The path to operational maturity
How to become a change agent and break down dev and ops silos

Ryan Taylor, VP of Customer Success & Solutions Engineering at Transposit
Digital services have reached criticality

Fastly revenue falls due to outage, CDN loses major customer
Impact expected to be felt across the whole year

August 05, 2021 By: Sebastian Moss Be the first to comment

Facebook, WhatsApp and Instagram ALL go down in huge worldwide outage

Facebook, WhatsApp and Instagram have all gone down in a huge outage that has hit users worldwide today.

By DION DASSANAYAKE

Comcast admits “widespread” outage as tens of thousands of users report problems

Large outages reported in Chicago, Philadelphia, New Jersey, and San Francisco.

JON BRODKIN - 11/9/2021, 8:34 AM

Amazon's likely multimillion-dollar disaster on Prime Day proved it's not immune from embarrassment

Dennis Green Dec 14, 2018, 6:50 AM

Holiday hell as British Airways has another IT meltdown and 500 flights are axed over weekend

By DAVID CHURCHILL TRANSPORT EDITOR FOR THE DAILY MAIL
PUBLISHED: 18:15 EDT, 27 February 2022 | UPDATED: 04:02 EDT, 28 February 2022
Customers pay for uptime. Companies pay for downtime.

- Cost of downtime for large enterprises: $300K per hour
- Increase in service incidents that affected customers: 63%
- Incidents take longer to resolve: 52%
- Cost of downtime has increased: 68%
- 1+ full time engineer building custom in-house tools & bots for automation: 39%
- Do not have all their tools integrated through platform: 63%
- Increasing focus on SRE practices: 76%
- SREs that cited decrease or no change in incidents said it was because they implemented automation: 100%

Gartner, The Cost of Downtime
Transposit, The State of DevOps Automation Report 2022
Cultural & technological shifts must be made
Challenges hinder organizations’ ability to reach operational maturity

- **Silos between teams**
  Lack of collaboration between dev, sec, ops, and eng

- **Multiple systems of record**
  A matrix of disconnected systems, workflows and glue code

- **Manual comms and process**
  Coordination wastes time and leaves stakeholders uninformed

- **Dev resource strain**
  Not enough devs or too much time spent building in-house
What is operational maturity?

Operations is not a team, but a responsibility.

Operations is present at every stage of the product lifecycle.

Failure is decoupled from incident.
Stages of operational maturity

**REACTIVE**

“We are seeing some timeouts, is something going on with the network?”
- Customers are the monitoring
- Failure has unknown consequences
- Getting out of reactive requires a “divide and conquer” strategy

**PREVENTIVE**

“We’re seeing timeouts in DC1. We’re moving 100% of traffic to DC2. Latency appears to be related to something downstream.”
- Mitigation steps documented and rehearsed
- More self-aware and quicker
- Start to create shared responsibility between eng, security, & ops

**PREDICTIVE**

“Auto-scaling is tuned to handle normal traffic. If higher than expected, we will have load shedding and circuit breakers.”
- Reached operational maturity
- Failure anticipated & testing for failure
- Alerts trend on possible fail, predictive insight

**SELF-HEALING**

“Monitoring discovered latency for a core service, auto-scaling executed. Performance is showing normal. Based on number of requests, we will scale down automatically.”
- Chaos Engineering becomes commonplace
- Failure predicted and mitigated before incident
- Surprises are rare
My Path to Operational Maturity

Where are you in your automation journey?

Level 1: Data & knowledge unification

- Connect tools and services across any environment
- Codify incident process

Level 2: Incremental, human-in-the-loop automation

- Automate incident management
- Create simple service request workflows

Level 3: Data-centric analysis and improvement

- Use insights and analytics to improve and expand automation
- Deeper partnership

Level 4: Auto-remediation & self-service

- Build more complex automations:
  - Self-service infrastructure
  - Auto-remediation

Self-healing

Reactive
Best practices and solutions to driving operational maturity, today.
Enable Human-in-the-Loop Automation

- Teams incrementally automate processes, keeping humans in the loop to use judgment and context.
- When repeatable tasks become an afterthought, teams use the same principles to automate more complex workflows.
- Identity and security are baked into processes to ensure governance and auditability.

Best Practices

- Take an incremental approach: Start small and build up to more complex automations
- Make it human-centric: Reduce toil & accelerate response with human- and machine-triggered scripts
- Lean into low-code: Empower anyone to automate & customize workflows


**Enhance Cross-Team Collaboration**

- Draw on common operational services when possible.
- Dev, sec, ops, and eng share process, communications plan, data, and remediation.
- Platform services perform at the same level as a SaaS service.

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**Best Practices**

- **Ensure shared context in chat**
  
  Pull in data and take action from Slack or Teams.

- **A single source of truthiness**

  Ensure data is up to date and accurate across tools and systems

- **Trust and verify**

  Ensure governance through "trust and verify" rather than "command and control"
Develop Continuous Feedback Loops

- Use human and machine data to continuously improve processes, services, and customer experience.
- Teams seek customer feedback and have the ability to drive improvement across the organization.
- Teams use data from previous events to tackle future incidents.

Best Practices

Auto-record human + machine data
Use automatic timelines to review the effectiveness of processes

Context is key
Understand full context of past incidents to use in future incidents and to investigate root causes and prevent future failure.

Create advocacy role
Focuses on acquiring feedback to improve services and provide best practices across teams
Balance Engineering Skill Set With Self-Service

Best Practices

- Invest in engineering training to ensure operations teams have the engineering skills to customize, operate, and maintain complex systems.
- Engineers build platforms that enable non-engineers to build and operate processes autonomously.
- Buy for industry standards and build for the gaps

Low-code + dev platform
Enable everyone across operations to automate processes. Customize in common coding languages.

Make self-service user friendly
Create an application layer that is accessible and usable by all

Workflows with guardrails
Use automation to reduce human error and ensure compliance
Learn more and request a demo at transposit.com