UNLEASH THE POWER OF LIMITLESS CONNECTIVITY
Operational Transformation

The Zen of Ticketing

Missy Wood
Sr. Director Program Management Reliability Engineering
Comcast
The Zen of Ticketing

Acquisitions, Patches, Management Shifts

Multiple layers of wallpaper on a wall

5, 10, 20 different ways....


Why does this matter?

"Cable" to Internet, Voice, Security, Wireless, Streaming

Product Growth
Network Topology Complexity
Consumer Expectations
Reliability Always
Security Protection
Scalability
Employee Processes

Continual upgrades to the network to provide more products and services

**Configuration Items**
- Multiple databases to store the same hardware and software infrastructure elements that need to be managed to ensure successful delivery of services
- User knowledge to derive relationships instead of computer intelligence
- Monitoring variances of configuration items provides a weak spots on correlation
- Lack of ability to link “Parent” and “Child” tickets to understand the root area driving the impairment and how they link

**Network Impacts**
- Inflation in number of tickets recorded for an outage can delay mitigation, resolution, and communication to internal and external stakeholders
- Manual impact assessment across Change and Incident tickets
- Swivel chair operations create lag for engineers to manually look up needed information to solve an outage
- Swivel from one ticketing system to another to support varying tools and processes across teams
Developing the Zen Strategy

- Create a shared vision for your organization
- Utilize best practices others have adopted
- Identify a framework that best supports the vision of where you want to go
- Spend time on the current state to best land at the desired future state across people, process, and technology
- Collaboration is key between the team managing the change, and all stakeholder teams impacted
Blended approach drives innovation in an agile environment

ITIL – Information Technology Information Library

- Common best practices across operations teams for lifecycle management with policies, guidelines, and processes
- Common enterprise architecture layers of business (vision), data (CMDB), solution (ecosystem/connections), and technology (service delivery platform)

SRE – Site Reliability Engineering

- Self-service tools and automation scripts for traditional human work
- Managing risk and growth with software engineers driving automation across complex architectures
- Scale and reliability manage higher volume of changes within your network with SLOs/SLAs

Zen of Ticketing Analysis

SRE environment = more structural improvements, less error

Site Reliability Engineer

- Engineers build & design automated toolchains to deploy code
- Proactive attention vs. putting out fires
- Sustainability and operational resiliency for digital assets

Zen of Ticketing Analysis

Is it Worth It?

How have you been performing?
What improvements are needed?

Map current state to future state to define who, what, why, when, how and where
Implementation Plan

- Ensure team structure set in place to support architecture/ticketing improvements:
  - Executive sponsorship & core team
  - Product development lifecycle
  - Stakeholder identification and support

<table>
<thead>
<tr>
<th>Workstreams</th>
<th>Discovery (6 months)</th>
<th>Design (6 months)</th>
<th>Development (6 months)</th>
<th>Onboarding (6 months)</th>
<th>Going</th>
<th>Dependency</th>
<th>Risks</th>
<th>Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision, Goals &amp; Benefits</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ITIL Service Strategy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Data/Process</td>
<td>Incident Management</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Configuration Management Database</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>On-Call Scheduling</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Problem Management</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change Management</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Technology</td>
<td>Core Platform</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Integrations</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Middleware</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Iterative, agile development lifecycle
- Phases cross discovery, design, development and onboarding
  - Collaboration with stakeholders
  - Architecture viewpoints drive future state
  - Determine realistic development time across process, technology and people changes
  - People readiness will vary by group (communication/training)
Lessons Learned and Pro Tips

What we know now

• Have a clear objective, goal and timeline – be sensitive to tools and processes that were curated over the past 20 years!
• Take the time to build a solid configuration management database (CMDB) to develop automation, understand impact, and drive correlation
• Build governance for who maintains CMDB and data quality processes
• Call it ticketing!
• Align product and process upfront – the process drives implementation not the tool driving the process
• Think through the bigger picture from a financial perspective – multi-year forecasting/budgeting to cover operational and capital expenditures
Moving Incident and Change into a single platform reduces swivel

Celebrate the Wins
- The processes to do ticketing are getting easier and are the same!
- Reduction of alerts removed “Eyes on Glass” monitoring
- Automated reporting became real
- Automated Incident tickets enabled fix agent to focus on resolution
- Automated Change tickets enabled more upgrades to the network
- Reduction and/or elimination of Tier I vendor support was made possible

Measure Success
- Mean Time to Mitigate and Resolve Incidents
- Change Success % (#number of changes executed/not executed flawlessly)
- Number of Changes Automated
- Number of Incidents Created Automatically from Event Management Logging and Correlation
- % of Time Team Spends in Reactive vs. Proactive Tasks Over X Time
Let’s keep the lights on!

- Reliability and scalability matter more today than ever
- Reliability is a core service, at a fundamental and strategic level
- Build your nirvana by learning from your past
- Understand your risks and threats, zen of ticketing and cybersecurity will help keep the interlopers out
- Intelligence about everything in the network provides topology understanding to automate remedial tasks

“Spend a little bit of time on Incident Management, police Change tickets that fall out from automation, and spend 80% of your time doing problem management to enable even more automation,”

~James Manchester, SVP of Core Platform Technologies
Thank You!

Missy Wood
Sr. Director Program Management Reliability Engineering
Comcast
Melissa_wood@cable.comcast.com, @719-491-0457