Familiar Smells I’ve Detected in Your Systems Engineering Organization… and How to Fix Them

Dave Mangot
@davemangot
Familiar Smells I’ve Detected in Your Systems Engineering Organization… and How to Fix Them

Dave Mangot
@davemangot
About Me

20+ years in systems engineering, have led DevOps and Systems Engineering transformations at multiple companies

Big companies: Cable & Wireless, Salesforce, SolarWinds

Small Companies: Terracotta, Tagged, Librato

International DevOps contributor
I've got, so much trouble in my mind...
Dat darn pager
The road to hell is paved with short term projects that never died

Outsourced Ops

Low Performers are 3.9x more likely to use functional outsourcing @nicolefv @jezhumble #DOES18

Outsourcing drives poor SDO performance
- Low performers are 3.9x more likely to use functional outsourcing (dev, test & QA or ops)
- The costs of bungling up work often exceed any cost savings from outsourcing
Don’t Fix Problems
Solve Them
Crawl - Walk - Run
Top N

```json
{
  "incidents": [
    {
      "id": "PT4KHLK",
      "type": "incident",
      "summary": "[1234] The server is on fire.",
      "self": "https://api.pagerduty.com/incidents/PT4KHLK",
      "html_url": "https://subdomain.pagerduty.com/incidents/PT4KHLK",
      "incident_number": 1234,
      "created_at": "2015-10-06T21:30:42Z",
      "status": "resolved",
      "title": "The server is on fire.",
      "pending_actions": [
        {
          "type": "unacknowledge",
          "at": "2015-11-10T01:02:32Z"
        },
        {
          "type": "resolve",
          "at": "2015-11-10T04:31:52Z"
        }
      ],
      "incident_key": "baf7cf21b1da41b4b022100083394357",
      "service": {
        "id": "PI390N7",
        "type": "generic_email",
        "summary": "My Mail Service",
        "self": "https://api.pagerduty.com/services/PI390N7",
        "html_url": "https://subdomain.pagerduty.com/services/PI390N7"
      },
      "priority": {
        "id": "PS32ZH5",
        "type": "priority_reference",
        "summary": "P2",
        "self": "https://api.pagerduty.com/priorities/PS32ZH5",
        "html_url": "null"
      }
    }
  ]
}```
Conway’s Law - Eng/Ops

- VP of Architecture
- VP of Engineering
- VP of Operations
Follow the Sun

You must be this tall…
I've got, so much trouble in my mind…

Sir Joe Quarterman & Free Soul - I've Got So Much Trouble On My Mind - https://www.youtube.com/watch?v=0sZedHraIIY
Untested Infrastructure
Run Books (procedural)

DON'T DO IT!
Change Control
Crawl - Walk - Run
Infra Unit Tests

- Rspec/Test Kitchen
- ServerSpec
- https://goss.rocks
Tests in Staging

• Stage is like prod
• Stage is like prod
• Stage is like prod
Automated Deployment

- Dark Launches / Feature Flags
- Canaries
- Blue Green Deploys
- Cfg Management (stateful tiers)
I've got, so much trouble in my mind…

Sir Joe Quarterman & Free Soul - I've Got So Much Trouble On My Mind - https://www.youtube.com/watch?v=0sZedHraiY
Boring Technology
Dave Mangot
@davemangot

"We should generally pick the smallest set of tech that covers our problem domain, and lets us get the job done." - @mcfunley
boringtechnology.club #Preach

5:27 PM - 17 Oct 2018
Avoiding Failure

- bonded network interfaces
- RAID cards
- SAN storage
“the problem with artificially suppressed volatility is not just that the system tends to become extremely fragile; it is that, at the same time, it exhibits no visible risks... These artificially constrained systems become prone to Black Swans. Such environments eventually experience massive blowups... catching everyone off guard and undoing years of stability or, in almost all cases, ending up far worse than they were in their initial volatile state” (p105). - Nassim Taleb

https://continuousdelivery.com/2013/01/on-antifragility-in-systems-and-organizational-architecture/
MTTR > MTBF

'So instead of trying to prevent errors, optimize for a relatively frequent occurrence of low-impact errors. “Failure free operations require experience with failure.” For infrequently occurring errors, this means we need to induce them.' - Aaron Blohowiak

https://www.linkedin.com/pulse/reliability-works-aaron-blohowiak/?published=t
Crawl - Walk - Run
Configure With Code
Production Readiness Gameday

Checklist

- Yes
- No
Chaos Engineering isn't done to cause problems; it is done to reveal them.
Crawl - Walk - Run
Stage is like prod (x 3)
Choose Your Incentives!
Questions?

@davemangot