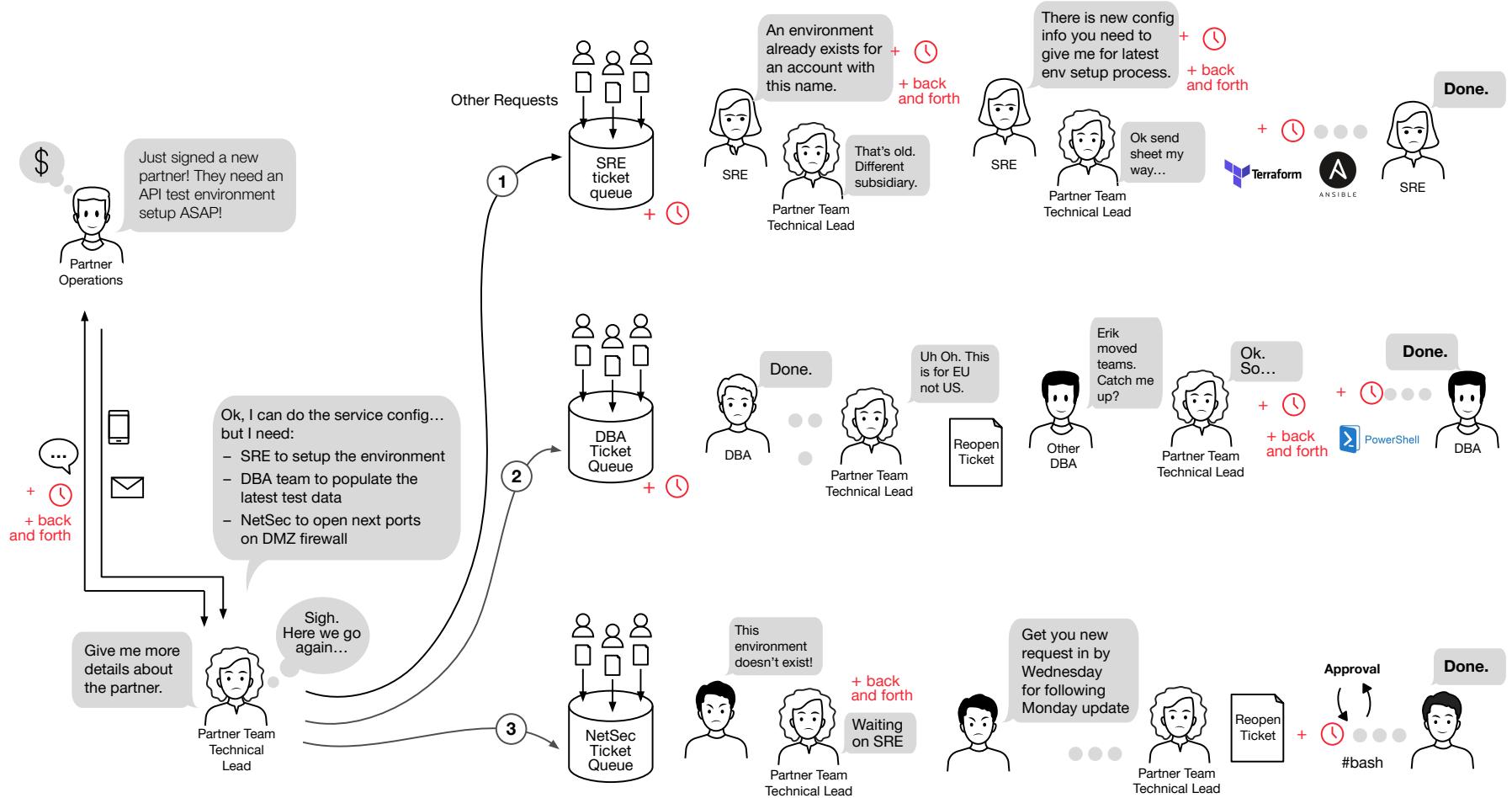
Approval
+ #bash

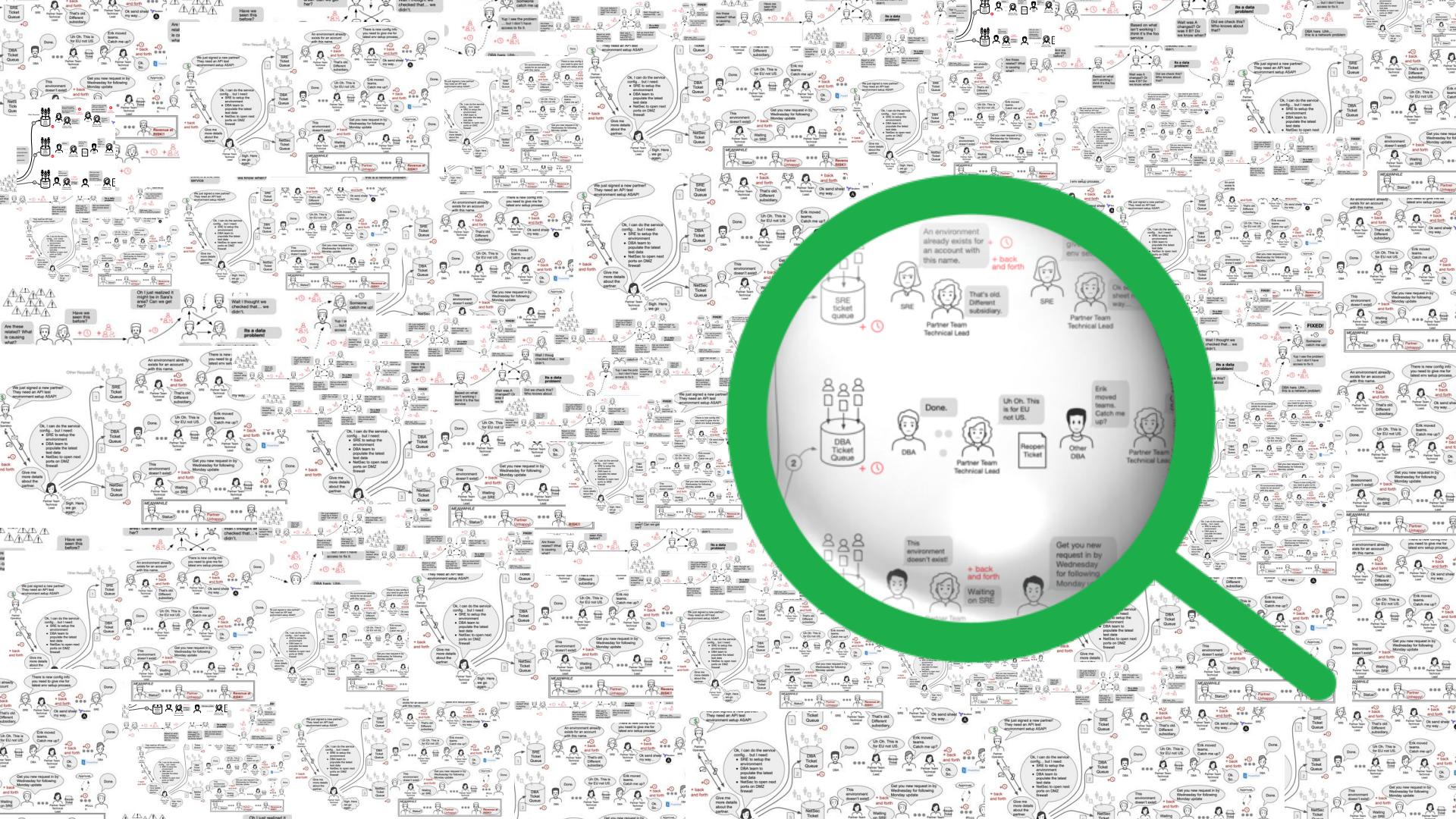


Done.

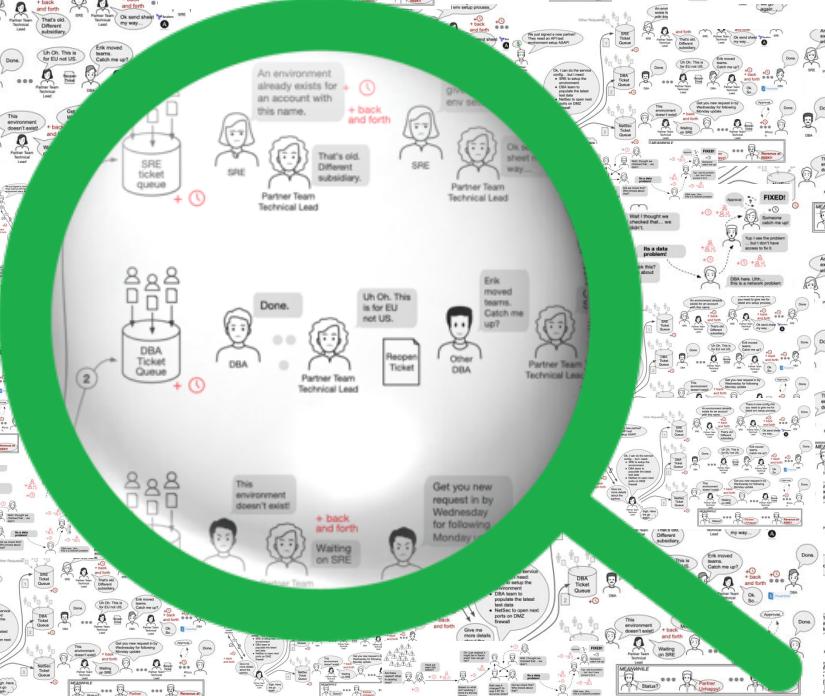








“But, why does everything take too long, cost too much, and break too often?”



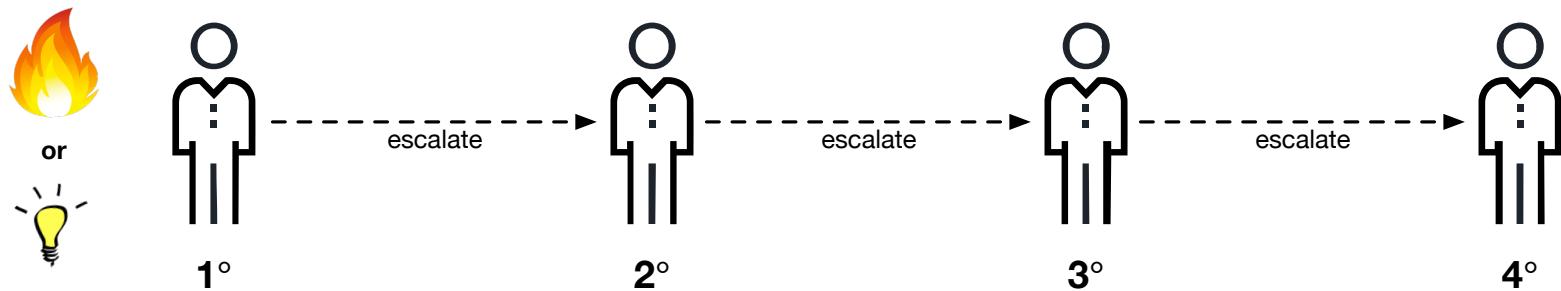
What *actually* gets in the way of Operations?

7 Systemic Forces Undermining Operations

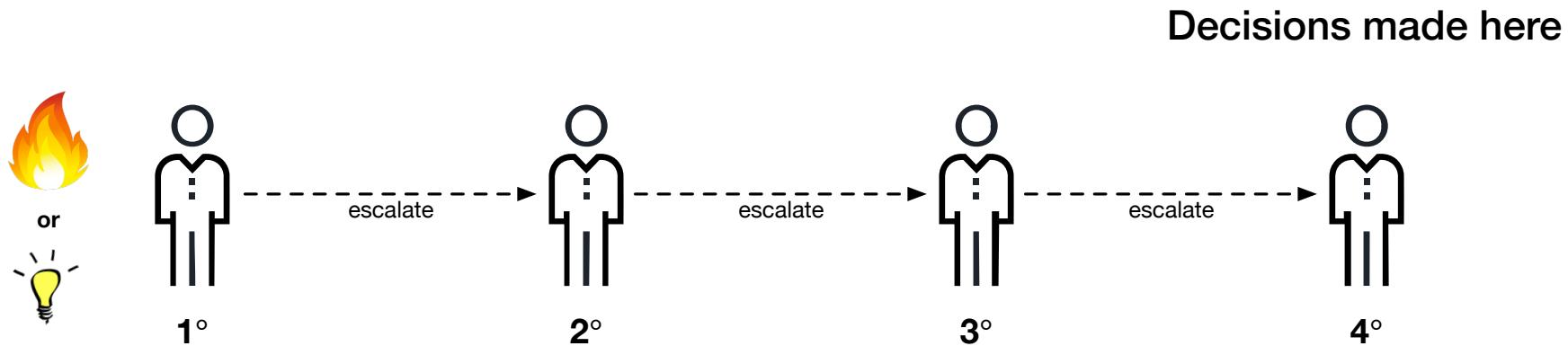
7 Systemic Forces Undermining Operations

1. Low Trust

Where are decisions made? Who can take action?



Where are decisions made? Who can take action?



All work is contextual



John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

Is this dangerous?



John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

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

John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

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

Is this dangerous?



John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

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

John
Allspaw

PagerDuty

All work is contextual

```
rm -rf $PATHNAME
```

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

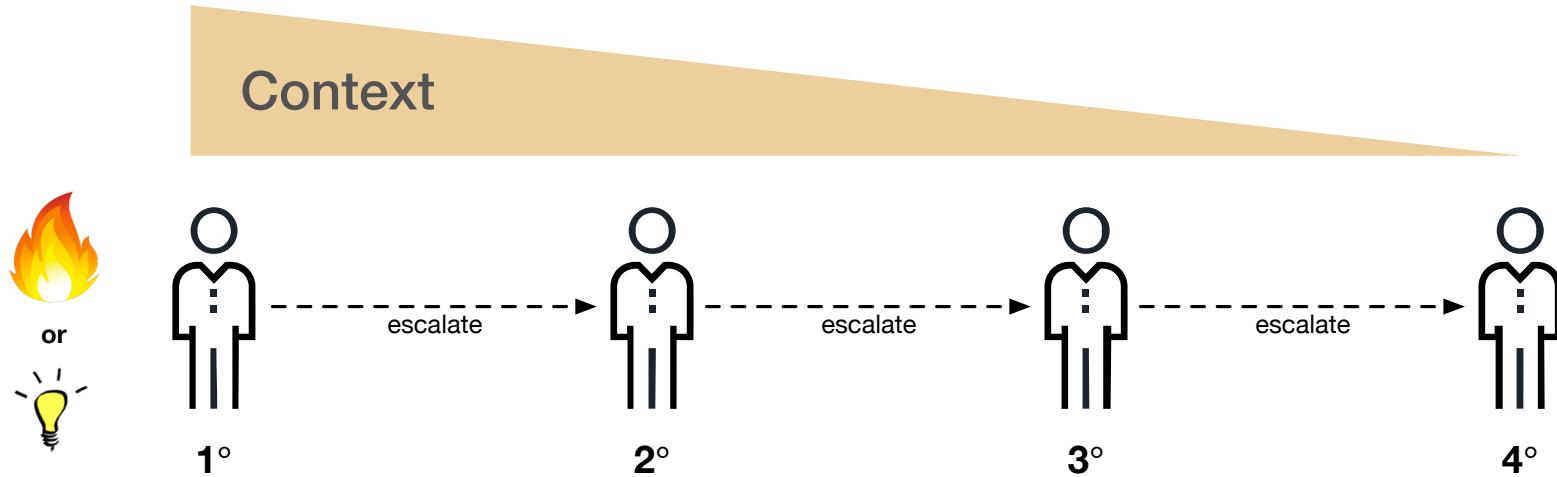
Answer is always
“it depends”



John
Allspaw

PagerDuty

Where are decisions made? Who can take action?



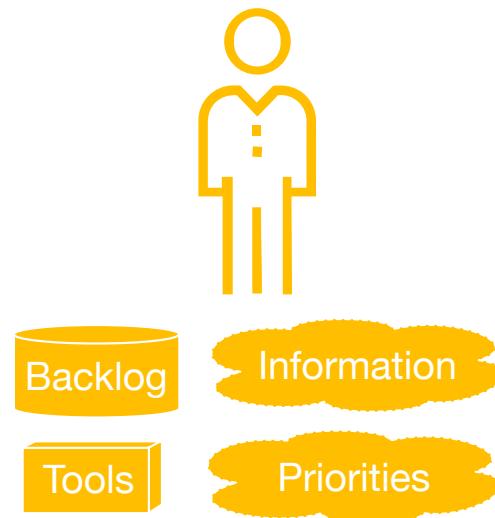
7 Systemic Forces Undermining Operations

1. Low Trust

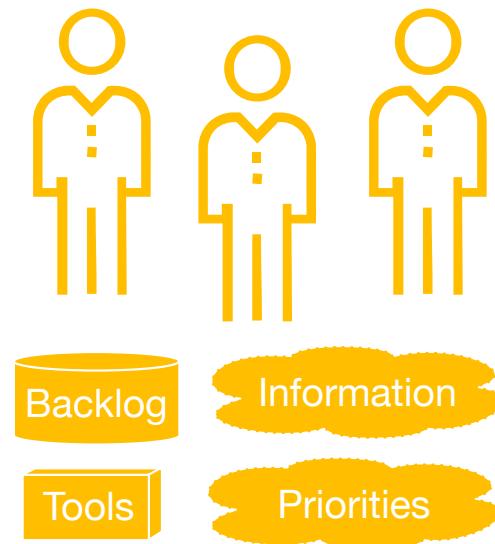


2. Silos

What's a silo?



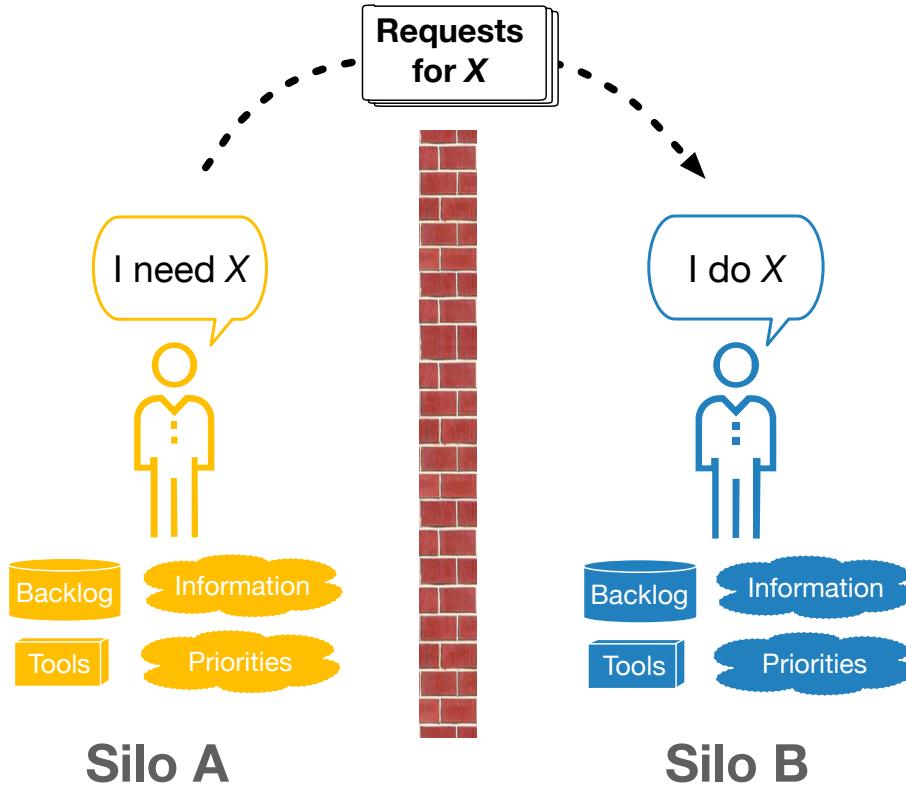
What's a silo?



What's a silo?

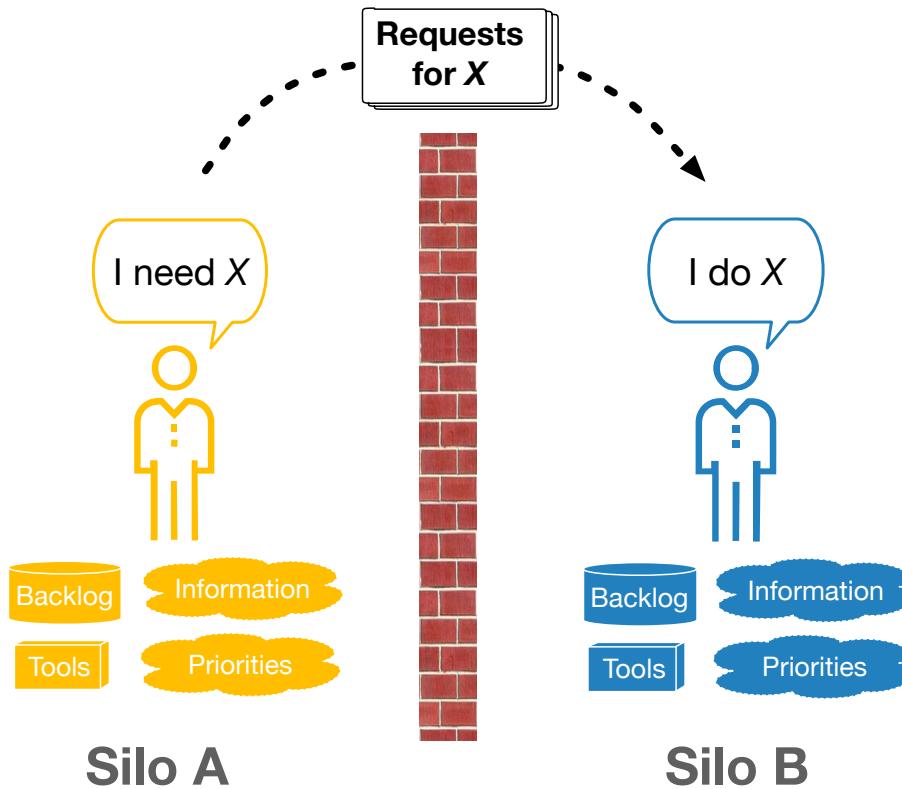


What's a silo?

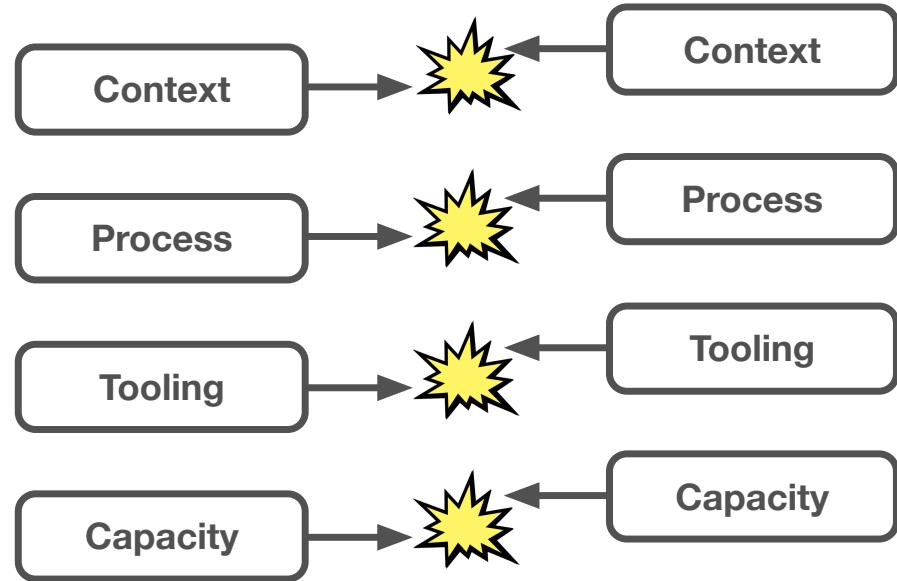
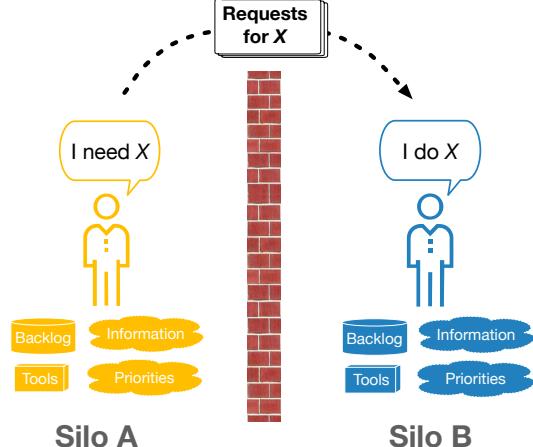


What's a silo?

- ✖ Knowledge gap
- ✖ Skills gap
- ✖ Access gap



Silos cause disconnects and mismatches

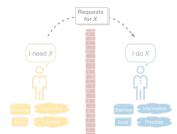


7 Systemic Forces Undermining Operations

1. Low Trust



2. Silos



3. Ticket Queues

How do we cover for the disconnects and mismatches?



Silo A

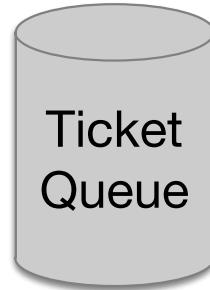


Silo B

How do we cover for the disconnects and mismatches?

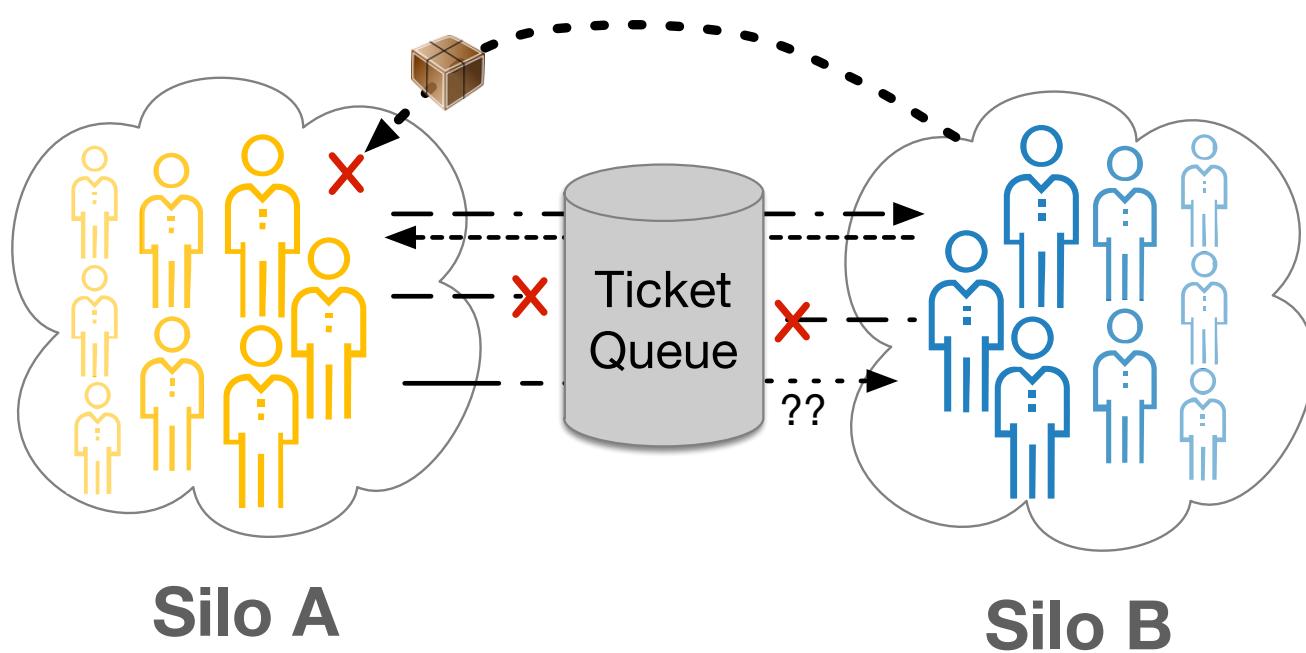


Silo A

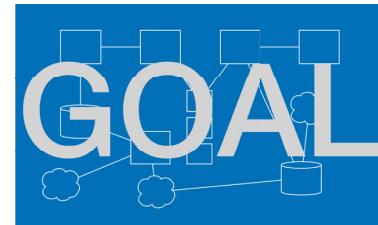


Silo B

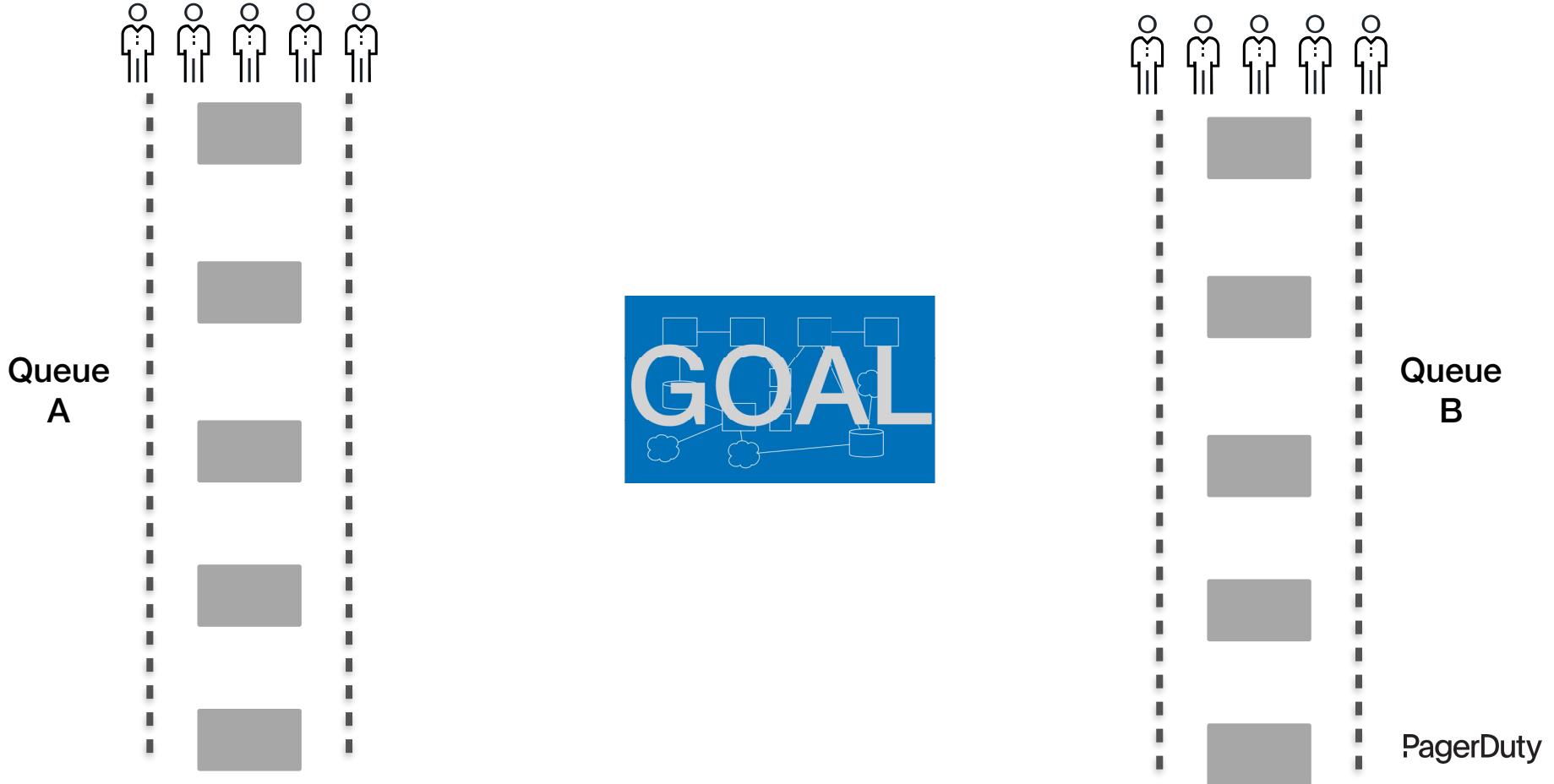
...and we all know how well that works



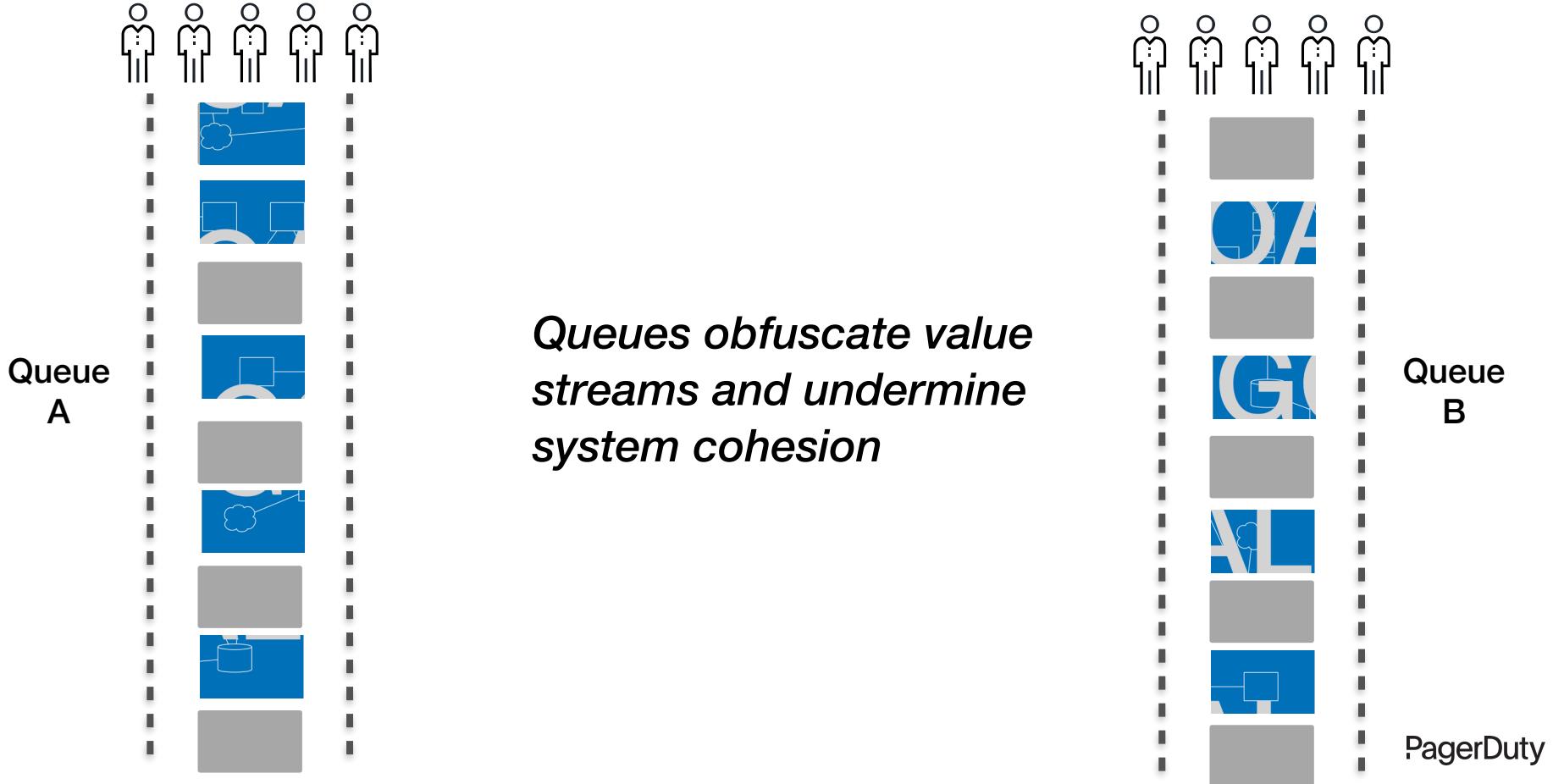
What do queues do to value streams?



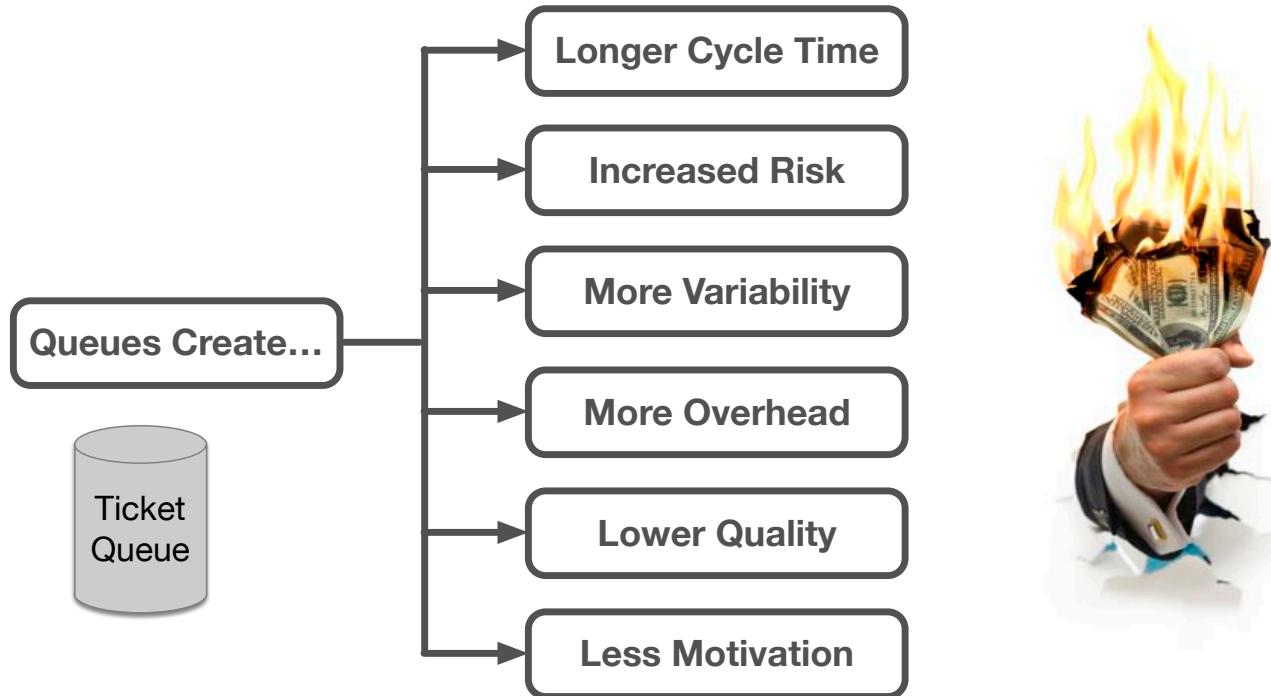
What do queues do to value streams?



What do queues do to value streams?



Queues are an expensive way to manage work



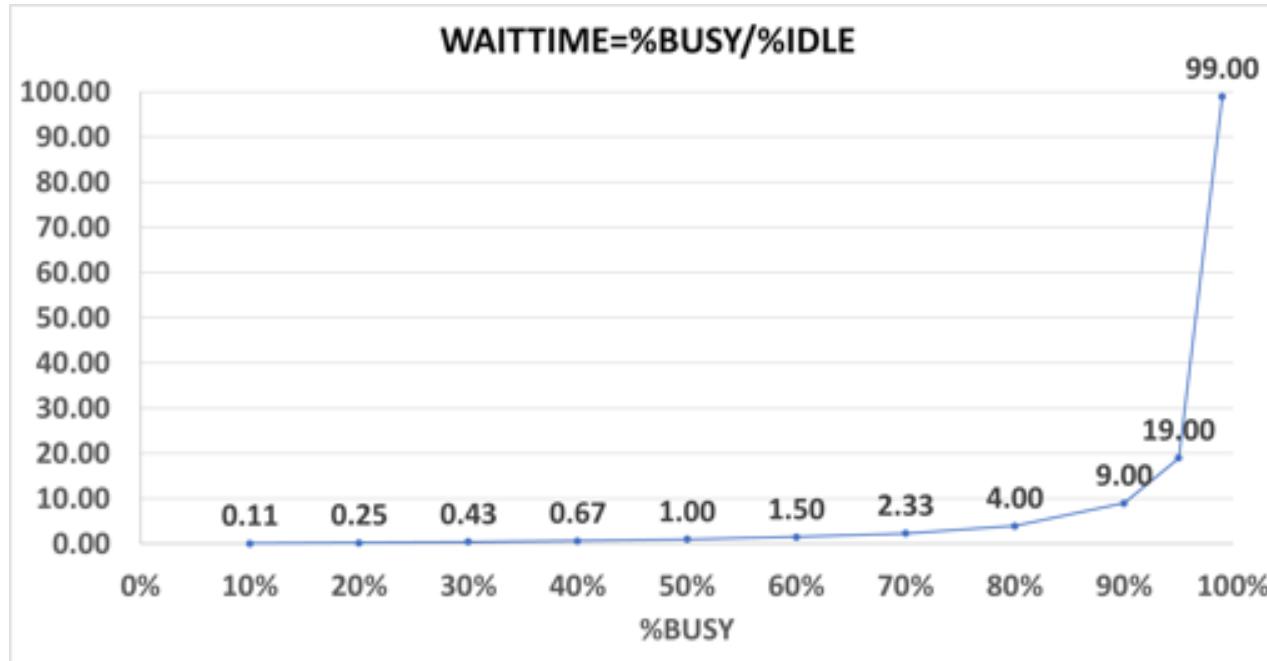
Adapted from Donald G. Reinertsen, The Principles of Product Development Flow: Second Generation Lean Product Development

Queues get ugly real quick

ACCOUNTING VS. PHYSICS – How Coordination Costs Are Killing Your Effectiveness
DevOps Enterprise Summit - Las Vegas 2022
<https://videos.itrevolution.com/watch/763825194/>



Scott Prugh

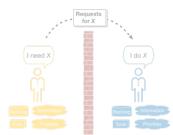


7 Systemic Forces Undermining Operations

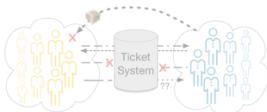
1. Low Trust



2. Silos

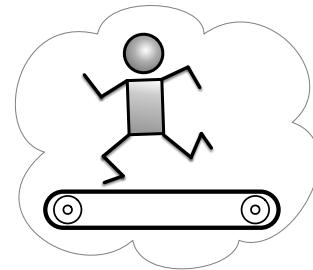


3. Ticket Queues

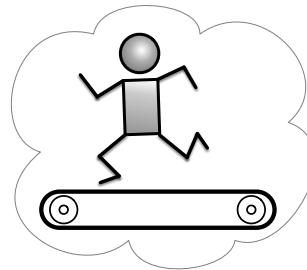


4. Toil

Toil: Name For a Problem We've All Felt



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.**”



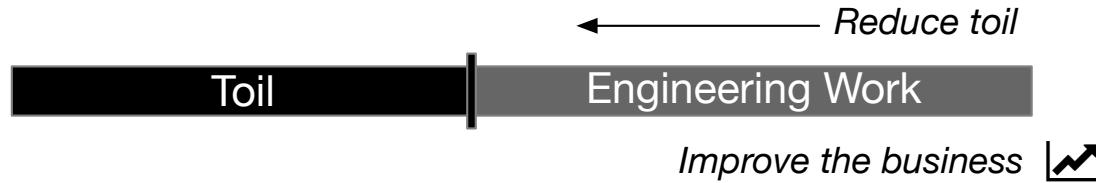
-Vivek Rau
Google

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

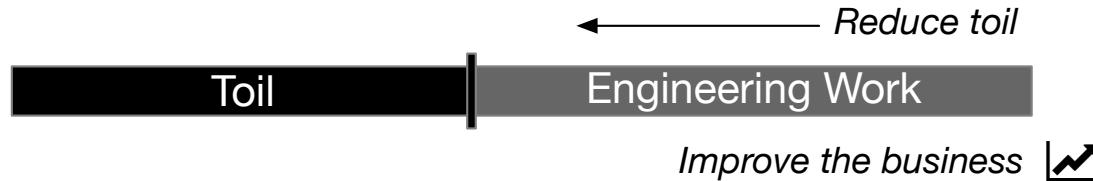
Excessive Toil Prevents Fixing the System

Toil at manageable percentage of capacity



Excessive Toil Prevents Fixing the System

Toil at manageable percentage of capacity

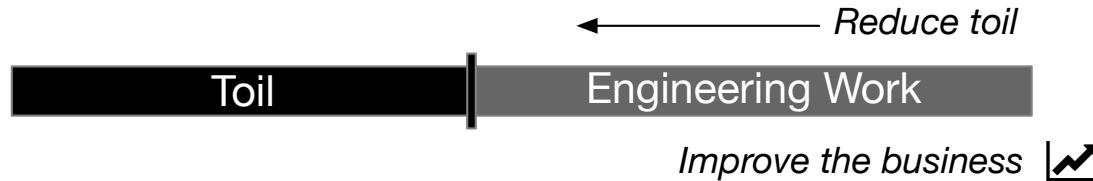


Toil at unmanageable percentage of capacity (“Engineering Bankruptcy”)



Excessive Toil Prevents Fixing the System

Toil at manageable percentage of capacity

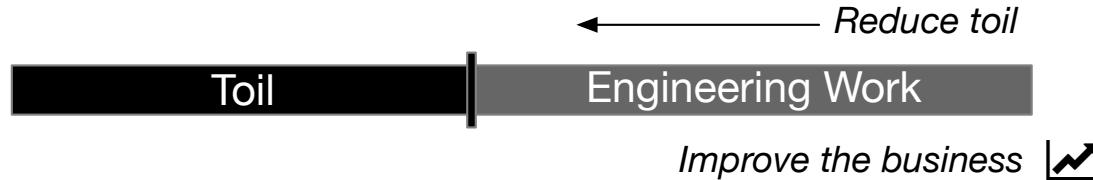


Toil at unmanageable percentage of capacity (“Engineering Bankruptcy”)



Excessive Toil Prevents Fixing the System

Toil at manageable percentage of capacity



Toil at unmanageable percentage of capacity (“Engineering Bankruptcy”)

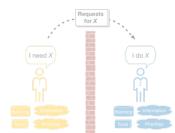


7 Systemic Forces Undermining Operations

1. Low Trust



2. Silos



3. Ticket Queues



4. Toil



5. Coordination Costs

Coordination Costs



Laura
Maguire

Maguire, L. (2020). Controlling the Costs of Coordination in Large-scale Distributed Software Systems. The Ohio State University.

“The costs of maintaining communication links (or "channels") between actors and the costs of exchanging "messages" along these links”

-Malone, T. W. (1987). Modeling Coordination in Organizations and Markets. Management Science

“Coordination costs refer to the burden on joint action participants that is due to choreographing their efforts”

-Klein, G., Feltovich, P. J., Bradshaw, J. M., & Woods, D. D. (2005). Common ground and coordination in joint activity

Coordination Costs

“How may people do I have to talk to? And how many levels above me do I have to go?”



Gene
Kim



Steven
Spear

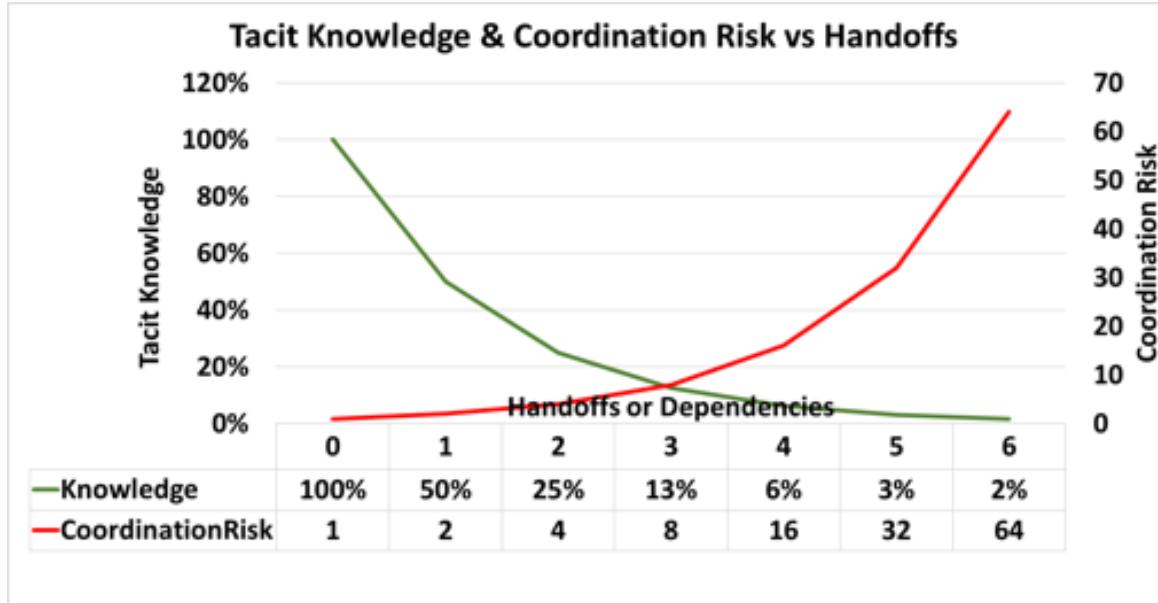
new book coming!

Focus on the Handoffs!

ACCOUNTING VS. PHYSICS – How Coordination Costs Are Killing Your Effectiveness
DevOps Enterprise Summit - Las Vegas 2022
<https://videos.itrevolution.com/watch/763825194/>



Scott
Prugh



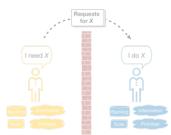
CoordinationRisk Credit: Troy Magennis	1 in 2^n
KnowledgeLeft Credit: Mary + Tom Poppendieck, Jon Smart	$1/(2^n)$

7 Systemic Forces Undermining Operations

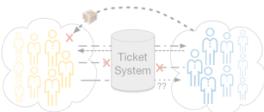
1. Low Trust



2. Silos



3. Ticket Queues



4. Toil



5. Coordination Costs



6. Unplanned Work

Unplanned Work



Unplanned Work

“Unplanned work is what prevents you from doing [needed, planned work]. Like matter and antimatter, **in the presence of unplanned work, all planned work ignites with incandescent fury, incinerating everything around it.**”

The Phoenix Project

Gene Kim, Kevin Behr, and George Spafford



Unplanned Work

"Unplanned work is estimated to account for **50-70% of a developer's time**, leading to **decreased productivity** and **increased costs** for the organization."

(Source: "Managing Unplanned Work in Agile Development," Gartner, 2015)

"Unplanned work can result in a **delay of up to 20%** in project completion, leading to increased costs and decreased customer satisfaction."

(Source: "The Impact of Unplanned Work on Software Development Projects," Journal of Systems and Software, 2014)

"Unplanned work in IT organizations can result in a **20-50% reduction in productivity**, leading to **increased costs and decreased overall efficiency**."

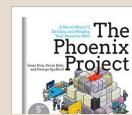
(Source: "The Impact of Unplanned Work on IT Organizations," Project Management Institute, 2016)

"The cost of unplanned work in IT organizations can be significant, with estimates ranging from **30-50% of total project expenses**." (Source: "Unplanned Work in IT: The Hidden Cost of Project Delays," Information Systems Research, 2019)

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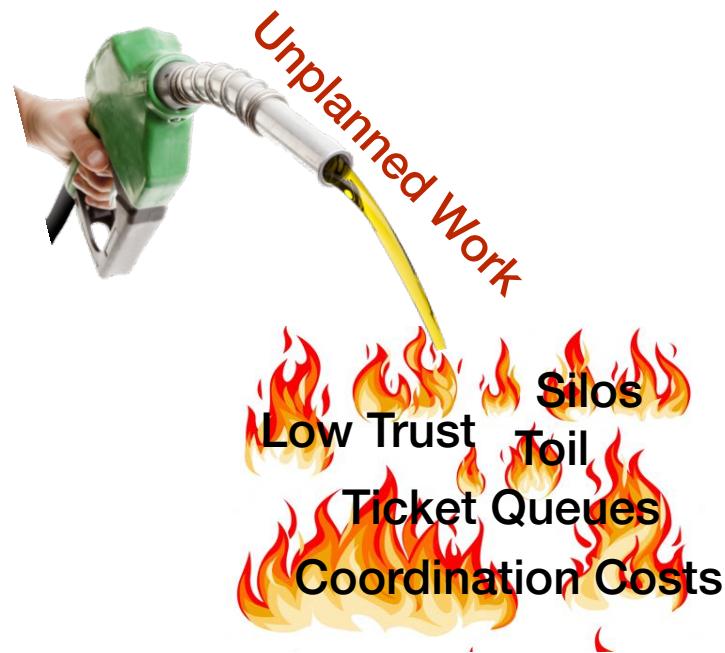


"Unplanned work can lead to a **decrease in team morale** and motivation, causing a **decline in the quality of work** and a **rise in errors**."

(Source: "The Effect of Unplanned Work on IT Teams," Information Technology & People, 2019)

"Developers who spend more than **50%** of their time on **unplanned work** report **lower job satisfaction** and **increased stress**, leading to **decreased productivity** and **higher turnover rates**." (Source: "The Cost of Unplanned Work on Developers," Agile Alliance, 2017)

Unplanned Work Is Fuel to the Dysfunction!

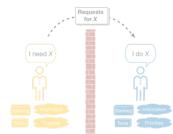


7 Systemic Forces Undermining Operations

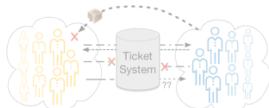
1. Low Trust



2. Silos



3. Ticket Queues



4. Toil



5. Coordination Costs



6. Unplanned Work



7. Imprecise Measurement



John Willis
“Deming’s Journey to
Profound Knowledge”
(2023)





John Willis
“Deming’s Journey to
Profound Knowledge”
(2023)



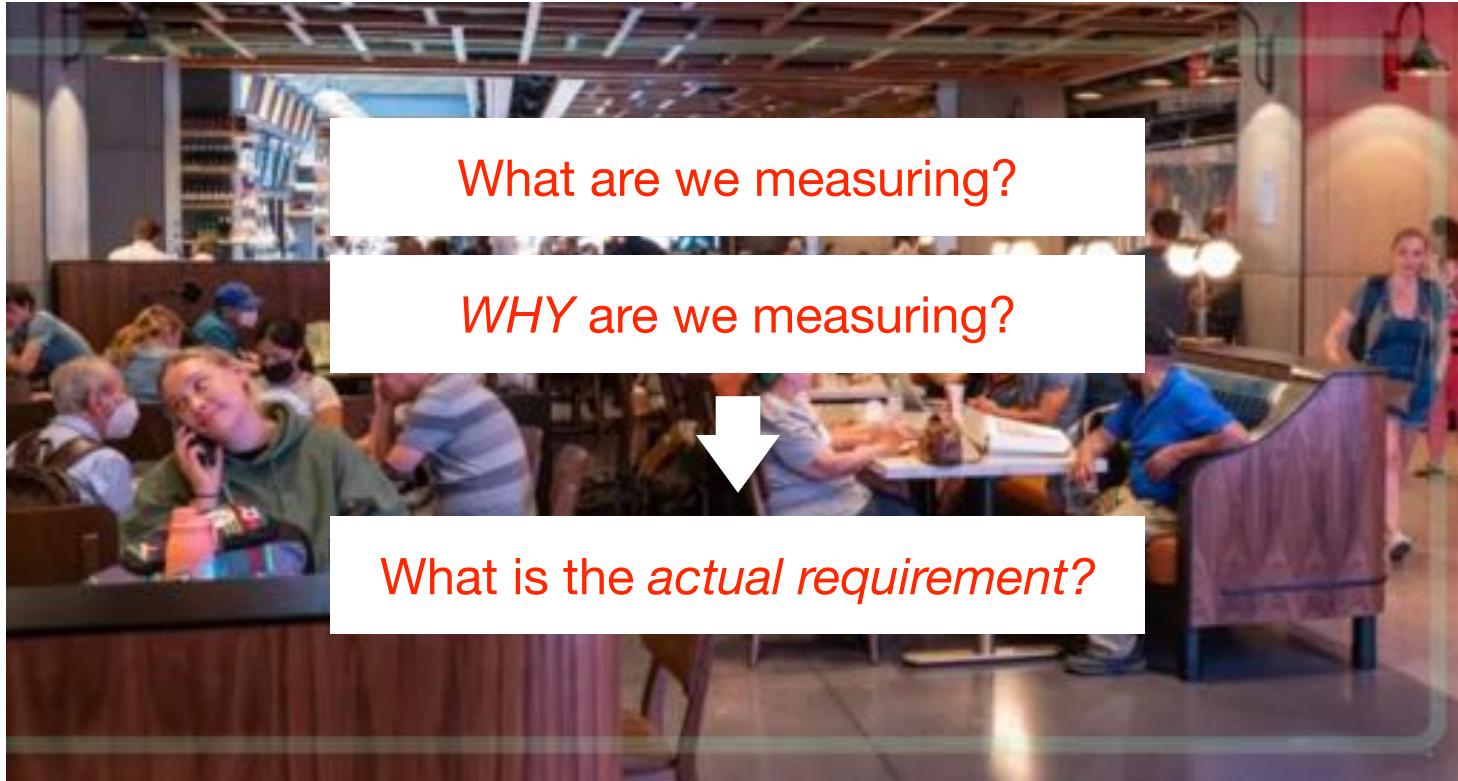


John Willis
“Deming’s Journey to
Profound Knowledge”
(2023)



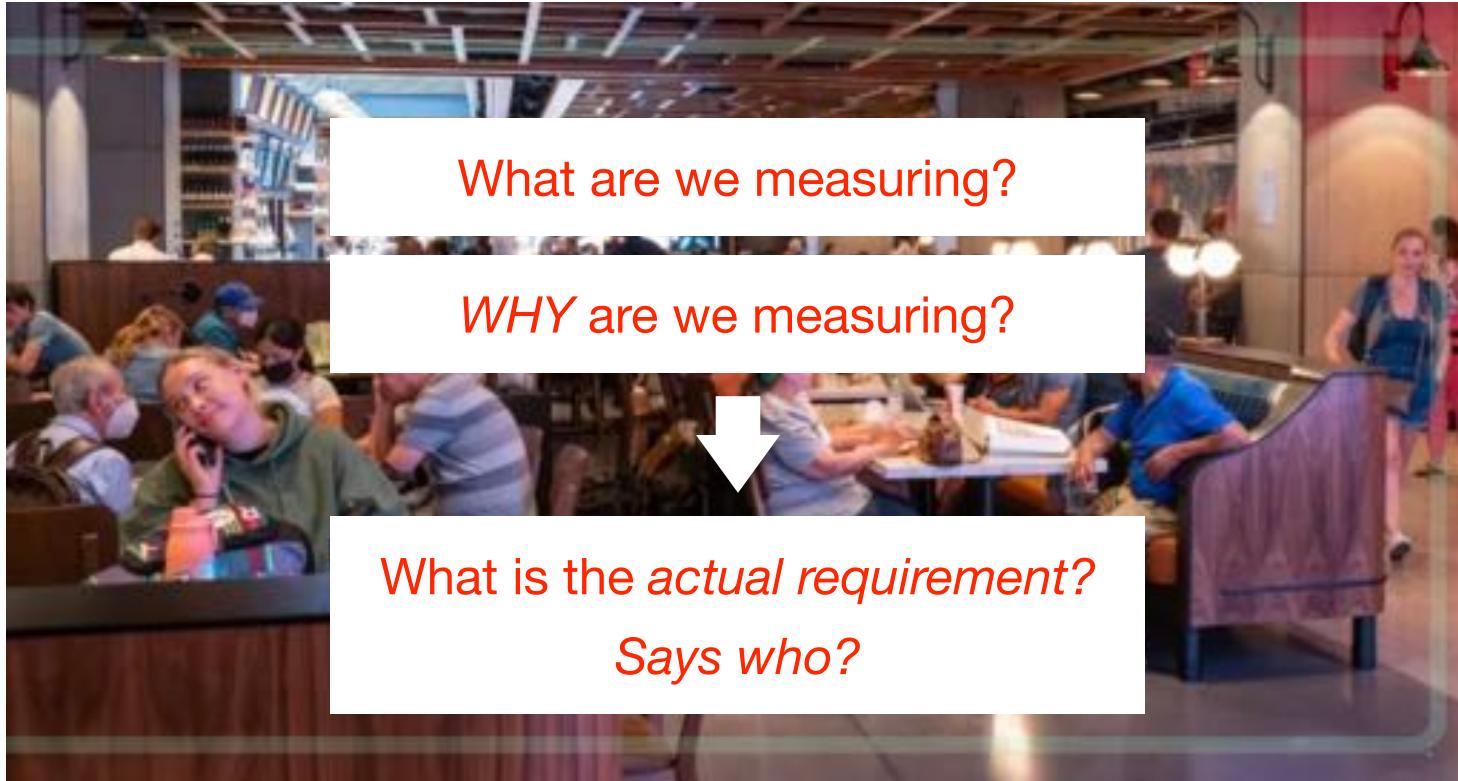


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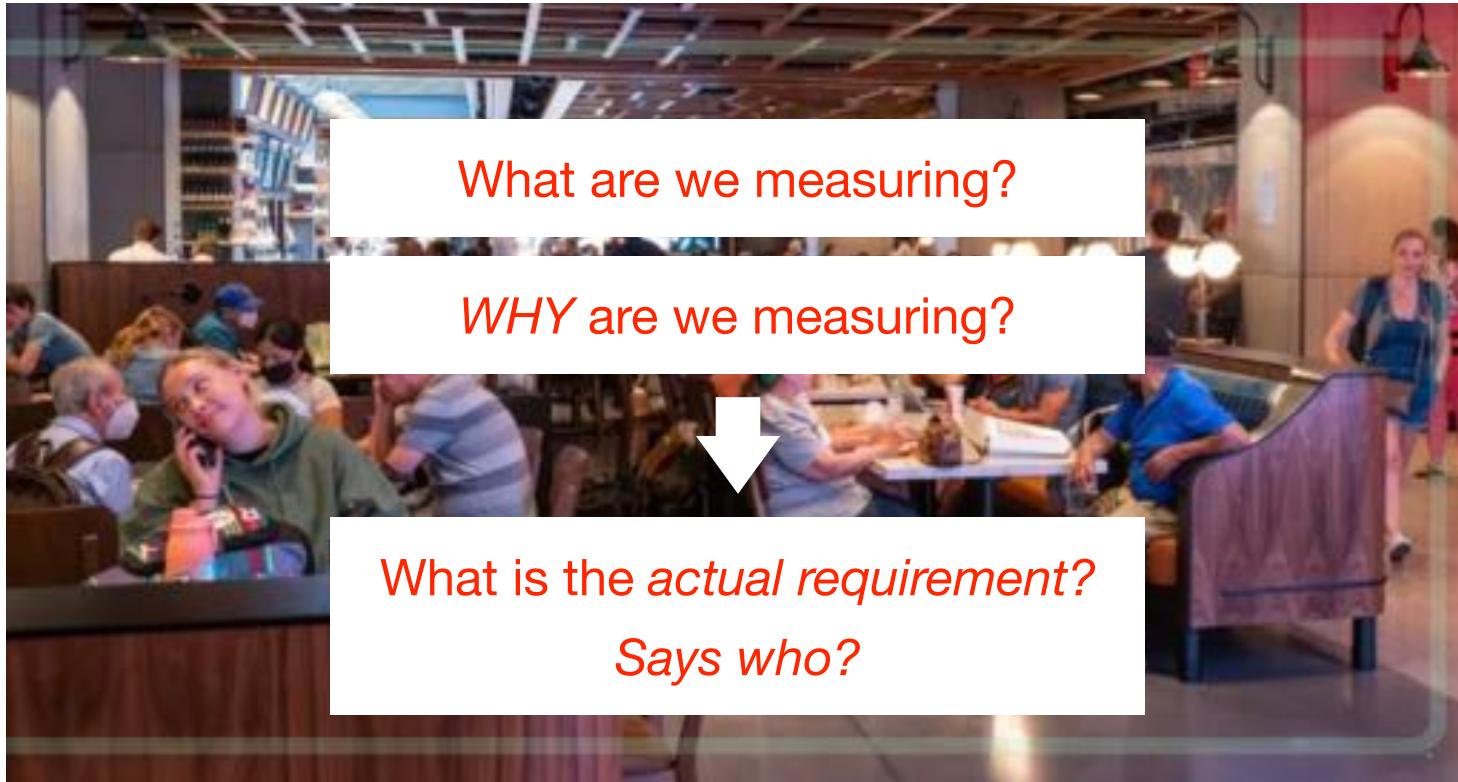


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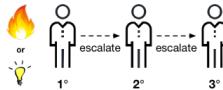


Operational definitions are everything...But most are lousy!

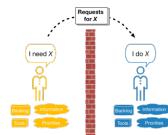
PagerDuty

7 Systemic Forces Undermining Operations

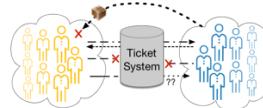
1. Low Trust



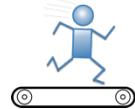
2. Silos



3. Ticket Queues



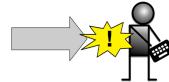
4. Toil



5. Coordination Costs



6. Unplanned Work



7. Imprecise Measurement



Let's talk!



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Let's talk!



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