

BEYOND THE RETROSPECTIVE: EMBRACING COMPLEXITY ON THE ROAD TOWARDS SERVICE OWNERSHIP

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INTUIT

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RELEASE ENGINEERING APPROACHES

DEVOPS ENTERPRISE SUMMIT, 2016

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- Director of Product Infrastructure Service Management at [Intuit](#)
- Director of Site Reliability Service Management at [Salesforce](#);
Business Continuity at [Yahoo](#)
- Geeks out on group dynamics and behavior
- @kfinnbraun on 

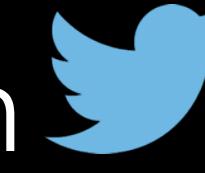
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@jpaulreed

J. PAUL REED

- @jpaulreed on 
- @shipshowpodcast alum 
- Managing Partner, Release Engineering Approaches
- A “DevOps Consultant™”
- Master’s Candidate in Human Factors & Systems Safety

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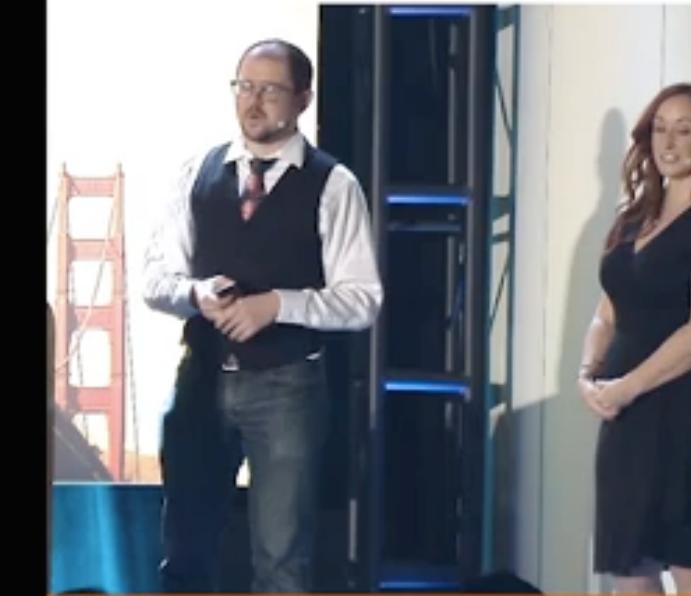
A QUICK RECAP FROM LAST DOES

SERVICE RELIABILITY HURDLES AT SFDC

- Inconsistent application of process, leading to inconsistent information collection
- Incident handling/remediation crossing silo boundaries
- Confusion over service ownership, due to restructured responsibilities
- Disjointed, “heavyweight” meetings
- Postmortems centered around “The Old View” of human error

DEVOPS
ENTERPRISE
SUMMIT 2015
 #DOES15

PRESENTED BY
 ElectricCloud  IT REVOLUTION



J. Paul Reed
Kevina Finn-Braun

“The Blameless Cloud: Bringing Actionable Retrospectives to SFDC”

@kfinnbraun

DOES 2015

@jpaulreed

NEW MARCHING ORDERS

DO
THE
~~DEAD~~
devOPS!

"SERVICE OWNERSHIP?"

IT'S JUST WHAT SFDC
CALLED "DEVOPS"

(SSHHH, DON'T TELL ANYONE)

WHICH FLAVOR OF DEVOPS WOULD YOU LIKE?



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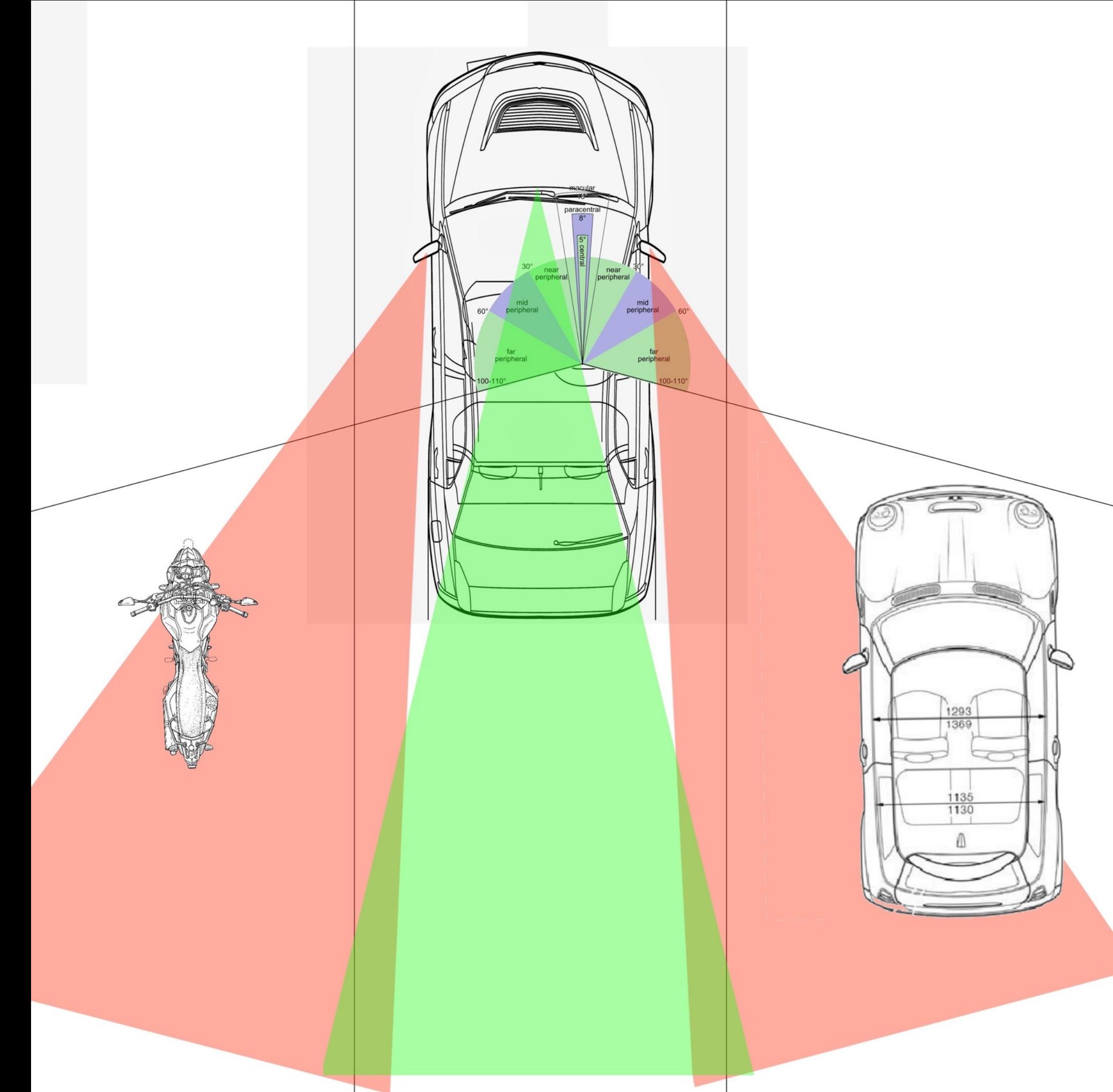
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"BUT HOW DO WE DO 'THE DEVOPS?'"

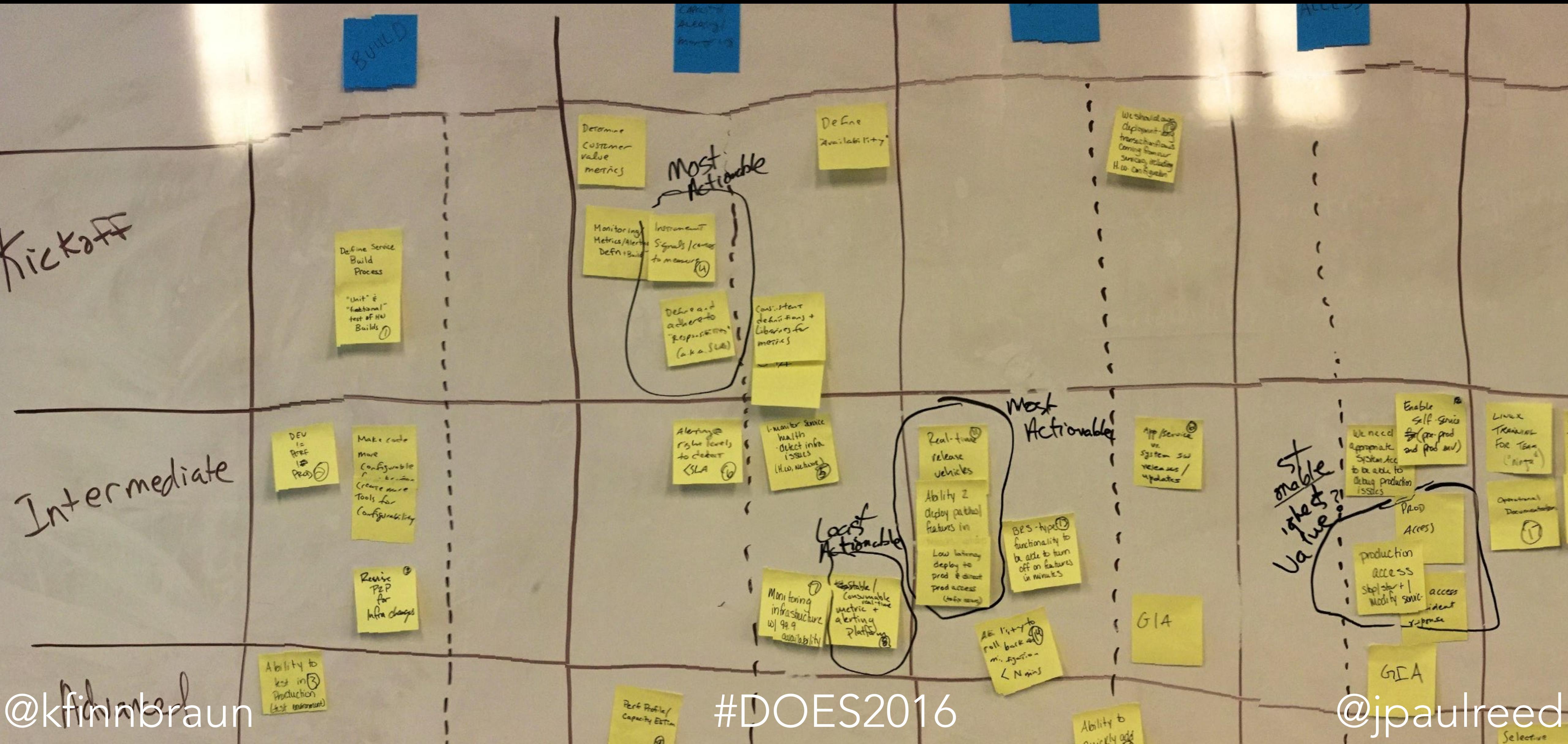
- Learned helplessness?
 - Uncontrollable bad event
 - Perceived lack of control
 - Generalized helpless behavior

"BUT HOW DO WE DO 'THE DEVOPS?' "

- Learned helplessness?
 - Uncontrollable bad event
 - Perceived lack of control
 - Generalized helpless behavior
 - Actually: Structural blindness

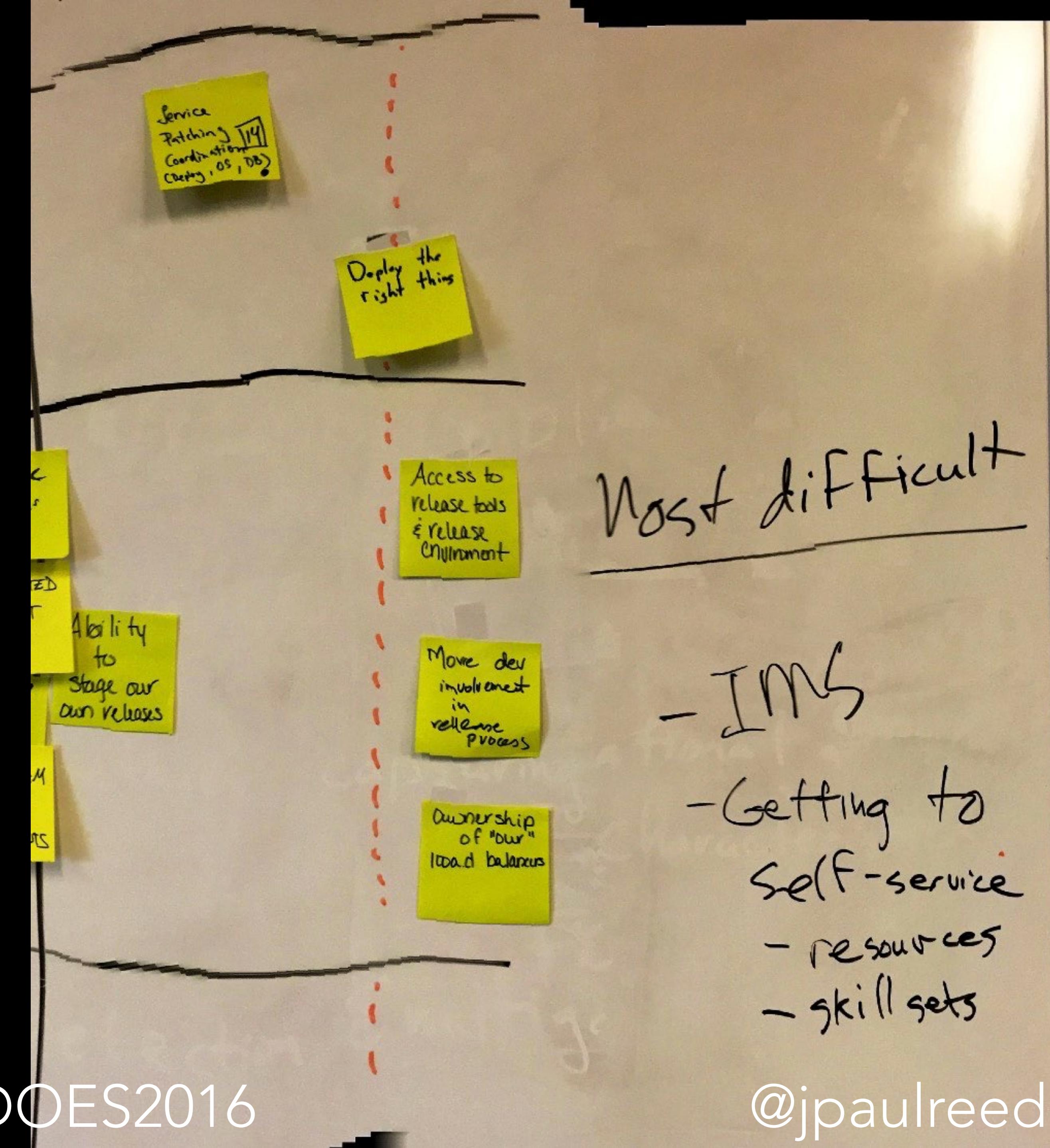


MAKING SENSE OF SERVICE OWNERSHIP

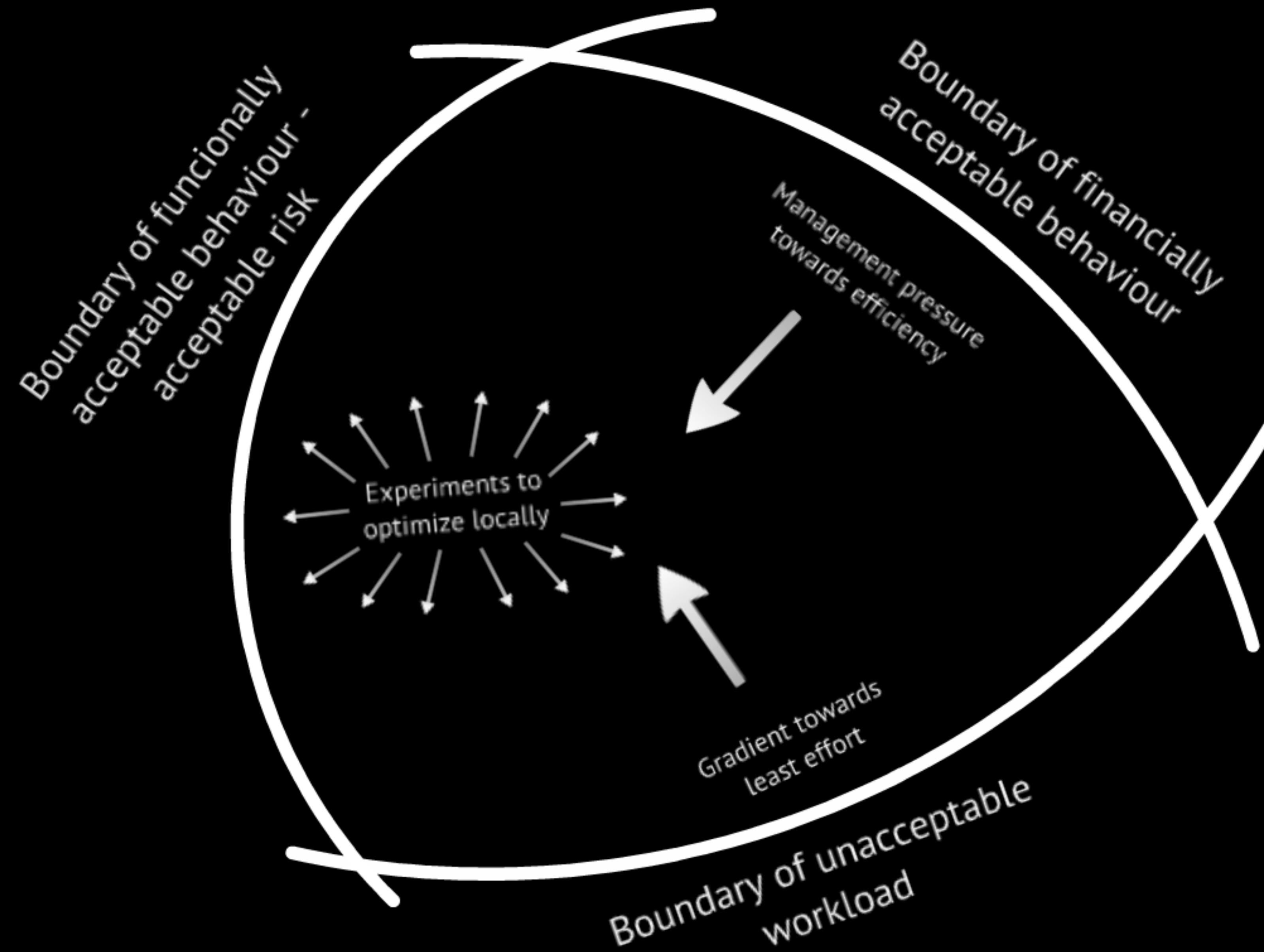


WORKSHOP SURPRISES!

- Understanding teams' local rationality is key
- Words have meaning; meanings are important; but they aren't necessarily shared
- Teams must be given space to deliver on transformations
- Teams can be "retrospective blind"



DEVOPS & NUCLEAR MELTDOWNS?



A NEW ADVENTURE



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A NEW ADVENTURE

Quickbooks

Founded: 1983

8,000 employees
worldwide



Mint



intuit®

FY 2016: \$4.7b revenue

TurboTax

IPO: 1993

Improving the financial lives of over 45 million customers

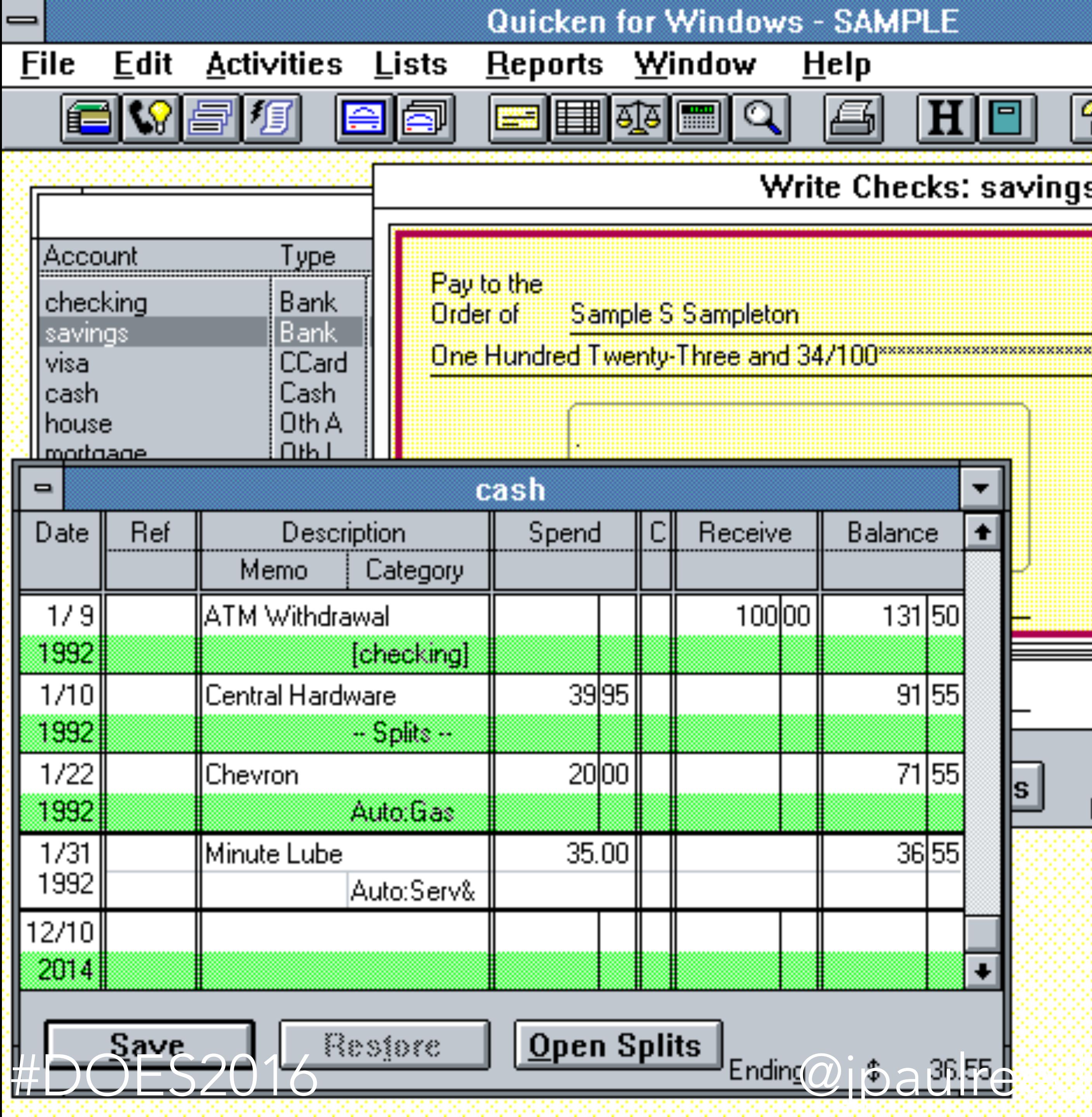
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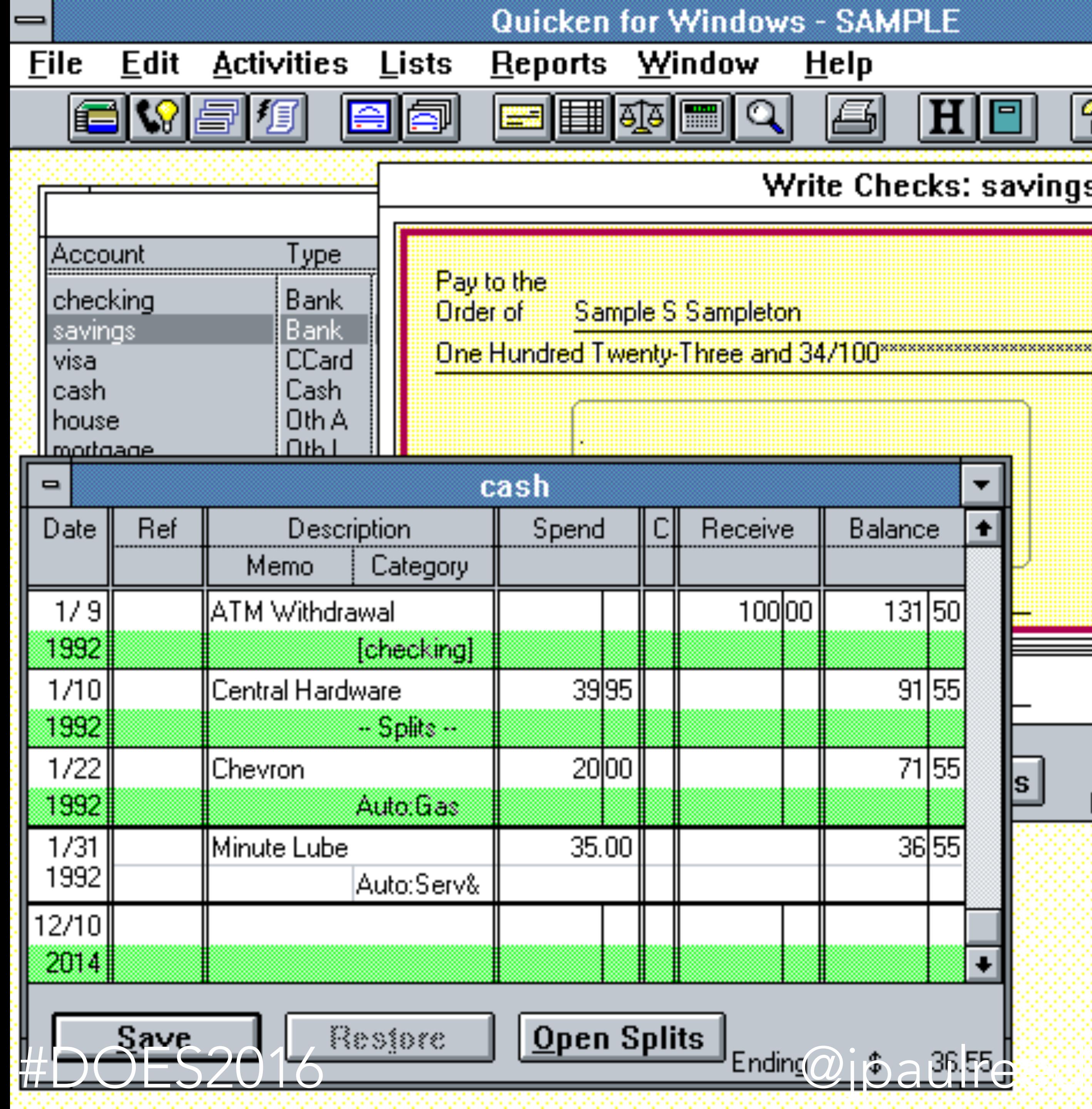
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- Intuit not “born in the cloud”



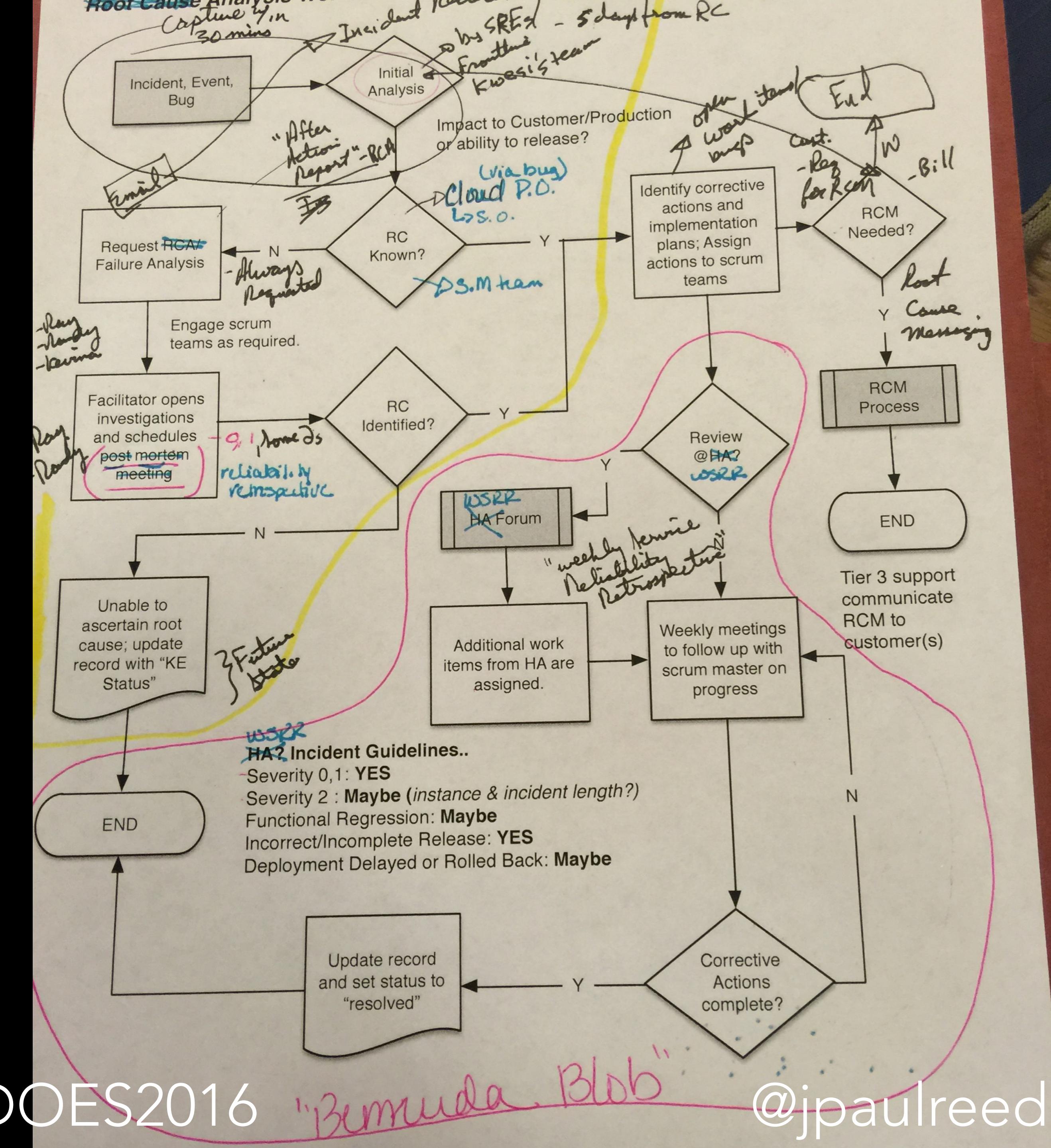
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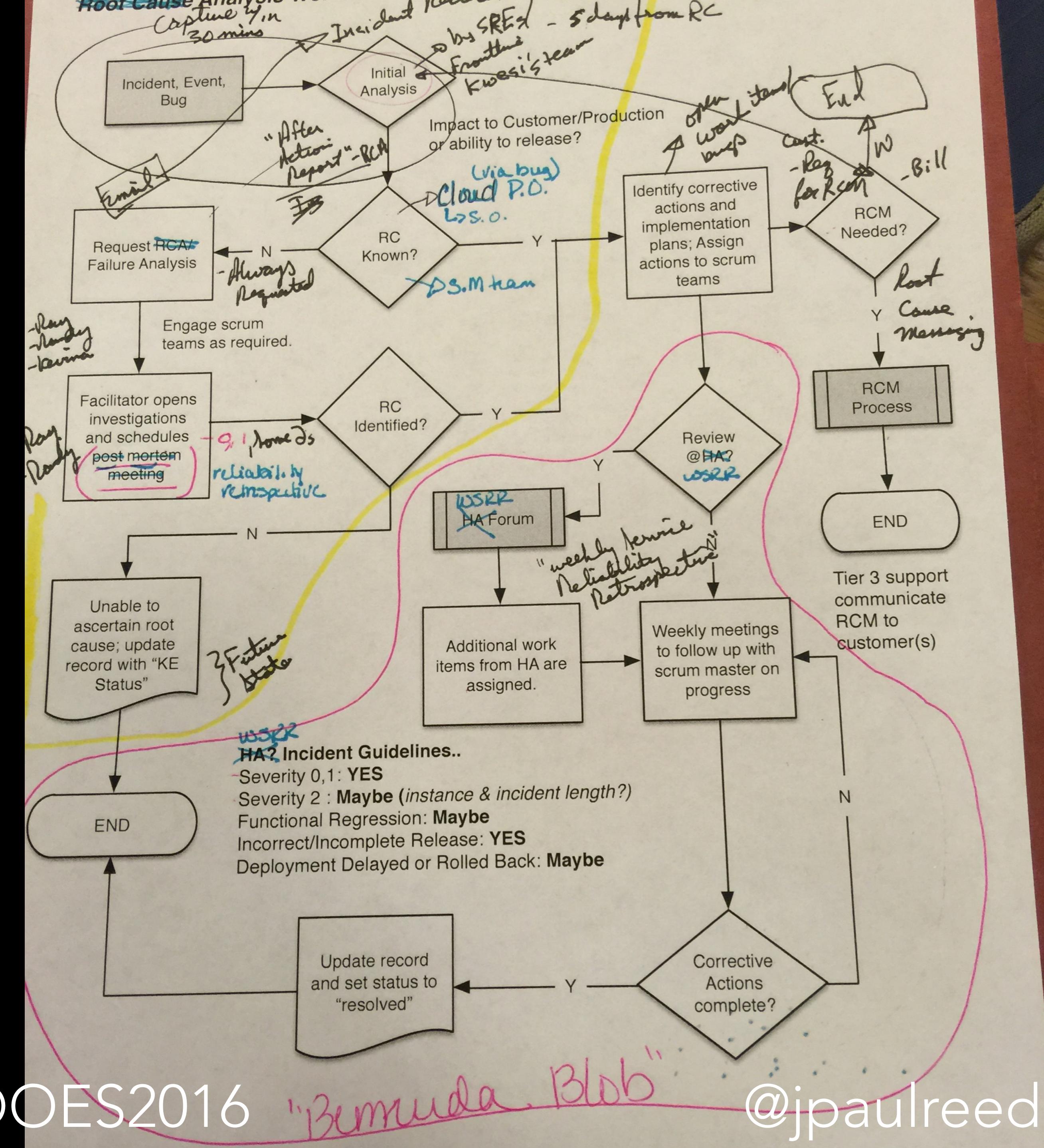
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- No "Bermuda Blob"



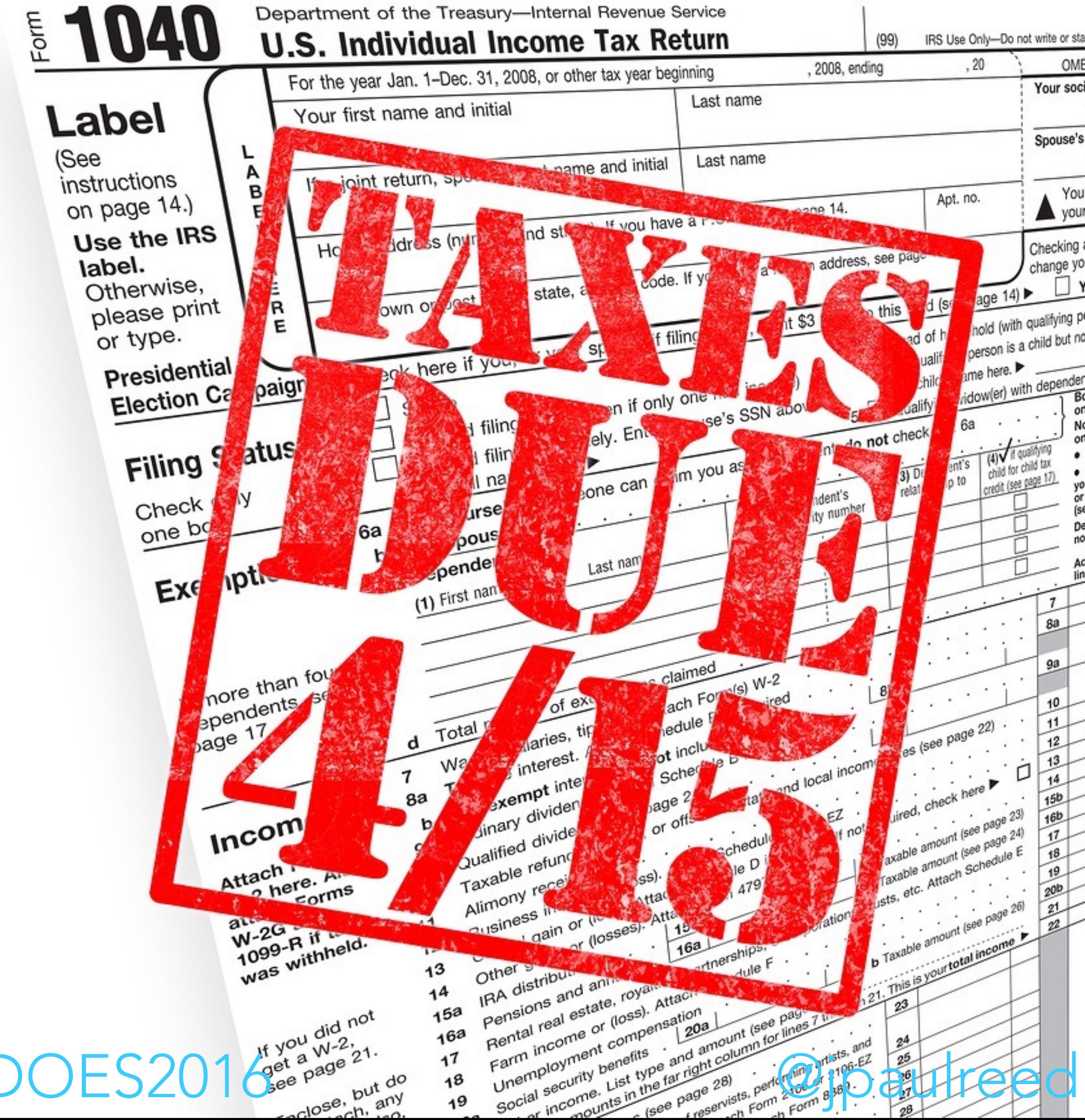
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 - (No blob at *all!*)



SOME DIFFERENT CHALLENGES

- Intuit not “born in the cloud”
 - “Incidents” meant something different
 - No “Bermuda Blob”
 - (No blob *at all!*)
 - Different business lifecycle



BUT SIMILAR CHALLENGES, TOO

- Inconsistencies in operational responses
- Postmortems centered around “The Old View” of human error
- Some incidents & remediations got lost in the shuffle
- Surprising amount of (aggregated) service impact due to P3s/P4s
- “What, exactly, is an ‘incident?’”

“BLAMELESS” “POSTMORTEMS”?

- Brené Brown, research sociologist, on **vulnerability**
- “Blame is a way to discharge **pain** and **discomfort**”
- Postmortem has a heavy **connotation**
- “**Awesome** postmortems?” Really?!
- More at: [http://jpaulreed.com/
blame-aware-postmortems](http://jpaulreed.com/blame-aware-postmortems)



Behaviors

Language

Novice

Beginner

Competent

Proficient

Expert



Behaviors

"Incidents are bad;
my job is on the line."

"I'm getting sent to **the
principal's office** because
of this outage."

Novice

Completes
the post-
incident
"paperwork."

Beginner

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Proficient

Expert

No formal retrospective/
hallway retrospectives.

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Identifies **inherent bias** in self and others.

Retrospective outcomes are **fed back into the system** and prioritized.

Able to facilitate retrospectives by **healthily helping others address tendency to blame/ personal & systemic bias.**

"What can we incorporate from this incident to **better respond next time?**"

"How does our team/system contribute to our **successes?**"

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Incident Analysis

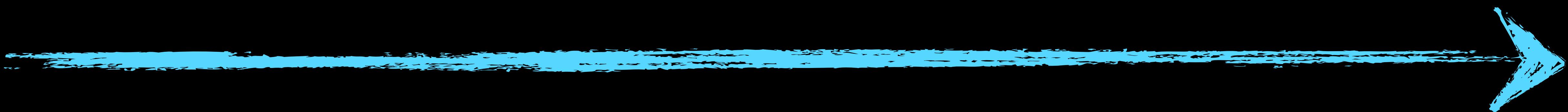
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THE INCIDENT LIFECYCLE



Incident Analysis
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INCIDENT DETECTION



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Language

"Problems with our service are **obvious**; outages are **obvious**."

"Most of the time, **we're the first to know** when a service is impacted."

"Other teams will notify us of any problems."

Novice

Behaviors

Manual and/or external outage **notifications**.

Notifications are **automated**.

External monitoring is in place to **detect real time service transitions**.

No baseline metrics/
service levels are broadly bucketed.

"We've detected **service level transitions** via monitoring and **reduced MTTD**."

"We use **historical data** to guess at service level changes."

Beginner

External **infra/API endpoints/outward-facing interfaces** monitored/recorded.

Historical data exists and has been used to **establish graduated service baselines**.

Competent

Application internals report data to the monitoring system.

Monitoring systems employ **deep statistical methods** to (dis)prove service anomalies.

Proficient

Anomalies **no longer result in defined "incidents."**

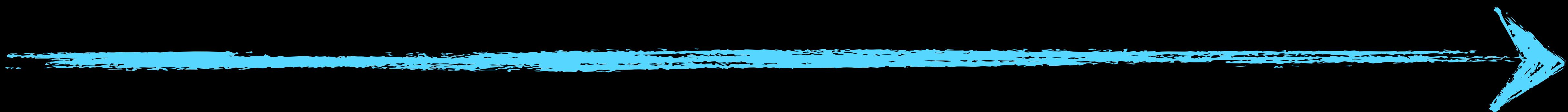
Expert

"I know which specific code/infra change caused this service level change; **here's how I know...**"

"We're not paged anymore for changes **automation can react to**."

"We've **decoupled code/infra deployment**, because we can roll back/forward."

INCIDENT RESPONSE



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Behaviors

Language

"Have you tried **turning it off and turning it on again?**"

"**Something is wrong** with the X..."

"I think X is familiar with Y; **let's find them.**"

"**I think there's a problem with** the database, network, etc."

Novice

Team is **event-focused**; the team is "alarmed" by incidents.

Response based on "**tribal knowledge.**"

Inconsistent response once incident has commenced.

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"The deployment caused the database to hang..."

Standard Incident Management System language used.

Beginner

Team is **area-focused.**

Team has identified incident "responders," and those people **know their duties.**

Inconsistent response

once incident has commenced.

Team is **action-focused.**

Team is **technology-focused.**

Incident response is an **aspect of org and team "culture."**

Competent

Entire team is **familiar** with **standardized** **IMS language.**

Team is **systems-focused.**

Incidents are **embraced**, but outside-business hours or repeated incidents are considered **inhumane.**

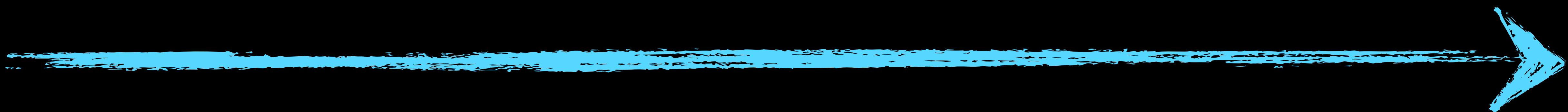
Proficient

"What parts of the service did not '**self-heal**' and **need attention**?"

Standardized IMS language is **used/valued** by the entire team.

Expert

INCIDENT ANALYSIS



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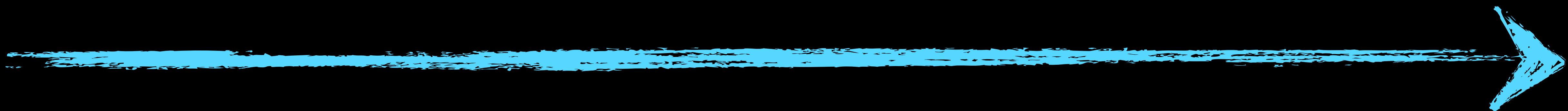
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INCIDENT REMEDIATION



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Language

"Let's **just file a ticket** to track the issue."

"I'm pretty sure **we already fixed this?**"

"I'm am sure this is the issue; the **fix will correct 100% of the occurrences.**"

"We need an **action plan** to address the **process gaps.**"

Novice

Remediation activities (or lack thereof) contribute to a "**break-fix**" cycle.

Discussions of the incident are **aggressive/blameful**.

Beginner

More **processes**, more **procedures**, more **rules**.

"Low hanging fruit" may be fixed, but **not documented or incorporated** into team behavior.

"We need to **look deeper than this specific incident** to really address the problem."

"This **needs to be fixed in the next release** and

documented in our incident response docs."

"What can we **learn from this incident?**"

"What **other system aspects** have we learned from this incident? How can we use that?"

Competent

Issues of all sizes are **actively managed**.

Issues have a priority and **teams not documented or have bandwidth** to address them.

Completed issue **remediation is valued by the org.**

Bandwidth exists to discuss, design and implement **resiliency improvements**.

Proficient

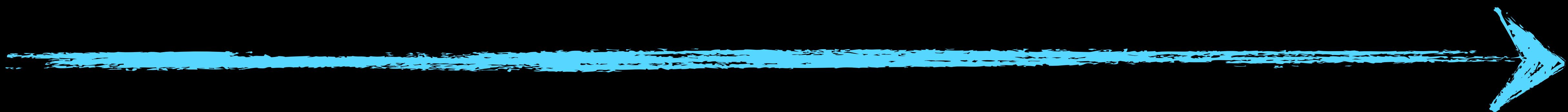
Resilience is considered in the **design phase** for new infra/software.

Remediation is not regarded as a separate activity & is culturally integrated into work.

Expert

"While operating our system today, **how did we actively create & sustain success?**"

INCIDENT PREVENTION*



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Language

"Preventing future incidents is difficult because of **lacking data.**"

"We can use predictive metrics to **completely avoid future incidents.**"

Novice

Behaviors

Prevention efforts include **documentation, process design, metrics collection.**

Retrospectives include discussions

of **active operator behaviors.**

Retrospective focus is on **static causes/effects.**

"**Old documentation** is problematic and **dealt with** accordingly."

"Our system has **reasonable coverage** of its metrics."

"We use metrics to **inform attack/risk surface.**"

Beginner

Docs, process, metrics **established,**

but < 100%. Retrospectives focus on the **response of the team** to an incident.

Preventative focus is on reviewing **docs+process+**

metrics collection, but in a day-to-day context.

Competent

"We use **trend analysis** to raise 'soft' problems to operators."

"When we started game days, **it was a real mess.**" "We now **care less about specific incidents** & more about **crew formation.**"

Proficient

We **actively inject failure** into our systems on a known **schedule**, to drill. The **crew formation/dissolution**

We review our response to **induced failures.**

We **actively inject failure** at **random** intervals. The **crew formation/dissolution** process is considered our **primary role+responsibility** in addressing and preventing operational failure

"Our **crews care** about their formation and dissolution."

"The team is **excited** about game days."

HELP US MAKE IT BETTER!

preed / incident-lifecycle-model

A lifecycle model for describing incident management

5 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Find file Clone or download

Since this repo should only contain markdown files, .gitignore every... 2 days ago

.gitignore Since this repo should only contain markdown files, .gitignore every... 2 days ago

1-incident-detection.md Rename the matrix files so they appear in the intended order. 2 days ago

2-incident-response.md Rename the matrix files so they appear in the intended order. 2 days ago

3-incident-analysis.md Rename the matrix files so they appear in the intended order. 2 days ago

4-incident-remediation.md Rename the matrix files so they appear in the intended order. 2 days ago

5-incident-prevention.md Rename the matrix files so they appear in the intended order. 2 days ago

README.md Add README. 2 days ago

Extended Dreyfus Model for Incident Lifecycles

<https://github.com/preed/incident-lifecycle-model>

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FACILITATE TEAMS EXPLORING
THEIR DISCRETIONARY SPACE

INCIDENT RESPONSE !=
INCIDENT MANAGEMENT

INCIDENT RESPONSE !=
INCIDENT MANAGEMENT
(YOUR INCIDENT VALUE STREAM
MATTERS)

YOU ARE NEVER DONE.

YOU. ARE. NEVER. DONE.

@kfinnbraun

#DOES2016

@jpaulreed

AVENUES FOR COLLABORATION

- Take a look at the extended incident lifecycle model and your organization: see where it fits and doesn't!
- (And then send us Github pull requests!)
- Compare your own (documented?) incident life cycle against your actual incident value stream; share what you find!



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