

Monitoring, Alerting, and Paging



A three-part guide to incurring human costs in engineering



Part I

"PEOPLE DON'T BUY **WHAT** YOU DO.

THEY BUY **WHY** YOU DO IT"

- SIMON SINEK

Size Matters

Dev

Product Line

Product Line

Product Line

Product Line

Devops

You

Devops

You

Information Security

- Application Security
- Compliance

Release Management

- SDLC Compliance
- CI/CD Pipeline
 - Config Management
 - Secrets Management
 - Build Systems

QA/Test Dev

- Application Testing
- Load Testing
- Chaos Testing

Infrastructure Engineering

- Cloud Platform Development
- Container Management & Orchestration

SRE/Operations

- Cloud Vendor Management
- Internal Tooling

Other People I Forgot Who Are Probably Offended

- Important Things
- Like, Lots of Important Things
- OMG So Many Important Things

Fully-integrated Devops is challenging at scale
because it incurs significant
knowledge overhead.

Empathy

COLLABORATION

Automation

Part II

I EAT MY PEAS WITH HONEY

I EAT MY PEAS WITH HONEY.

I'VE DONE IT ALL MY LIFE.

IT MAKES THE PEAS TASTE FUNNY,
BUT IT KEEPS THEM ON MY KNIFE.

I told my teenage niece to go get me a newspaper.

She laughed at me, and said, "Oh uncle you are so old. Just use my phone."

So I slammed her phone against the wall to kill a spider.



Birmingham screwdriver

English [\[edit \]](#)

Etymology [\[edit \]](#)

Humorously suggesting that people from Birmingham rely on the use of force to solve problems.

Noun [\[edit \]](#)

Birmingham screwdriver (*plural* **Birmingham screwdrivers**)

1. (*Britain, slang*) A hammer. [\[quotations ▼ \]](#)





Every tool is a hammer.

1. Using the right tool is important
2. Some tools are better than others at a given task, *despite similar appearances and other high-level abstractions*

urgency

data stream



Tool premise: real-time analysis of error logs



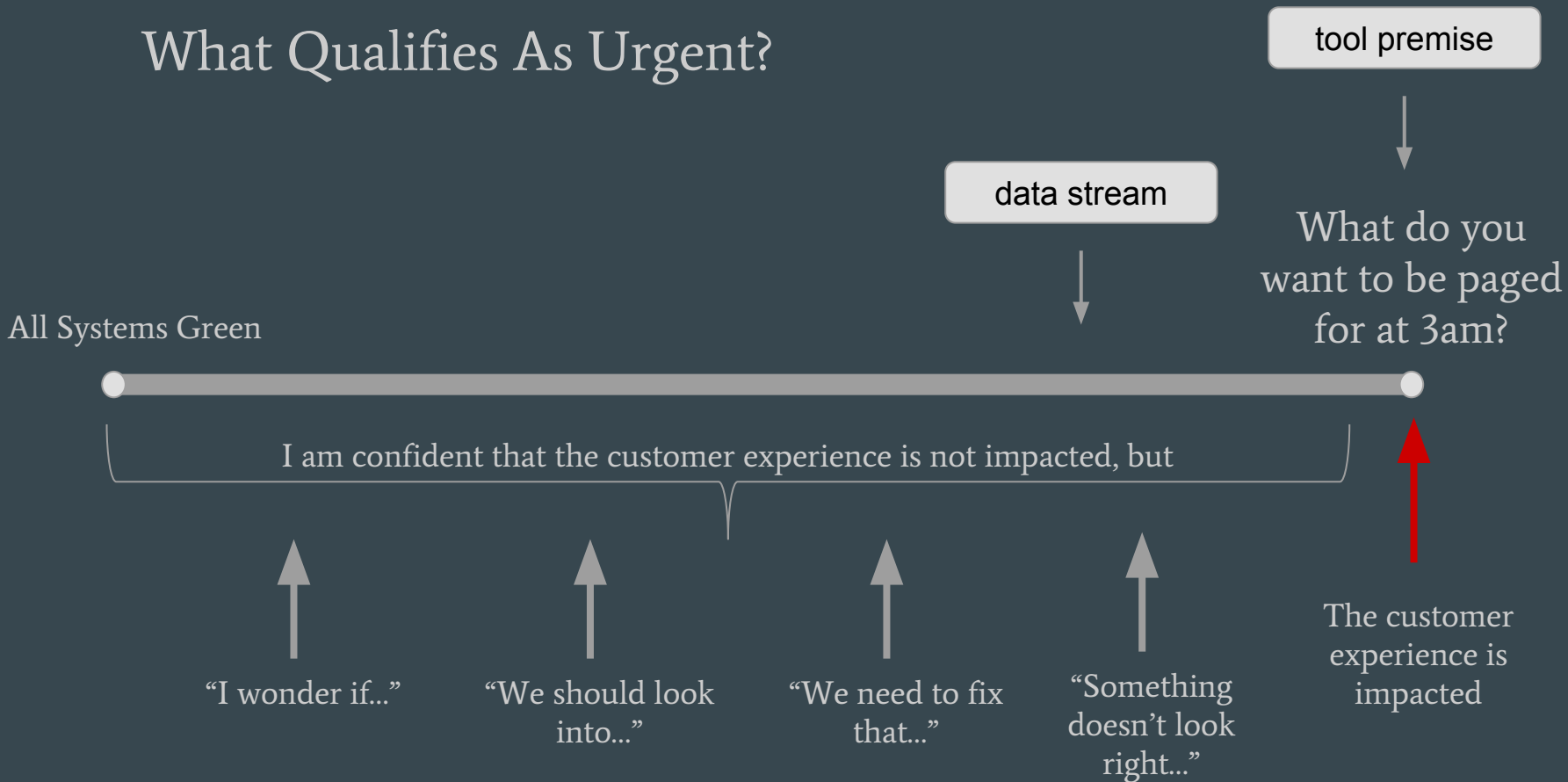
You have a
lunch date with
a good friend
next week. You
can't make it.

You and your
significant other
are expecting a
child. It's time.

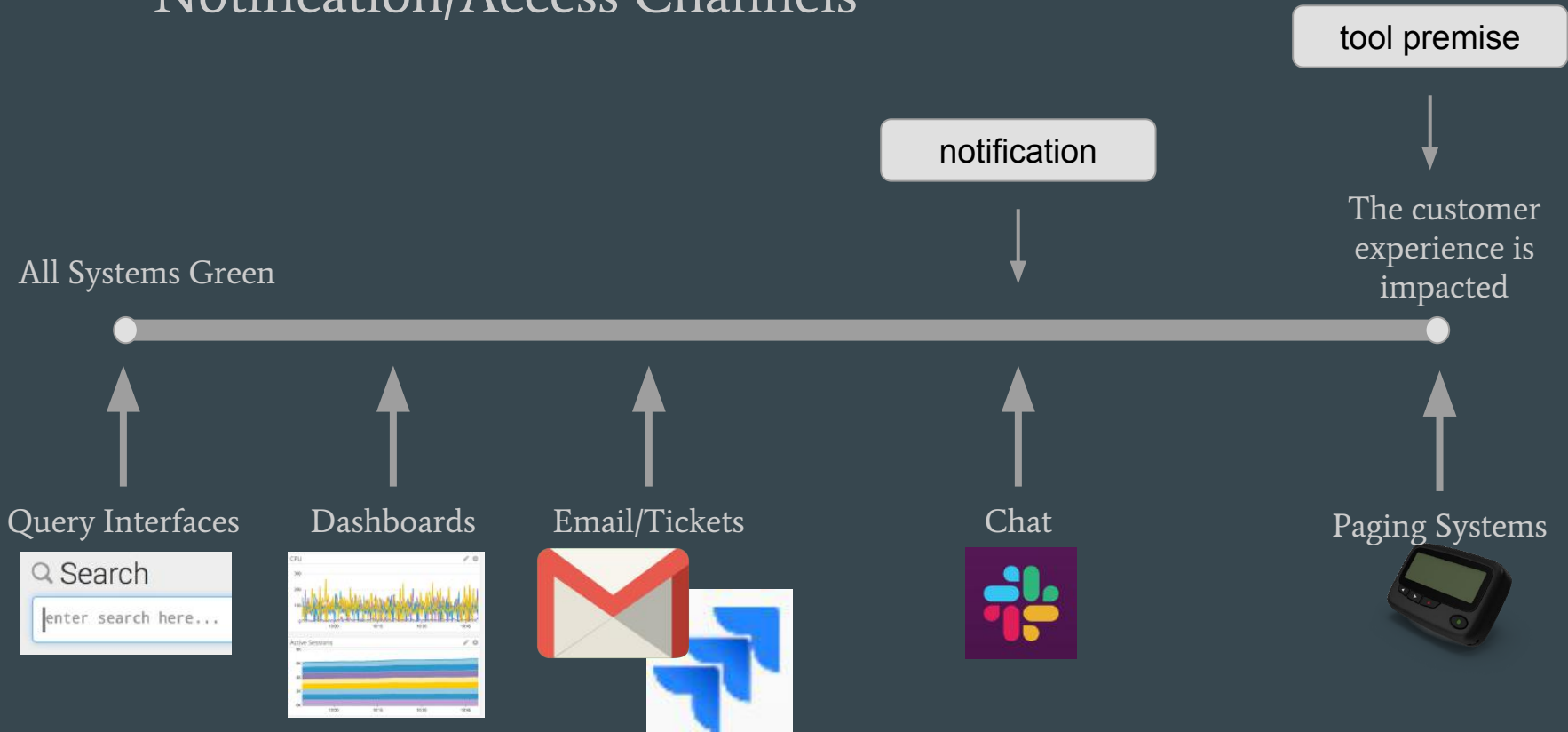
WOLF!!!



What Qualifies As Urgent?



Notification/Access Channels



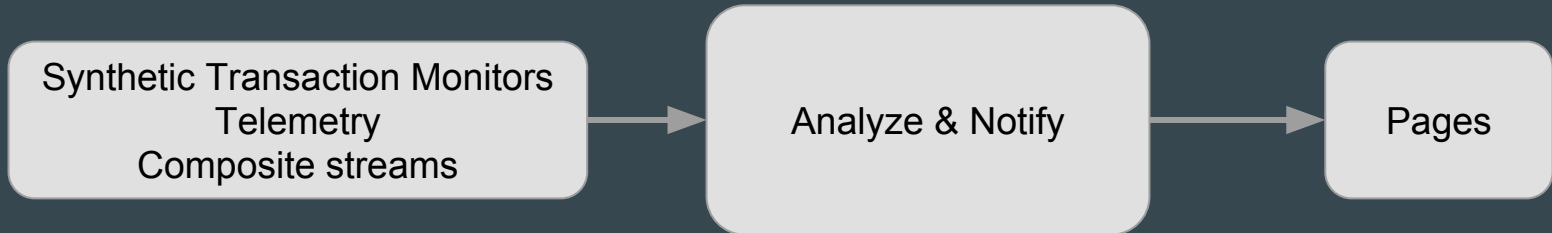
Option 1

Tool premise: analysis of error logs
Tool purpose: general quality iteration



Option 2

Tool premise: real-time analysis of service level
Tool purpose: crisis response and triage



Logs
Telemetry
Analytics
Tracing
Synthetic Monitors
Composite Streams

Data Streams

Query Interfaces
Dashboards
Emails
Tickets
Chats
Pages
Shock Collars

Access/Notification
Channels

Analysis Tools

Splunk
Datadog
Victorops (kind of)
Insight**
Signals**
Stackdriver
BigQuery/Data Studio

Use Cases

Product Research/Direction
General Dev/Debugging
General Quality Iteration
Performance Optimization
Crisis Response

This space is evolving.

Lesson #1:

Use tools. Use the right tools. Use
the right tools in the right way.



Lesson #2:

You need an SDLC for your alerts.



Lesson #3:

Don't blame failures in monitoring
for failures of engineering.

Part III

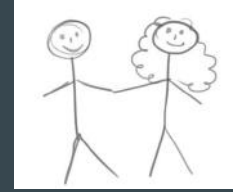
YOU ARE A HUMAN



STORY
TIME



Are You A ...?



- Highly Available
- Fault Tolerant
- Consistent, Predictable
- Performance Optimized
- Has No Feelings
- Does Not Love You

- Limited Working Hours
- Faulty, Intolerant
- lol
- Optimized For Minimal Effort
- Constantly Crippled By Emotions
- Probably Does Not Love You

Conclusion: You are not a machine.

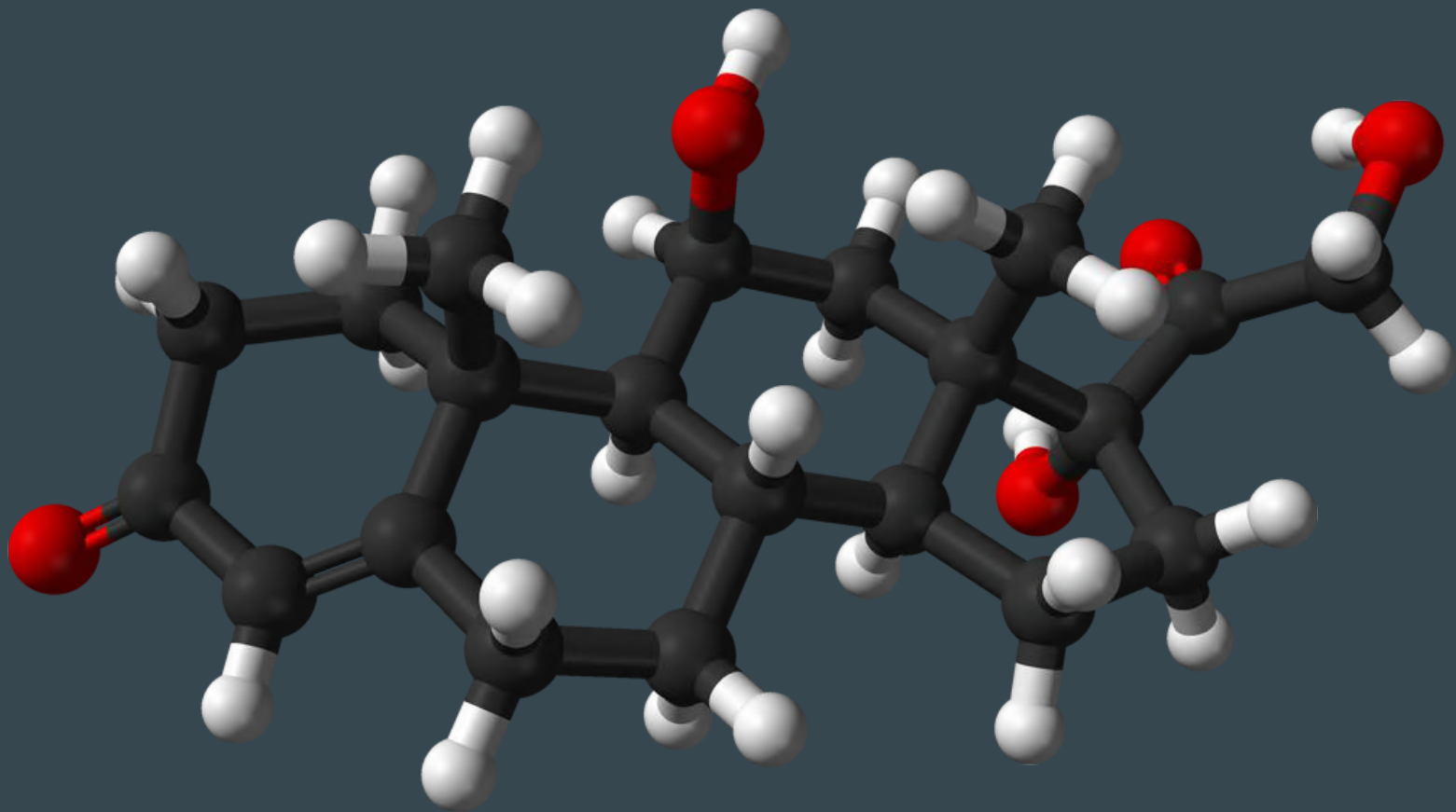
“fatigue”



BEHOLD! THE FIELD IN WHICH I
GROW MY FVCKS.

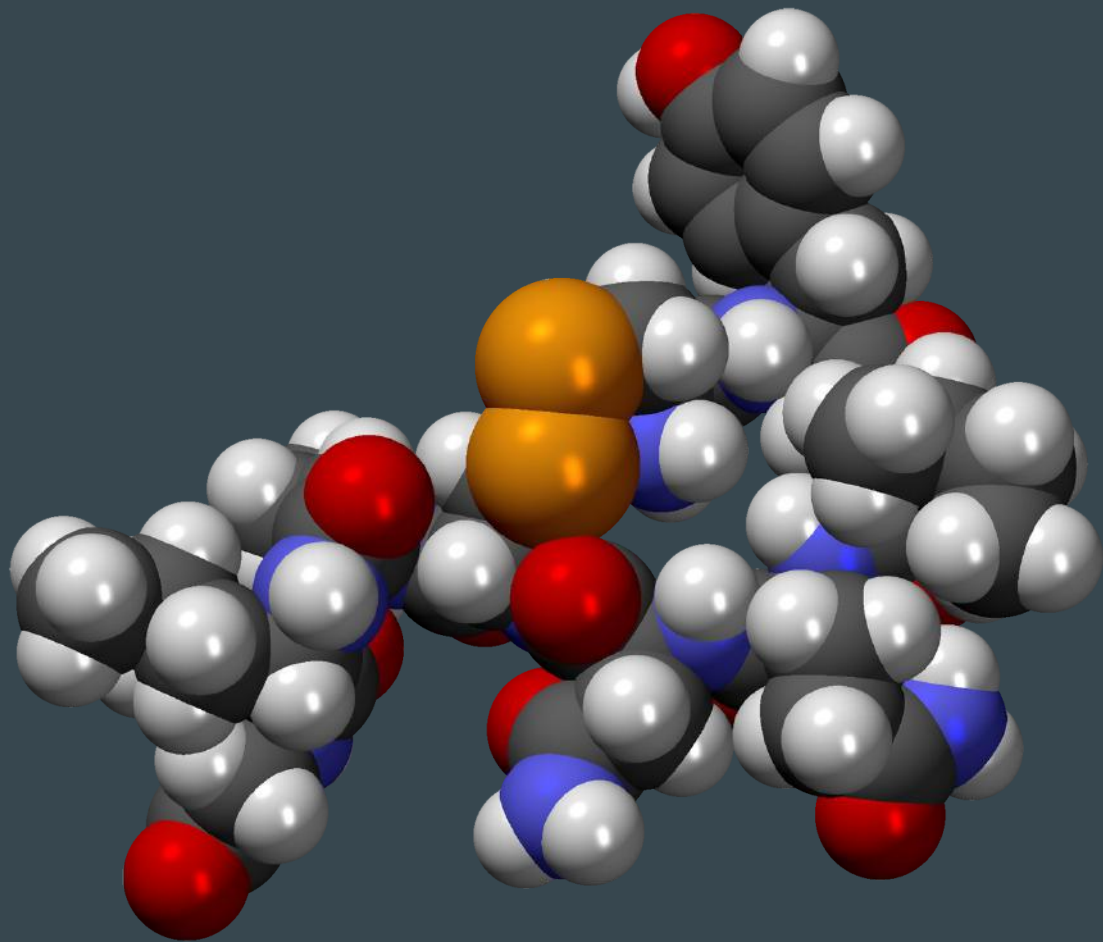


LAY THINE EYES VPON
IT AND THOV SHALT
SEE THAT IT IS
BARREN.



Unsustainable on-call practices
promote burnout.

Practices and process can change, but
take time.

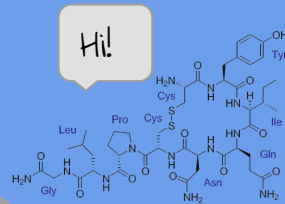


The Big, Scary World

Safe Space



You are
here



Lesson #4:

Sustainable on-call embraces the humanity in ourselves and others, and it has to come from you.

In Conclusion

1. Teach your organization to use tools, to use the right tools, and to use the right tools in the right way.
2. Rationalize your alerting with an SDLC process.
3. Don't blame failures in monitoring for failures of engineering.
4. Fight to maintain sanity in on-call by investing in team relationships.

In Order To

Have and show empathy for others.

Create and reinforce the spirit of collaboration. Build bridges, not walls.

Embrace automation as a force multiplier.

The End

MONITORING, ALERTING, AND PAGING

WE'RE HIRING!