LEARNING FROM INCIDENTS

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DEVOPS TALKS CONFERENCE
Seek today...

1997

#1 Jobs Site

Stuff breaks...

...we should expect it to
Content

Why would you do that???

5 x WHY? = RCA!!

Resilience Engineering
About 6 years ago
When it came to incident learning
In the year 2019

DevOps as a Culture

Our environment became much more complex....

...our ability to adapt and learn from failure did not keep up
Handling incidents starts to change

Complexity hasn't gone away....
...we've just moved it
Increased integration points
+ tight & loose couplings
+ localised decision making

= Emergent Behaviours

January 2017

10K Customers
18 hours of outage
one day in May 2017...
one day in May 2017...

12 hours of continuous outage!

Seriously!!

WTF!!!
Safety Incident Management 1.0

Incident Post-mortems
Focused heavily on the root cause
Encouraged to use 5 whys

"How could you not have noticed that?"

"But isn't that the way it should work?"

Hindsight bias
Weekly Incident Review...

"we don't want this... ...to be too comfortable"

Localised

IN  OUT

Reliable?
...not really

Things that do NOT predict how your org is learning from incidents:
- frequency of incidents
- length of incidents
- customer impact of incidents

1:52 AM · Jul 2, 2019 · Twitter for iPhone
What about...
Management of work

The Principles of Scientific Management (1911)

"unpredictable"
"inefficient"
"untrustworthy"

Frederick Winslow Taylor

WORK-AS-IMAGINED = WORK-AS-DONE
Lines of code
day

Business Process
Use Case
Development
System Test
System Integration Test
User Acceptance Test
Pre-Production Test
Post-Production Test
Linear Thinking

Chain of events
Isolate down to a single origin of failure
1:1 Cause and Effect

Human Error!

Five Whys
Root Cause Analysis

1950's
60 years later...
Modern complexity

1500+ 1000+ 200+ 4600+

~160 +2K 30+

API or Event driven
Loose or tightly coupled
Change can be unpredictable
Not all integrations are known!
RCA fails complex system learnings
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ROOT CAUSE!

???

???

???
What are we observing?

- Localised management as complexity grows
- Evolve independently, do not resemble assembly lines
- Expensive, slow, trivialises failure
Improving incident learning

BEFORE
Deadline pressure
Fatigue.
Communications, etc..

AFTER
Anxiety
Stress
Happy?

Pathological
Bureaucratic
Generative
The Post-Mortem

- Contributing factors
- Timelines
- Patterns
- Themes
- Focus areas
- Support & assistance

Facilitator
Scribe
Realising value

Build Automation
Logging
Edge Networking
Improved understanding

Complexity does not decrease
Feedback loops can sometimes be unintended
Emergent incidents are a reality

Are the flexible and adaptable parts of the system
We have to trust and support them

And this will lead us to...
Resilience Engineering
Sustained Adaptive Capacity

It is both a field and a community, with origins in multiple disciplines

It is what your organisation does. Not what it has.
Understanding Resiliency

The natural world has plenty of examples

Unforseen event!!!

Australian Gum Tree

Osteoclasts
Osteoblasts
Osteocytes
You can’t wait for resilience to evolve naturally. It must become an on-going practice.

Create conditions and environments where teams can sustain adaptive capacity - wherever the work-is-done.

Learn from incidents as much as possible. They are normal by-products of building complex systems. Use them.

Seek to understand the intimate interactions between people and technology. Don’t isolate them as separate challenges.

Learn from Safety-2 thinking. Focus and promote what you do well. Sustain and grow the learning culture.
Resilience Engineering
Sustained Adaptive Capacity

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It is what your organisation **does**. Not what it **has**.

Thank you

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