



# Move Faster and Break Fewer Things with Observability + AI

Adam Frank, VP Product & Design  
Moogsoft

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# Speaker Intro

## Adam Frank

Adam Frank has been with Moogsoft for three years and currently leads the product and design teams. He has brought insights from a user perspective to focus on making better user experience, simple messaging, ease of use and self-service, each a focus of Moogsoft's latest platform advancements. He has also led the company's push to a cloud-native and SaaS-first model.





**The customer experience is a  
digital experience**

The background of the image is a dark blue, semi-transparent aerial view of a city grid. A solid, medium-blue horizontal band runs across the center of the image, serving as a backdrop for the text. The text is white, bold, and centered within this band.

**We live in a world of on-demand  
& 100% availability**



**PURCHASE**



**TRANSACTION**



**INTERACT**

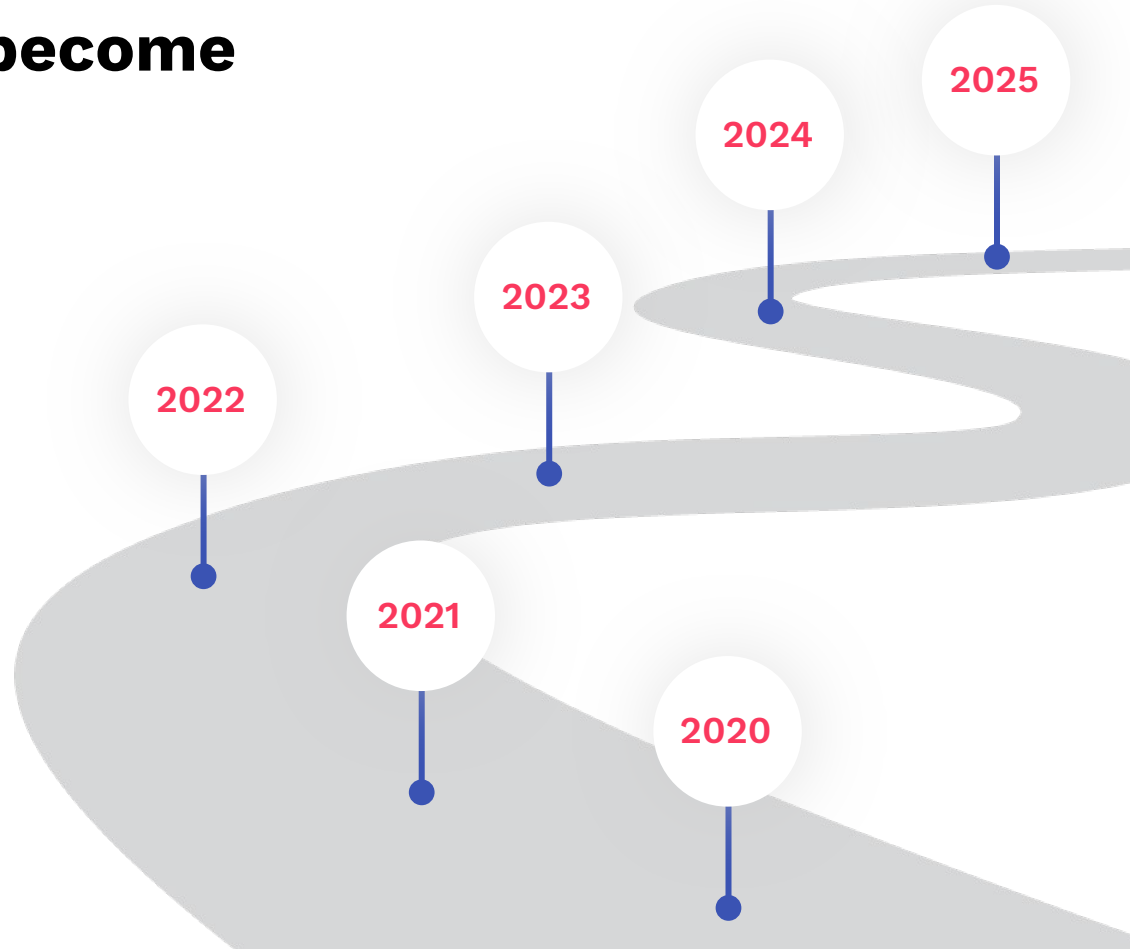


**ACCESS**

**The On-Demand Customer Experience & Economy Mandates  
CONSTANT CHANGE & ZERO DOWNTIME**

# Every company must become a software company

- ▶ All software requires continuous operation and innovation.
- ▶ Continuous customer value is a **Board level priority**.
- ▶ The software-defined world needs automated intelligence.



# Your Revenue, Reputation, & Growth Depend On Reliable Services

## A Major U.S. Airline

### 5 Hour Outage

+1,000 flights cancelled, \$150M in costs



Google Cloud Platform

### 1 Hour Outage

No access for Pokemon Go and Snapchat users



### 6 Hour Outage

+5 million payments in the UK and Europe disrupted



### 30 Minute Outage

Data lost due to hardware failures

# Several of the Fortune 500 have disappeared since 2000



Share of market activity

Changes in the activity of the active and passive market is

Distribution of the securities market key players



# People



# Process



# Technology



**Lack of Skill Sets**



**Change Acceleration**



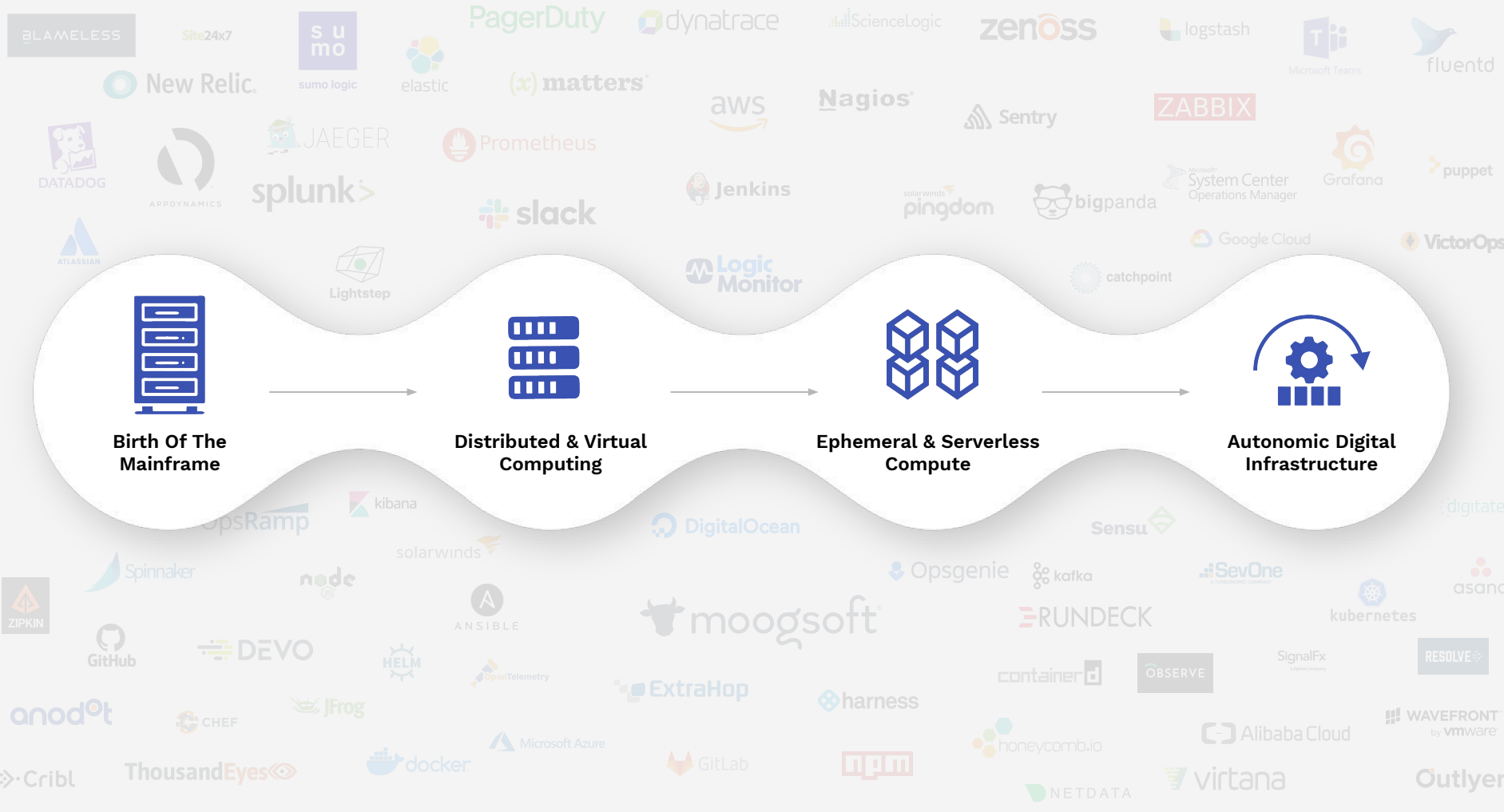
**Management Complexity**

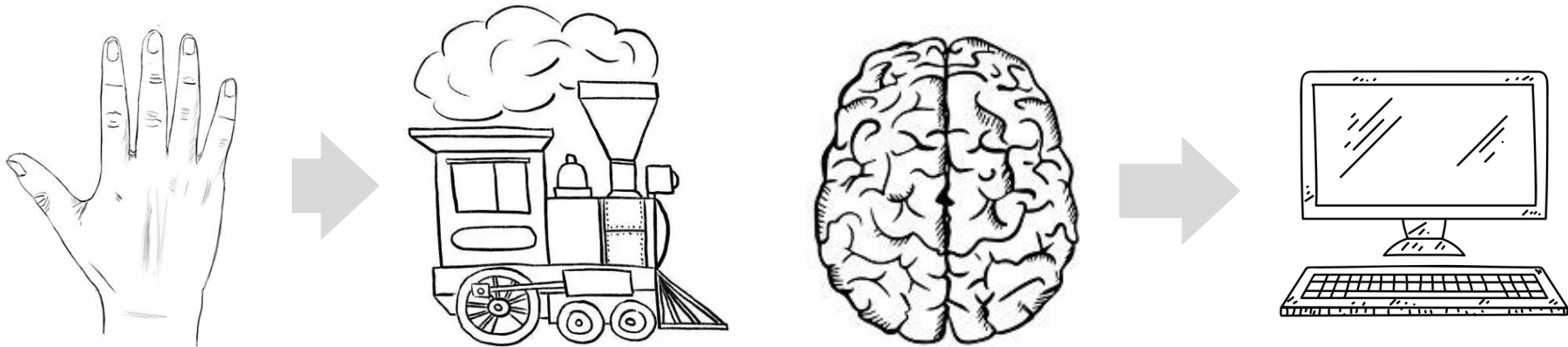


**Increasing Demand**



**Tighter IT Budgets**





1784



**Steam Power**

1870



**Electricity**

1969



**Information  
Technology**

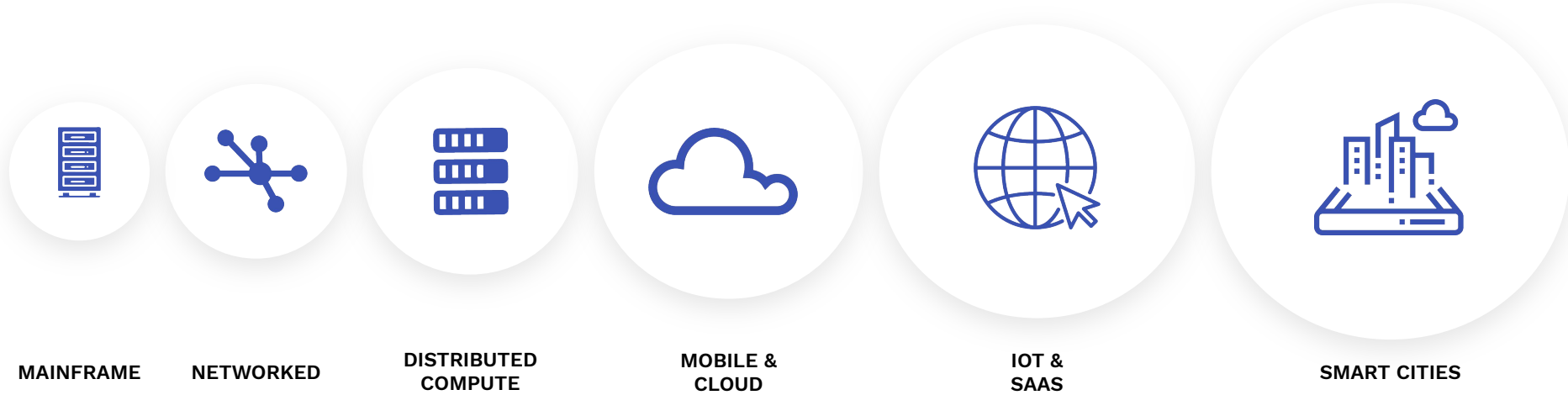
Now



**Artificial  
Intelligence**

# Complexity and Dependency is Increasing Exponentially...

Manual Monitoring → Automated Monitoring with Basic Rules → Attempts with Complex Rules → Only **AI** will Assure Service



**DIGITAL TRANSFORMATION OF EVERYTHING**

1950 → 1960 → 1970 → 1980 → 1990 → 2000 → 2010 → 2020 → 2030 →

# Eliminating the Toll of Toil

How introducing visibility and control over incidents earlier in the development cycle can reduce toil

# Overwhelmed by **DATA** and lack of **CONTEXT**?

**Too many Alerts?**

**Constantly Tuning Monitoring?**

**No Monitoring?**

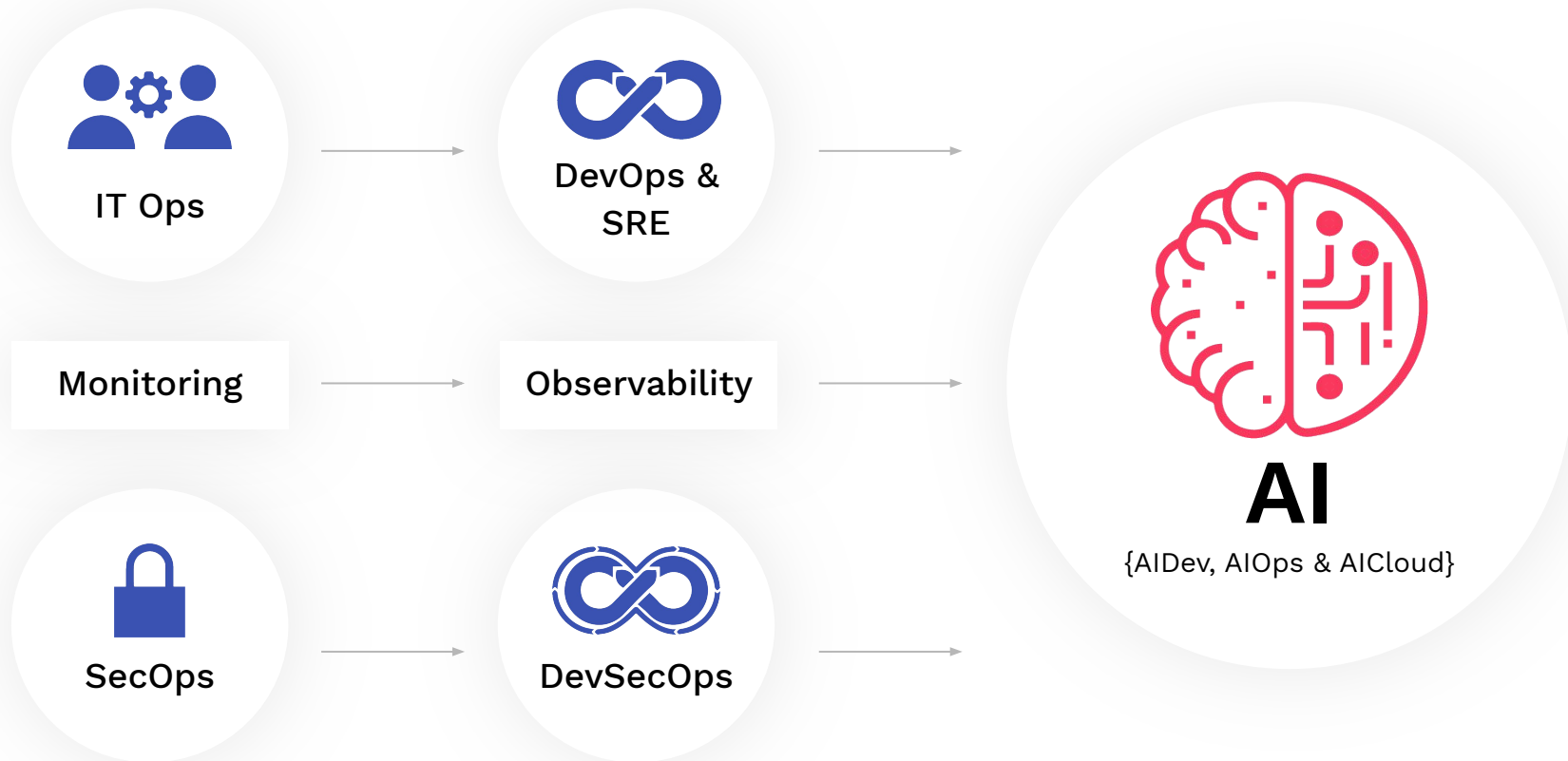


**Lack of Context?**

**Still Writing Rules?**

**No Verification?**

# IT Development & Operations Evolution



# Telemetry Everywhere

## OVERVIEW

Last 14 days, daily

sessions

5,496  
+267 / day

users

4,294

new

3,871

returning

1,423

visitors

5,492

visits

5,492

total

926

total

926

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926

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## VISITORS BY REGION

Last 14 days

5,492 - World

United States 866

Brazil 465

Russia 381

Italy 376

United Kingdom 309

Spain 235

Portugal 207

## TIME ON SITE

Last 14 days

184:43:44

## AGE

Last 14 days

1,067

25-34 707 / 66%

35-44 157 / 15%

45-54 95 / 9%

18-24 91 / 9%

## TOP PAGES

Last 14 days

/business/cut 984

/agencies/cut 892

/pricing/business 489

/pricing/agencies 357

/agencies/seo-reporting-tool 353

/agencies/social-media-reporting-tool 328

/dashboards 260

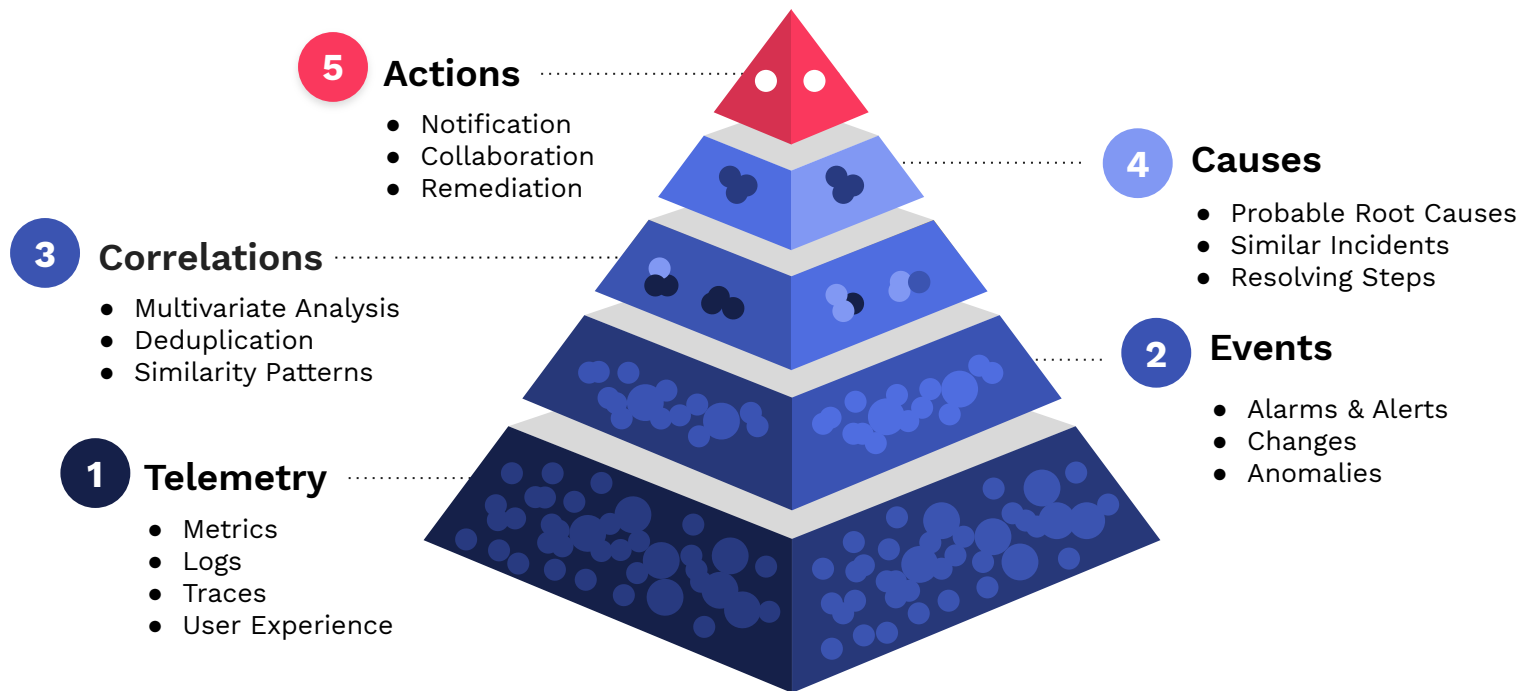
/pt/agencies 190

/es/agencies 177

/agencies/ppc-reporting-tool 128



# Turn Telemetry into Actionable Insight





## LOGS

Purpose written messages  
(error 123 occurred)



## TRACES

Connecting source to  
destination (point A to point  
B)



## METRICS

Time-series data  
(timestamp + numerical  
value)



### LOGS

Purpose written messages  
(error 123 occurred)



### TRACES

Connecting source  
to destination  
(point A to point B)



### METRICS

Time-series data  
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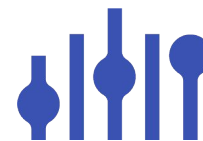
### LOGS

Purpose written messages  
(error 123 occurred)



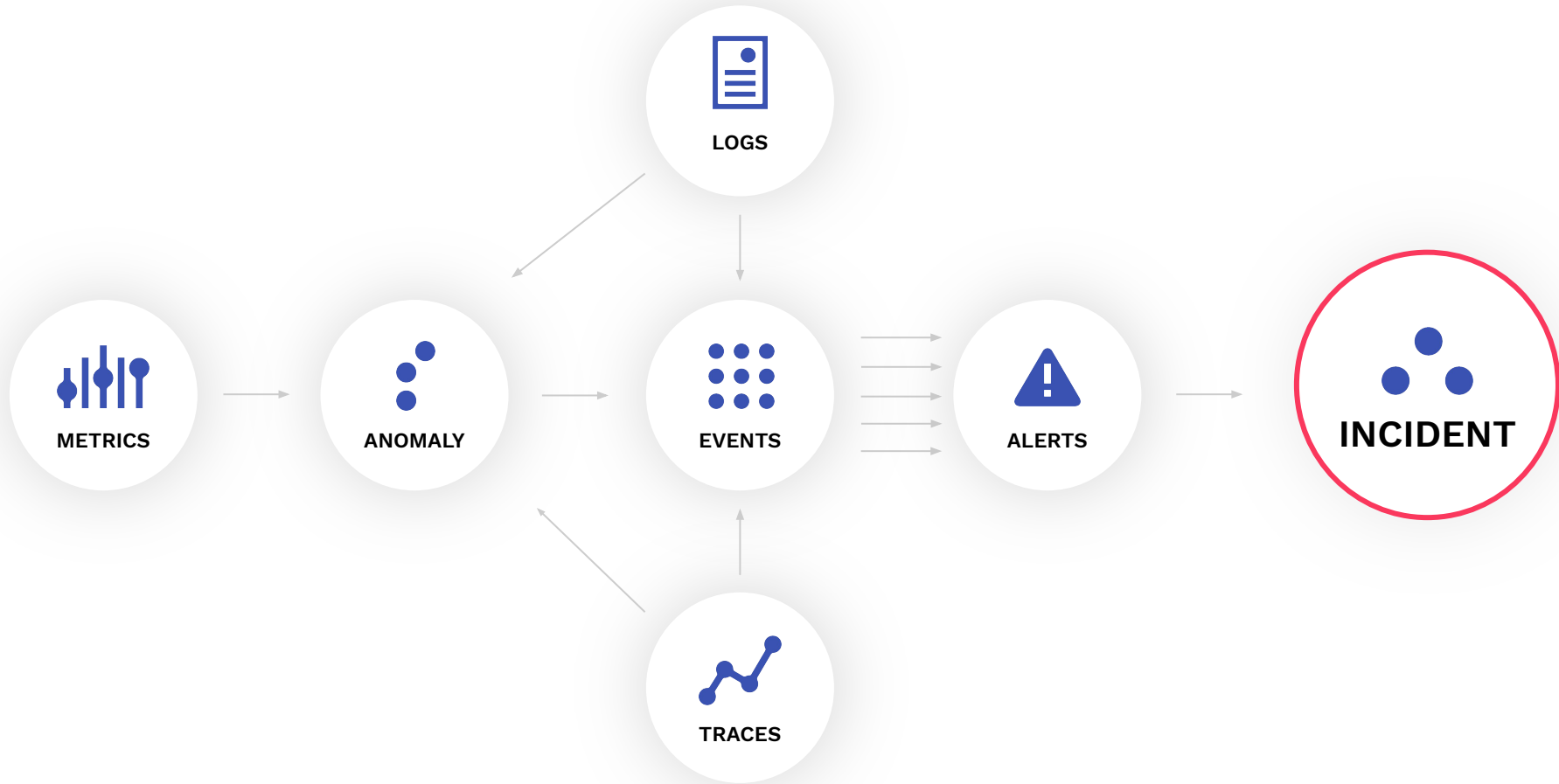
### TRACES

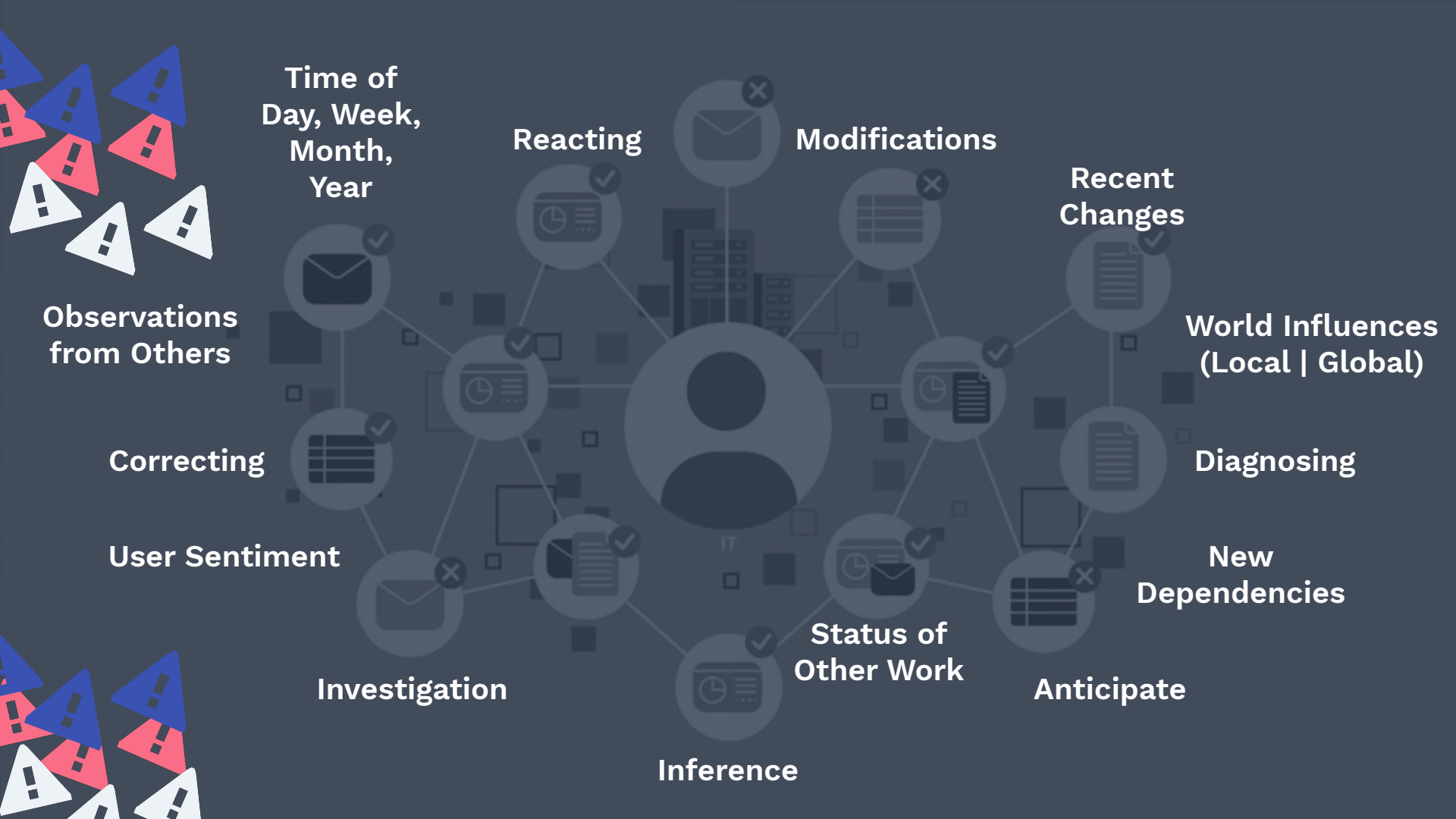
Connecting source to  
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B)

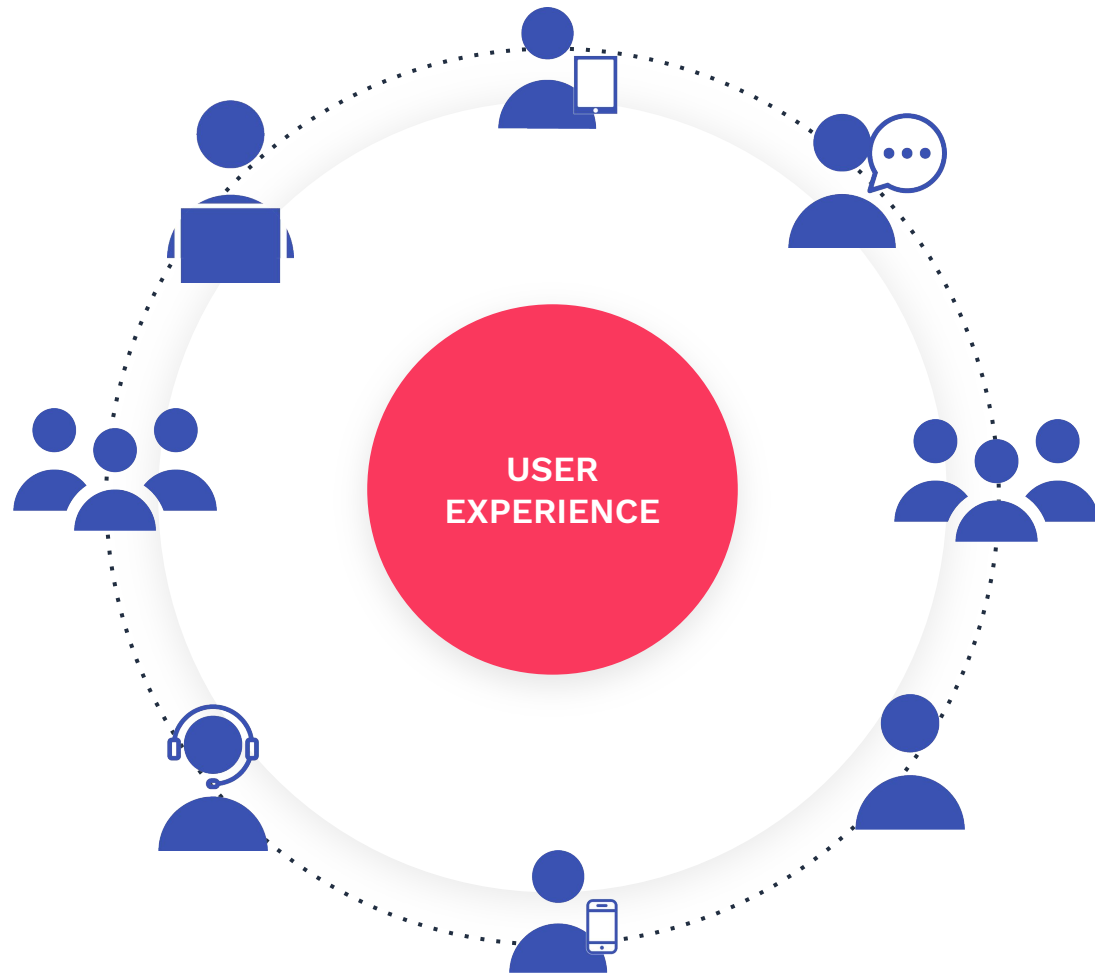


### METRICS

Time-series data  
(timestamp +  
numerical value)







# Observability Puts Developers in the Driver Seat



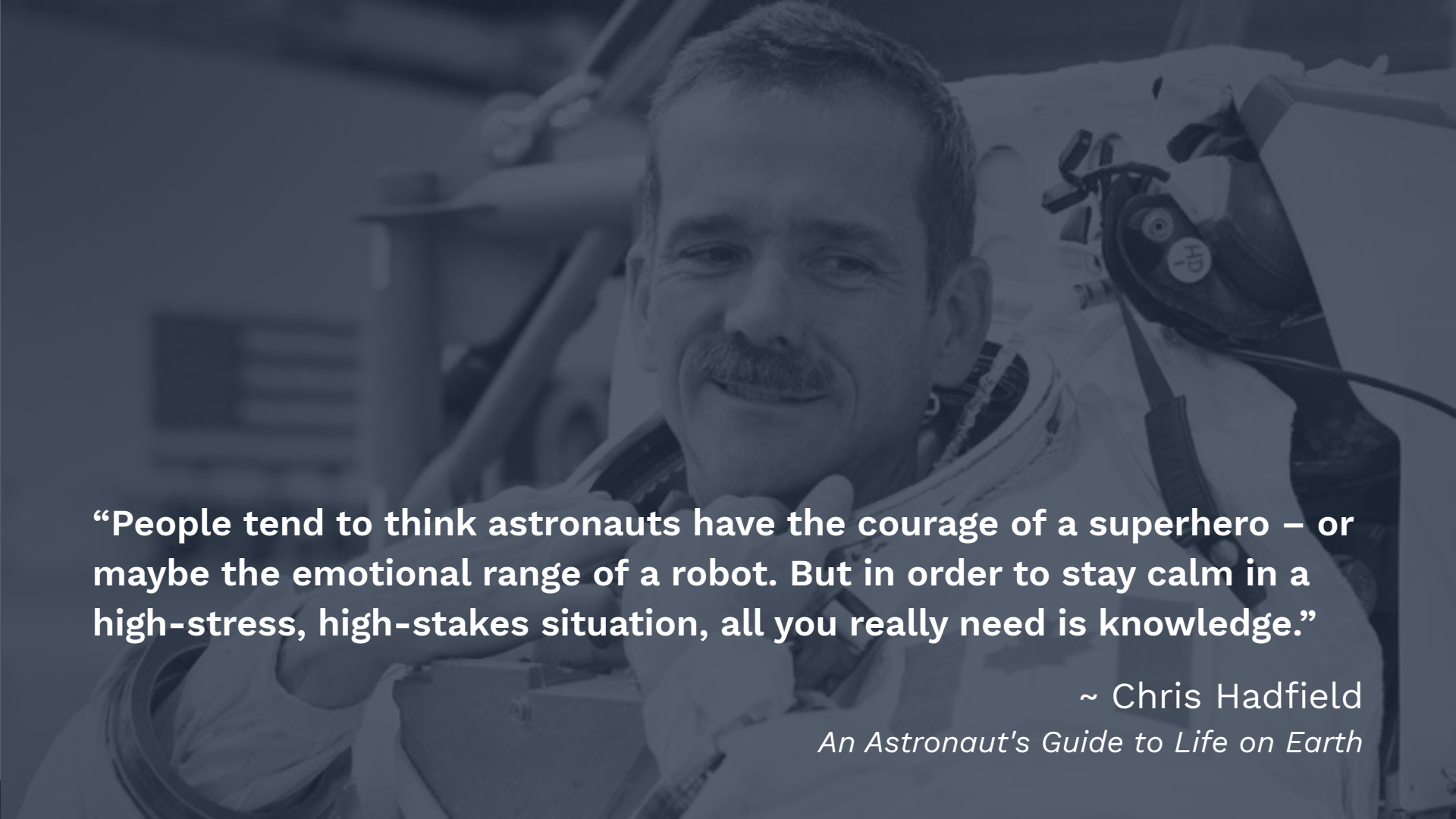
- Code features, functionality, and telemetry as a practice
- Emit metrics, logs and trace data
- Automatically discover and collect telemetry data with code pushes
- No updates needed to your observability solution
- Becomes part of your test cases and automated quality value assurance
- ...



# **Knowledge Across Infrastructure, Applications and Services**

# **Knowledge to Resolve Incidents Before Business Impact**

**Knowledge Provided to See What Could  
Happen Before it Happens**



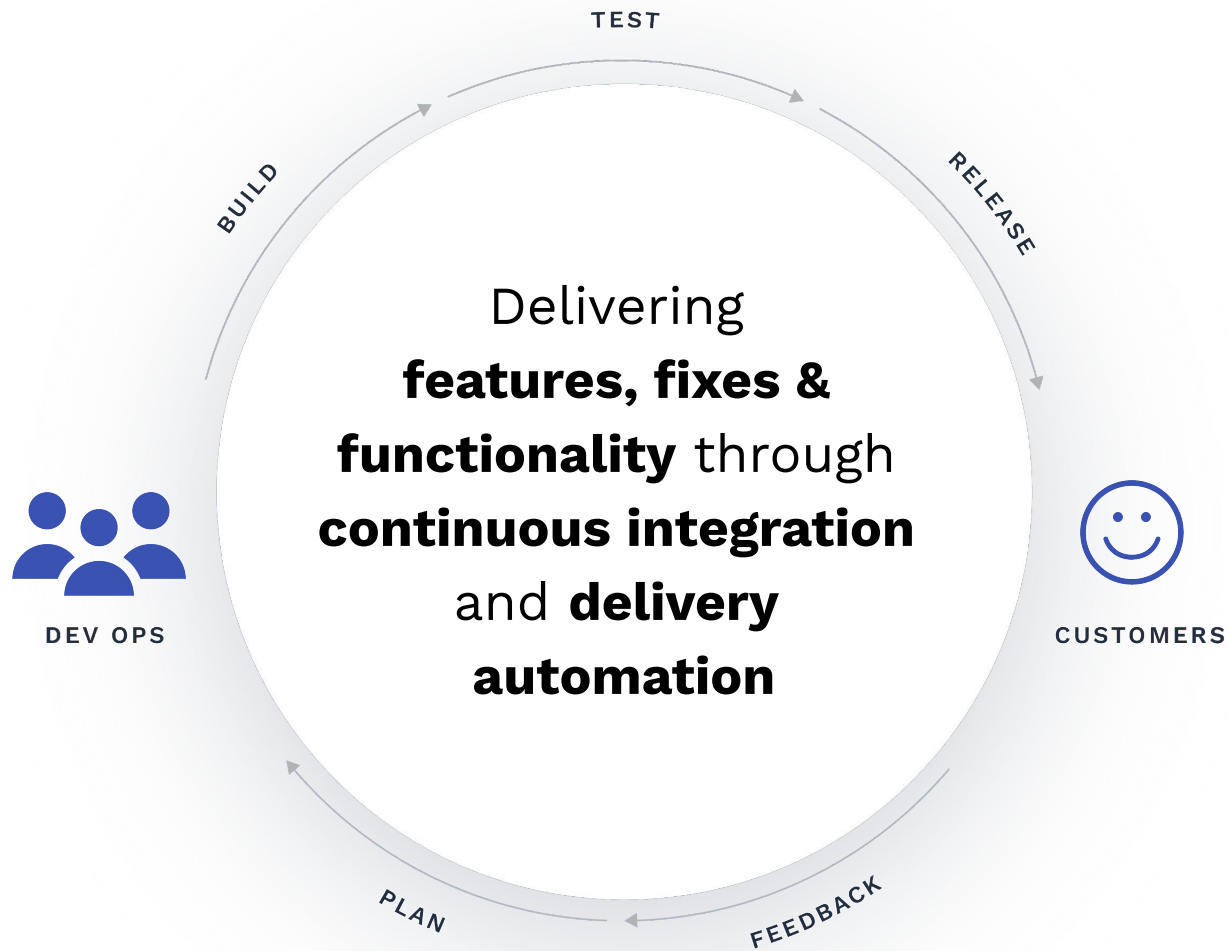
**“People tend to think astronauts have the courage of a superhero – or maybe the emotional range of a robot. But in order to stay calm in a high-stress, high-stakes situation, all you really need is knowledge.”**

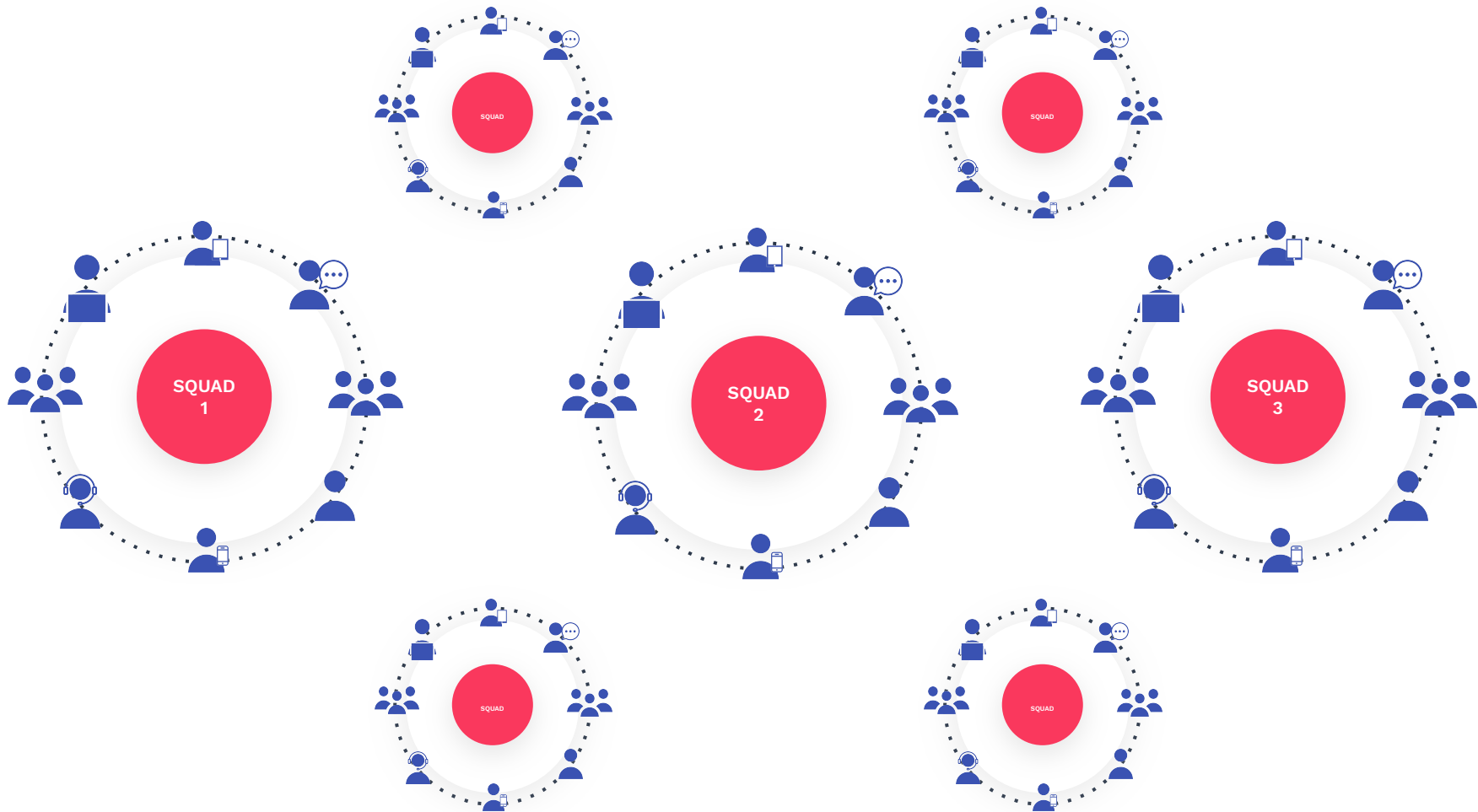
~ Chris Hadfield

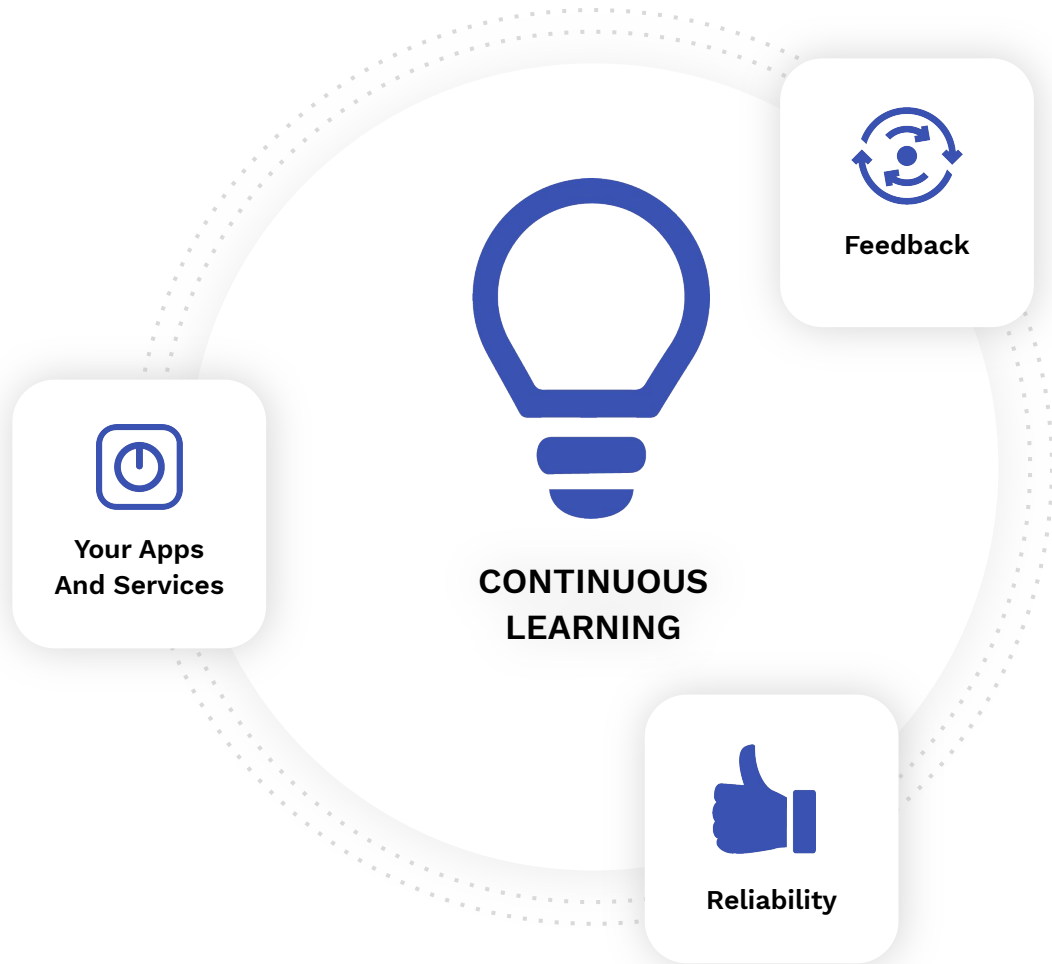
*An Astronaut's Guide to Life on Earth*

# Putting Better Ops in DevOps

Leverage A.I. and the 'wisdom of production' to improve the Ops part of DevOps.









# Observe & Monitor Digital Complexity

← UBIQUITOUS →

← ACTIONABLE →

← LOW CONTEXT →

← HIGH CONTEXT →



**METRICS**



**LOGS**



**TRACES**

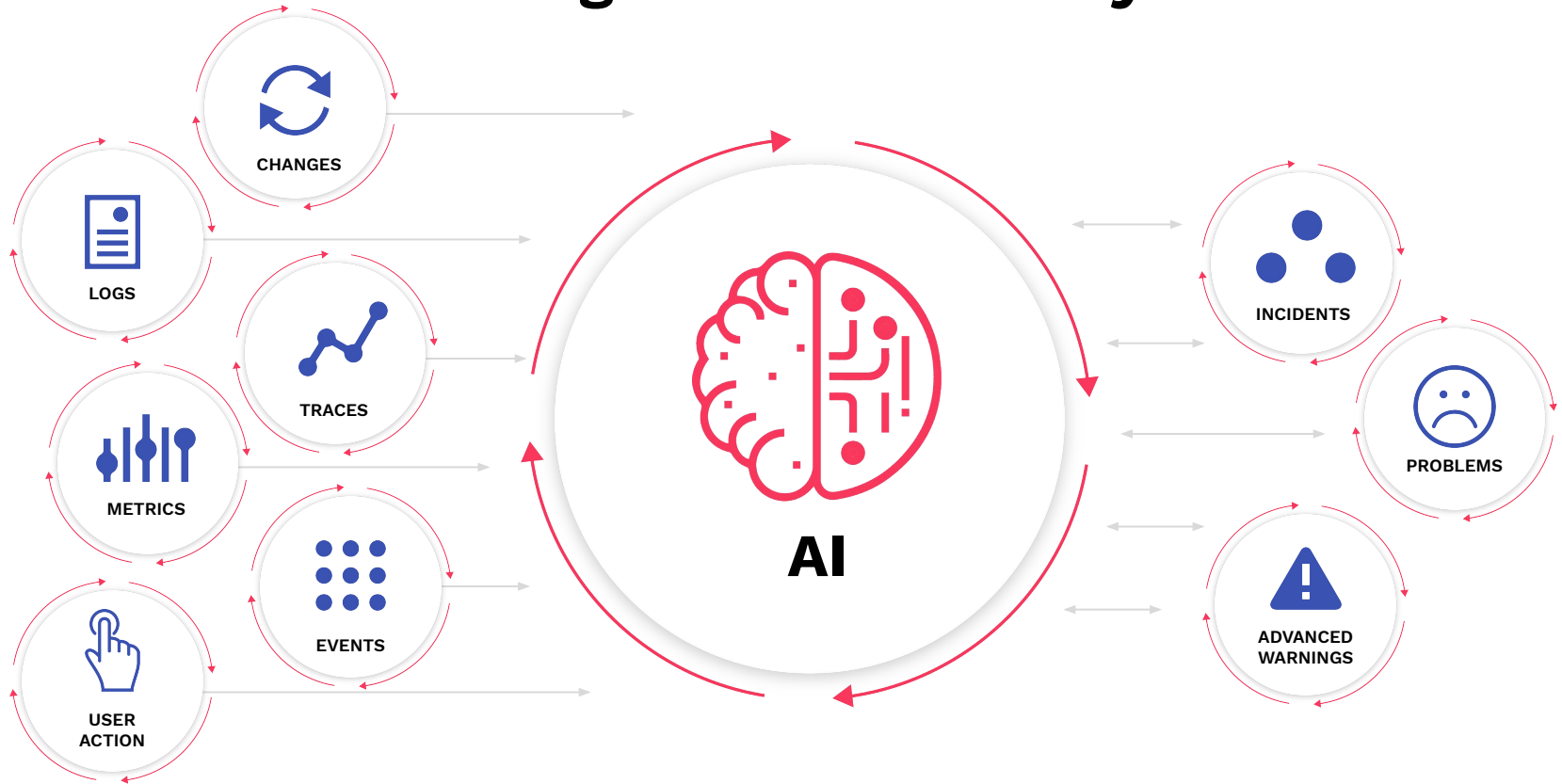


**ALERTS**



**INCIDENTS**

# Intelligent Observability





# The Economic Value of Intelligent Observability

Data Discovery  
& Collection

Noise  
Reduction

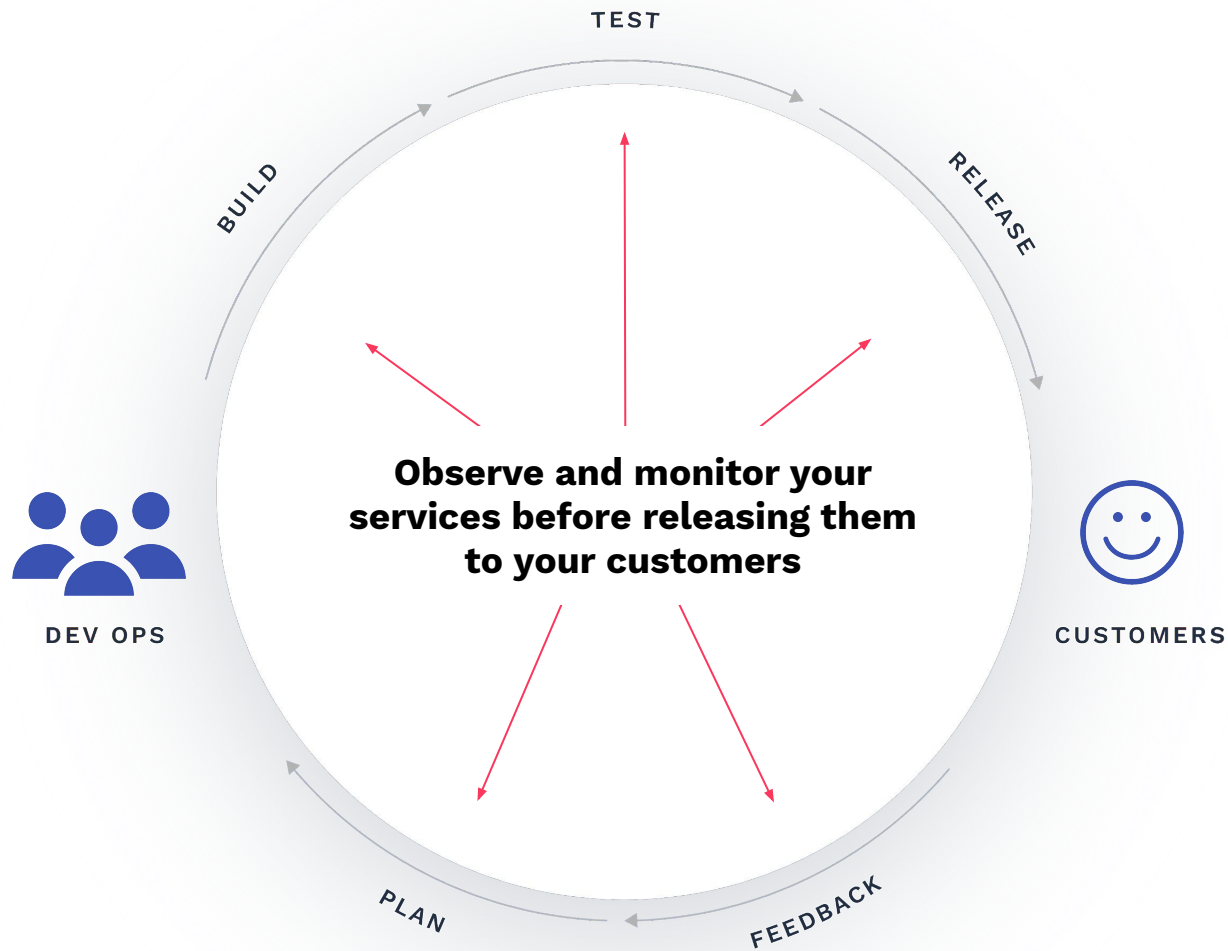
Correlation

Causes

Automated  
Optimization



Anomalies	Significance	Time	Text	Topology	Impact	Feedback	Probable Root Cause	Similarity
Anomalous Deviations	Alert Significance	Timestamp Patterns	Text value similarities	Network proximity patterns	Critical node identification	Learnings from user behavior	Root cause identification	Similar past and current situations



# A.I. Driven Observability

## OBSERVABILITY

—

A.I.

---

Noise!  
Expensive Data Lakes  
Manual Diagnostics  
No Context

## OBSERVABILITY

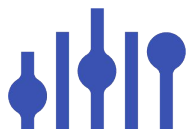
+

A.I.

---

Closed Loop  
Autonomous  
Actionable  
High Context  
Insightful

# Increase Visibility & Improve Uptime



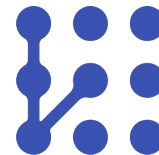
Discover and ingest raw time-series metric data at the source



Establish normal operating behaviors to generate anomaly events for abnormal behaviors



Ingest events and alarms from all your monitoring tools



Discover patterns and relationships in the anomalies and events to correlate them together

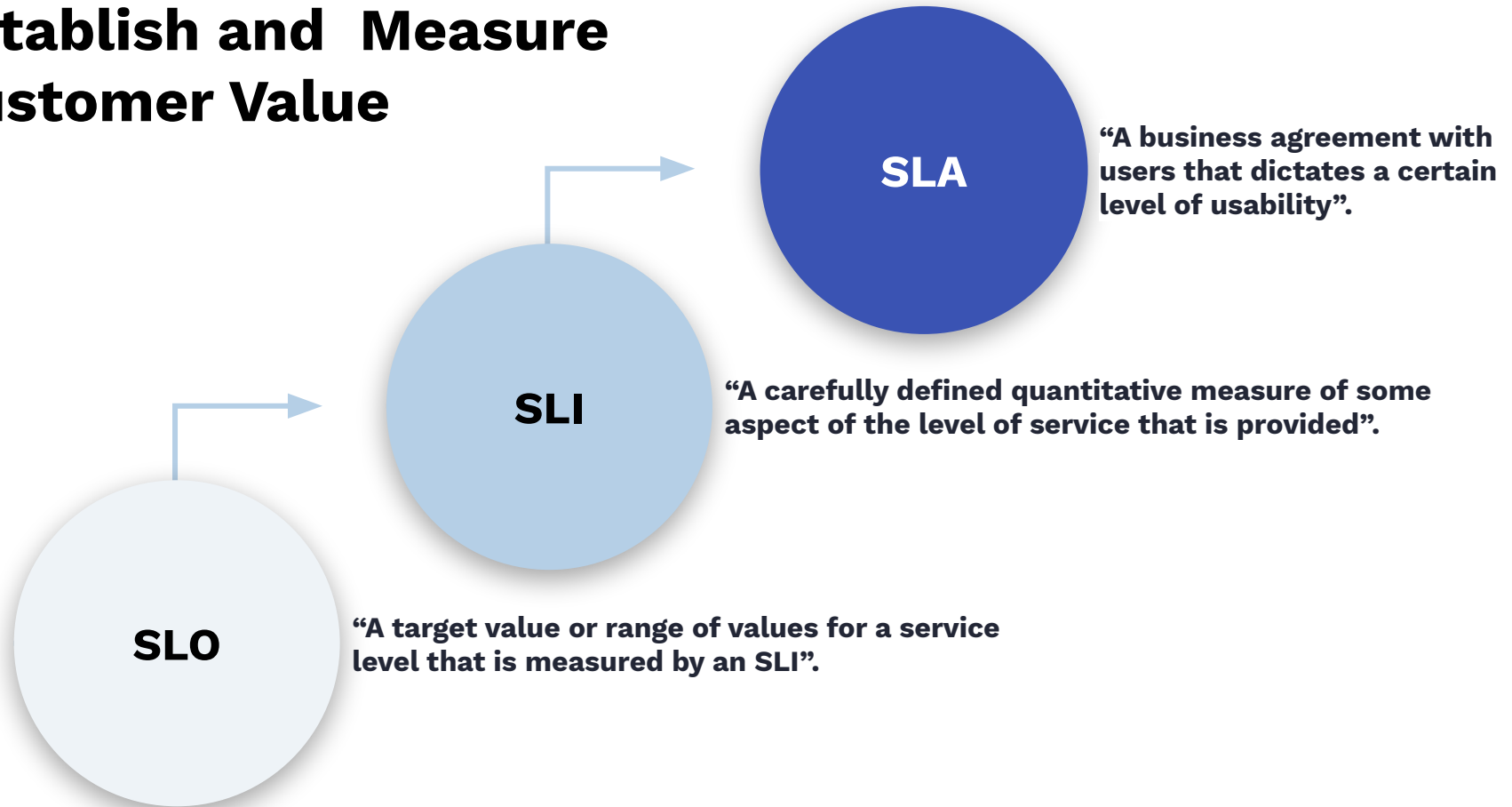
**Automate monitoring observability data using AI**

# Measure & Improve

Understand your own performance to continually improve your customers experience



# Establish and Measure Customer Value



# SLOs provide guardrails and incentives to align teams to drive reliability while mitigating risks



## Craft and design your user journeys and SLOs

An Service Level Objective is defined as the target level for the reliability of a service.



## Connect your data (SLIs)

Observability data sources Indicating Service Levels (SLIs) need to be connected



## Set error budget policies

Error Budgets are the amount of allowable unplanned system failure



## Operational SLOs!

Have regular operational meetings with cross-functional Capture and track follow-on items from SLO violations

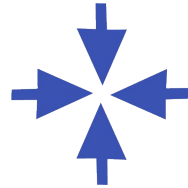
# Enable Agility & Innovation



Actionable insights  
from analysing  
multiple streams of  
data in real time



Remove handoffs  
between teams and  
embrace “*We build it,  
we own it*”



Accelerate root cause  
analysis



Measure and track  
SLOs and Error  
Budgets to improve  
reliability

**Focus on your customers' experience**



**1**

**Improve Reliability &  
Availability**

```
value;
te
ision : function(value){
nan = isNaN(value);
this.allowDecimals || this.decimalPrecision
return nan ? '' : value;
}
return parseFloat(parseFloat(value).toFixed(this.decimalPrecision));
}
this.parseValue(this.getValue(v));
}
(Ext.isEmpty(v)) {
    ls.fixPrecision(v);
    this.parseValue(this.fixPrecision(v));
}
```

2

## Focus More On Development, Less On Ops



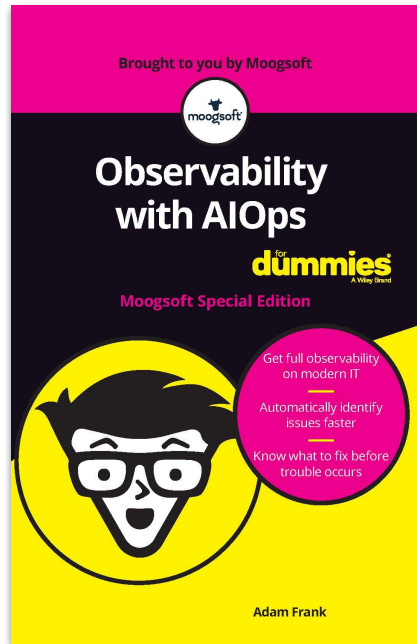
**Assure The Quality Of The  
Customer Experience**

# The Best News...

It takes this long to  
achieve results from  
AI-driven observability



# Want to Know More? Read my Book!



[moogsoft.com/dummies](https://moogsoft.com/dummies)



Sign up for a Free Trial of  
Moogsoft Observability Cloud

[moogsoft.com/gsf2020](https://moogsoft.com/gsf2020)

