A fresh look at Operational Debt
Technical debt is insufficient

MY PROBLEMS

not technical debt

- processes
- policies
- behaviors
- third parties

technical debt

- code
- architecture
- apis
I’m thinking about

Risk

Availability
Availability is the customer experience
Solution: call stuff operational debt (but don't define it)

Technical debt

Operational debt
Examples

- Runbooks out of date
- Significant monitoring gaps
- Service catalog in disarray
- Can’t track third party providers for status, SLA
- Inconsistent contracts around API usage
Operational debt characteristics

- Process gaps
- MTTR risk
- High toil load
- Problem classes
Runbooks

- No update or audit process
- Outage recovery compromised
- Runbook updates after any outage and after process is fixed
- 10's to 100's of services, stateless and stateful
Prior definitions

Operational debt is...
the cost in money and time of working with deficient systems or processes

(says Clair Samuel and Sagi Eliyahu, thanks!)
Updated definition

Operational debt is... work required to fix process gaps that present a risk to business operations

(says me)
# Debt summary

<table>
<thead>
<tr>
<th>Type</th>
<th>Problem</th>
<th>Solution</th>
<th>Measure</th>
<th>Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>Funding gap</td>
<td>Change financial model</td>
<td>Money</td>
<td>Bank expenses &amp; profit</td>
</tr>
<tr>
<td>Technical</td>
<td>Functional gap</td>
<td>Change implementation</td>
<td>Code</td>
<td>Developer overhead</td>
</tr>
<tr>
<td>Operational</td>
<td>Process gap</td>
<td>Change or add process</td>
<td>Risk</td>
<td>Toil</td>
</tr>
</tbody>
</table>
The toil pile

time times toil
# Toil versus cost quadrants

<table>
<thead>
<tr>
<th>High cost</th>
<th>Small toil pile</th>
<th>Large toil pile</th>
</tr>
</thead>
<tbody>
<tr>
<td>defer</td>
<td>alligator v swamp</td>
<td></td>
</tr>
<tr>
<td>(perhaps forever?)</td>
<td>(may need intervention)</td>
<td></td>
</tr>
<tr>
<td>No brainer</td>
<td>Low hanging fruit</td>
<td></td>
</tr>
<tr>
<td>(but also, no pressure)</td>
<td>(also, quite rare)</td>
<td></td>
</tr>
</tbody>
</table>
Your SREs have unique resource constraints

- On-call emergencies
- Non on-call emergencies

It’s not like a normal scrum team
<table>
<thead>
<tr>
<th>Intentional</th>
<th>Unintentional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Careless</td>
<td>Defer work until future growth benchmark</td>
</tr>
<tr>
<td>We’ll use a brittle, manual workaround to hit the deadline</td>
<td></td>
</tr>
<tr>
<td>What’s a runbook?</td>
<td>We discovered it’s already in production</td>
</tr>
</tbody>
</table>
Practical applications ... backlogs

Create a backlog
Add risk & probability assessment
Run Pareto analysis on risk
Practical applications ... toil reduction

Add toil and completion date to backlog
Calculate toil pile
Sort by toil piles
<table>
<thead>
<tr>
<th></th>
<th>KNOWN</th>
<th>UNKNOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KNOWN</strong></td>
<td>we are aware that... we know these things</td>
<td>we are aware that... we don’t know these things</td>
</tr>
<tr>
<td><strong>UNKNOWN</strong></td>
<td>we aren’t aware that... we know these things</td>
<td>we aren’t aware that... we don’t know these things</td>
</tr>
</tbody>
</table>

Source: quadrants created and drawn by Dave Owczarek, inspired by Rumsfeldian logic
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Happy to collaborate

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