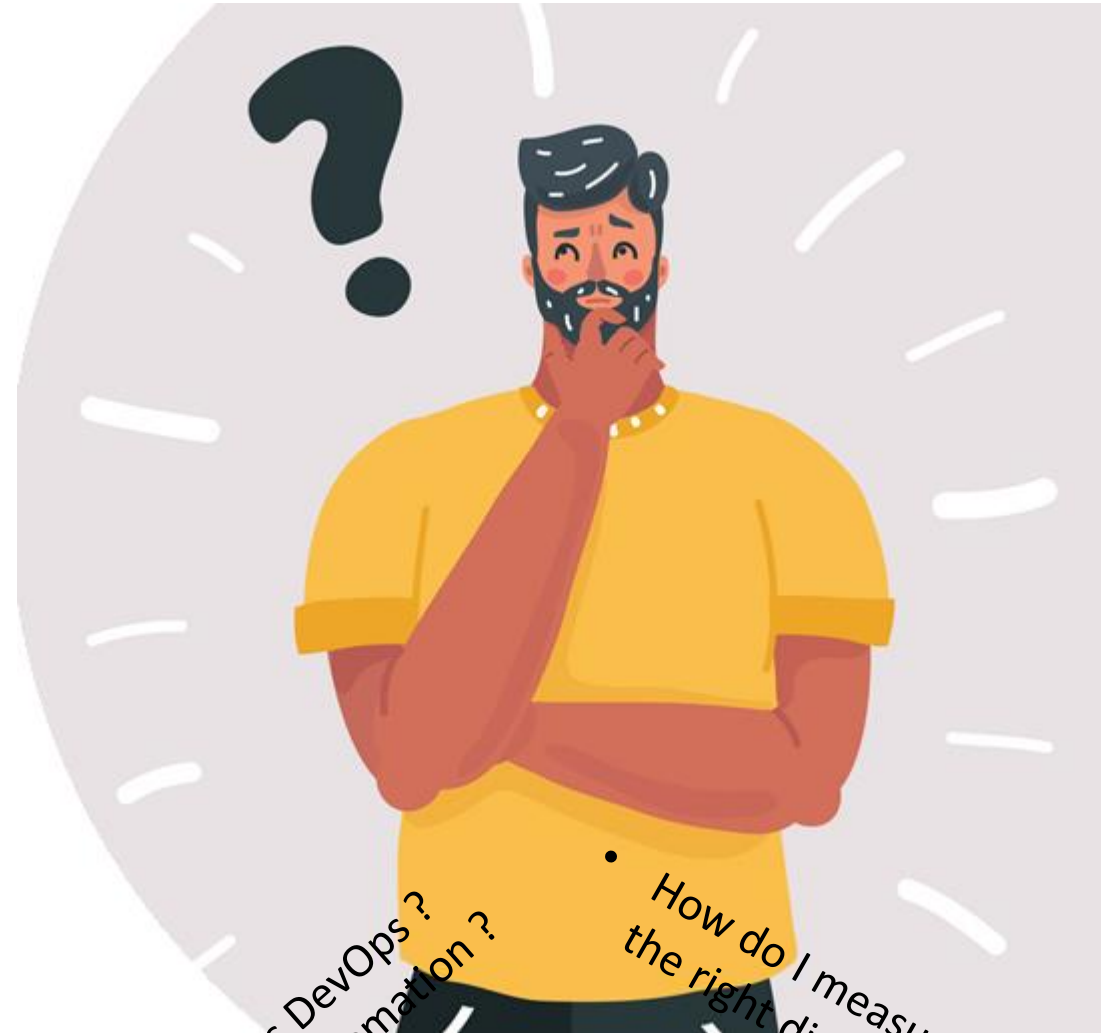


Transformation & Cultural shift  
using SRE (Site Reliability  
Engineering) and Data Science

# SRE – WHAT IS IT ?

- Ben Sloss coined this term
- As name suggests Reliability Engineering focuses on reliability at any cost
- Site reliability engineers often have backgrounds in software engineering, system engineering, or system administration.
- Focuses of site reliability engineering include automation, system design, and improvements to system resilience.
- Removal of Interrupt driven culture



- Is SRE same as DevOps ?
- Is SRE about automation ?
- How do I measure I am in the right direction?

# SRE as the Transformation Driver



## Cultural Shift

### Listen – Understand – Act

- Build better team – Accepting failure as normal  
Adopting a Blameless Approach
- Creating Strong Teams
- A lot of “**NO**” – Don’t work out very well
- Could you push people different the way they do it now?
- Keeping Operations Closer to Engineering



## Making use of Data Visibility Engineering

### Enable Observability

- Leverage all data, Use it in various models and develop in house tools to enable reliability across platforms
- Custom designed centralized log monitoring dashboard, **Toil Dashboard**, Real-Time performance Monitoring



## Tech Refresh

### Modernization – Reliability First

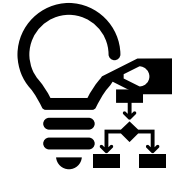
- Utilize Visibility Engineering to build AI/ML based Solutions
- “REAL Analytics” – Where the problem is vs What the problem is.
- Tools Factory – Equip with Dedicated SREs and enable Data Driven approach to make strategic decisions
- Enable Broader Scope for **Open-Source** tools adoption where the flexibility/cost and Security is custom designed to best



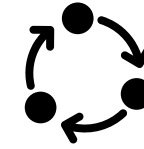
## Process & Automation

### Simplicity

- The goal is to enable Simplicity through process automation
- Introduce Self healing methodologies to minimize the alert generation



## Cultural Shift



## Tech Refresh

## SRE

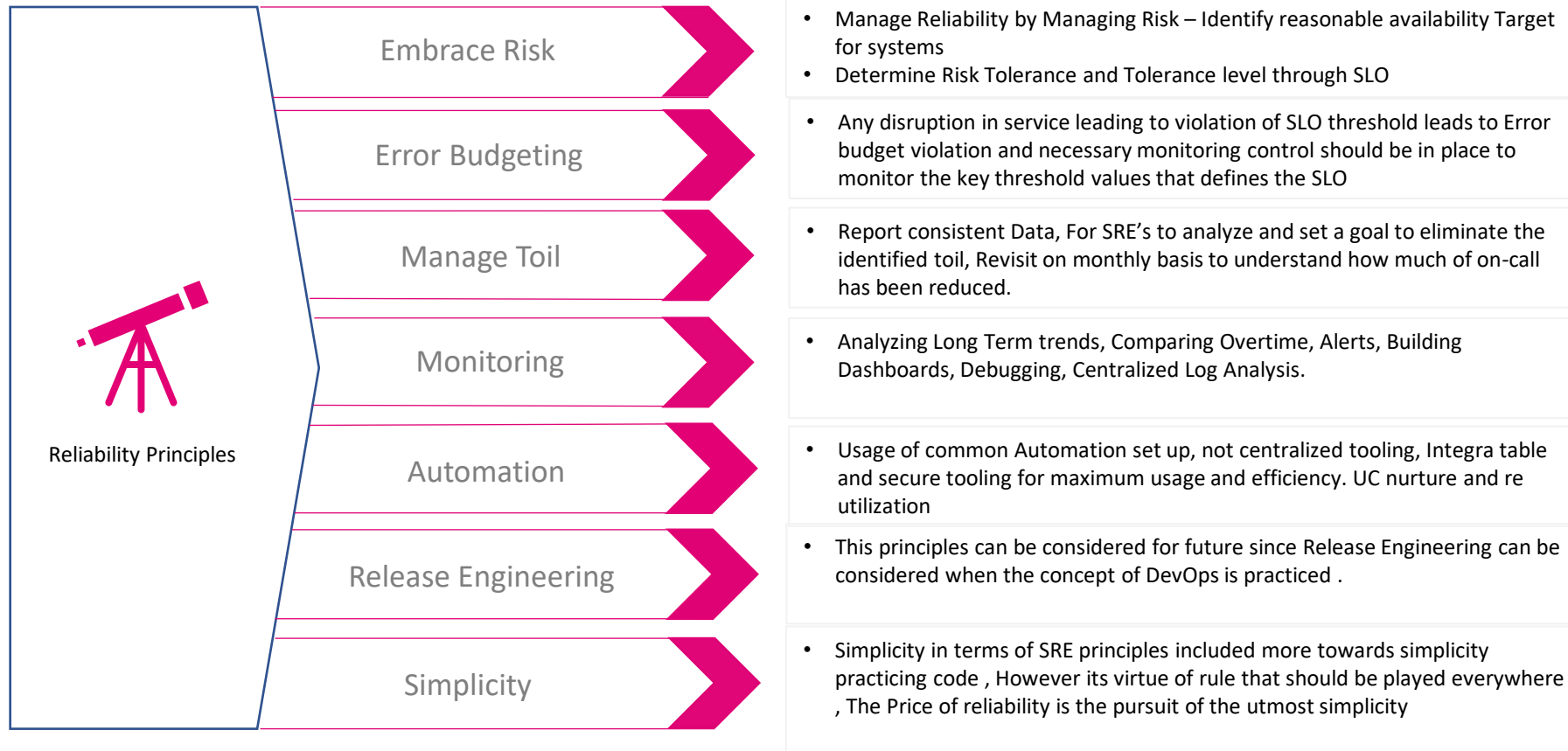


## Making use of Operational Data - Analytics

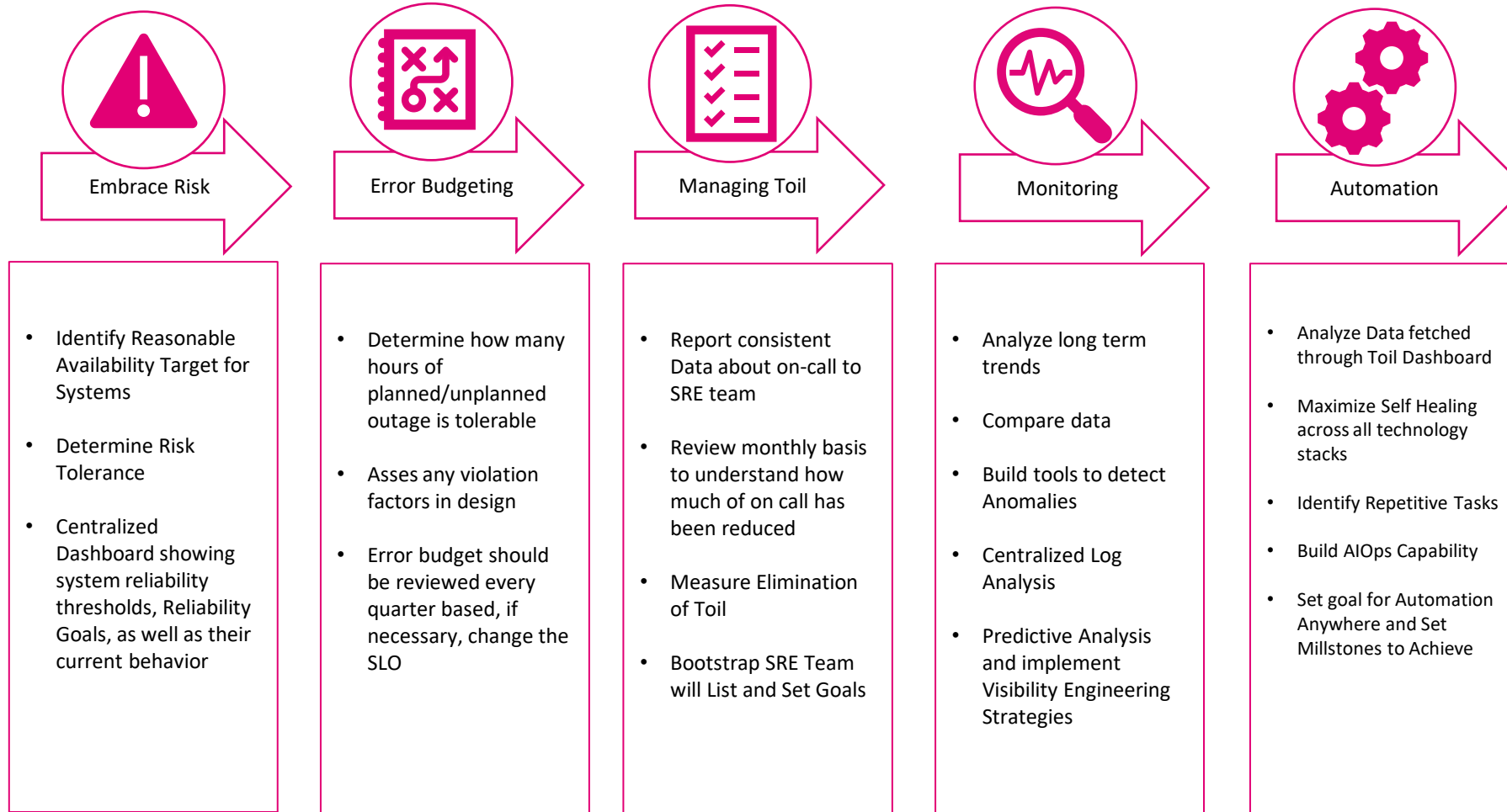


## Process & Automation

# SRE - Reliability Principles



## Cont.. SRE – Focused Reliability Principles





Platforms

Customer  
Units

Operations  
Management

Vertical  
Enablement

Line SRE



Line SRE



Development

Shared - Site Reliability Engineering

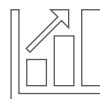
Horizontal Enablement of SRE



Software Tools/DevOps Factory



Real-Time Monitoring



Predictive Analysis



Process Automation



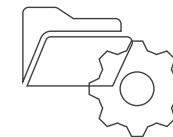
Event Automation



Automated  
Compliance  
Monitoring



System  
Vulnerability  
Dashboard



System  
Administration  
Utility



AI Driven  
Intelligence

Sense

Comprehend

Act



Visibility Engineering



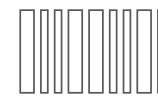
Automated ?



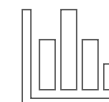
Error Budgeting



Determine MTTR



Categorization



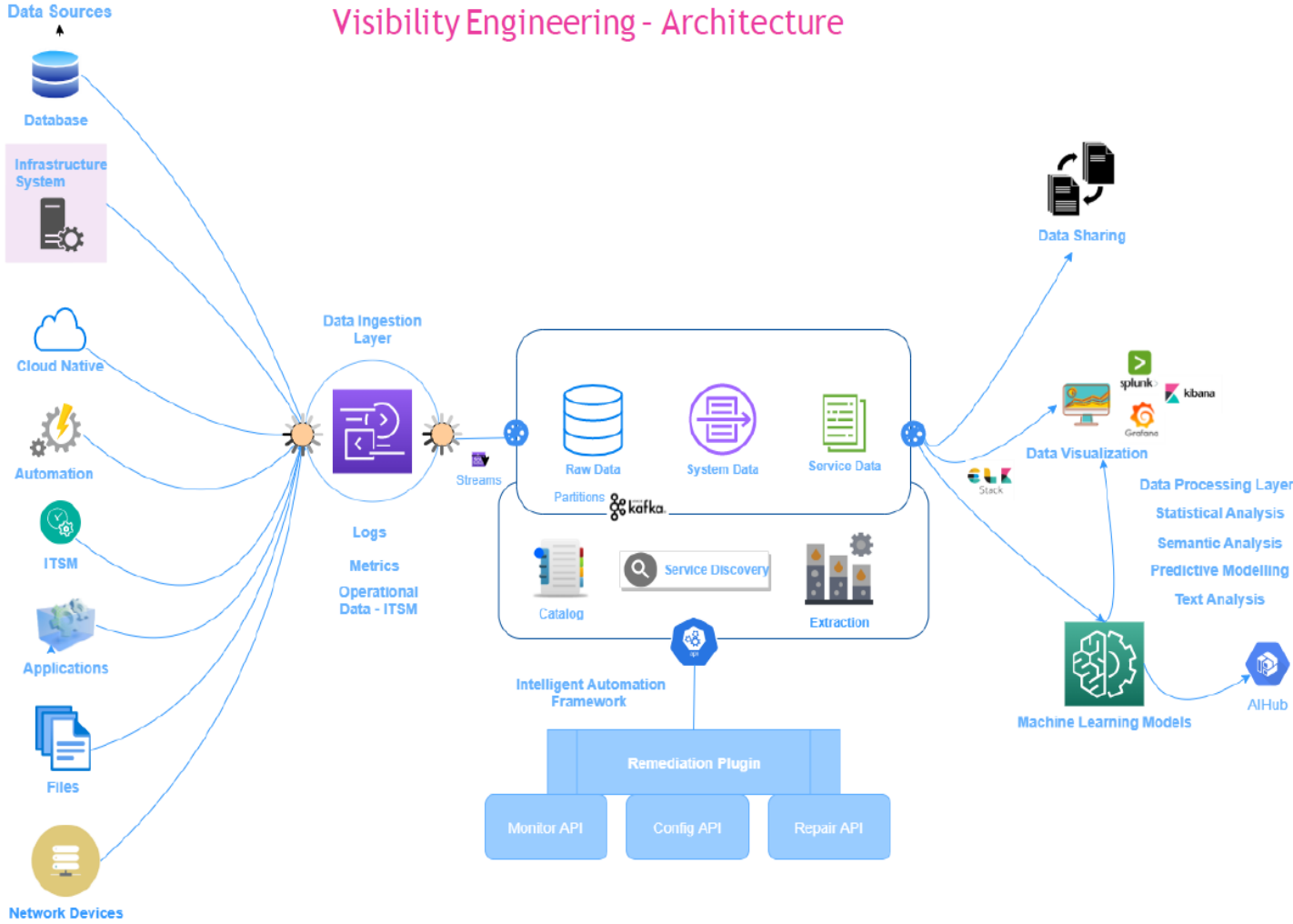
ITSM Data



System Data

Continuous sustainability

### Visibility Engineering - Architecture

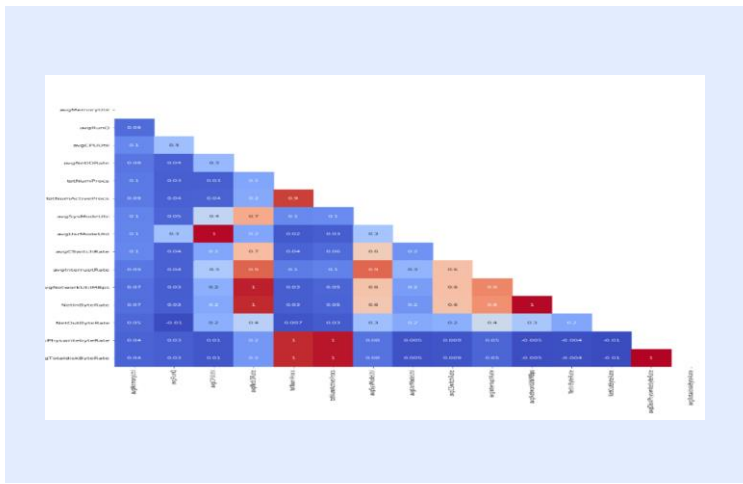
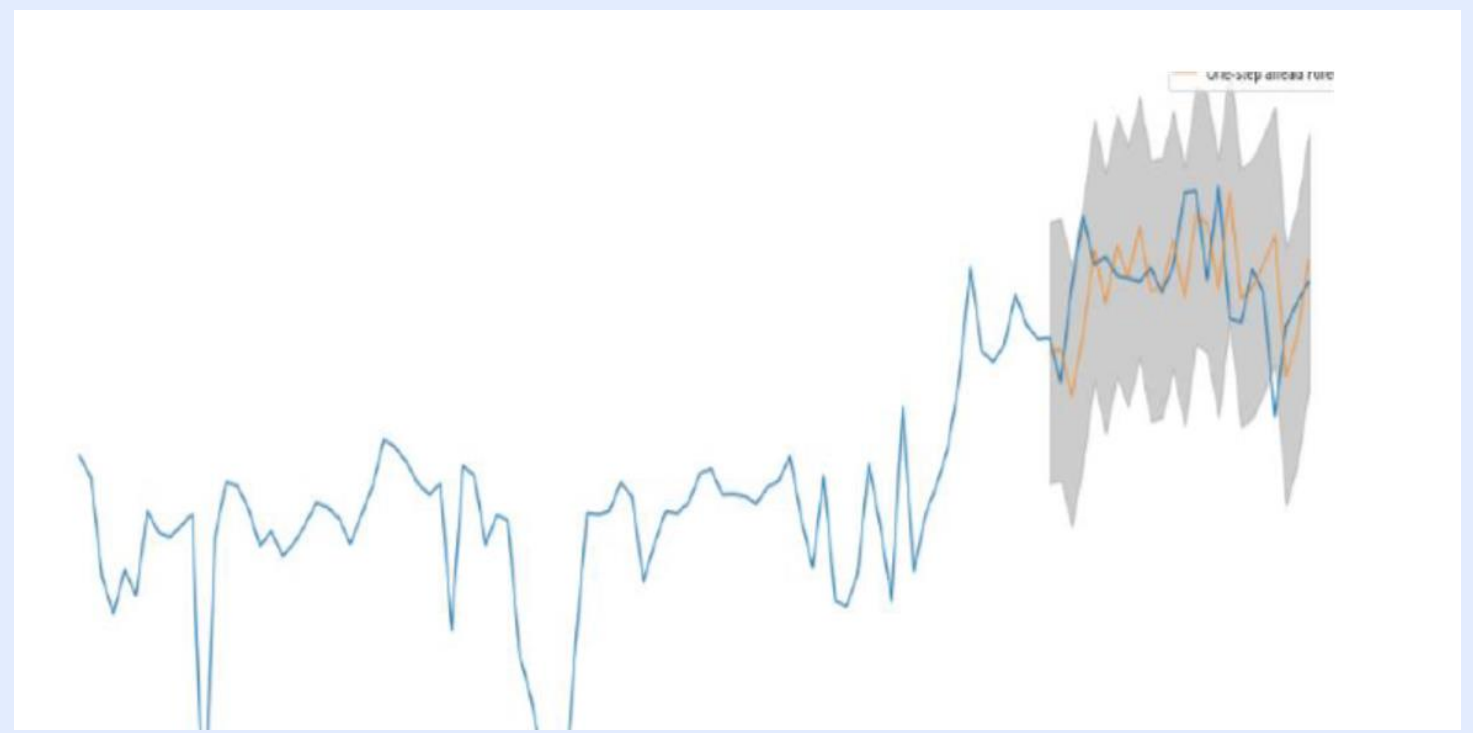


# DATA is the new Oil !!

- First Stage - ITSM analysis
  - Usage of ML based set up for **what** the problem is rather than **where** the problem is
- Second Stage
  - ITSM as static threshold , Log analytics as dynamic threshold and **Predictions**



# Correlation- The new Tech Monitoring



# Enhanced Analytics

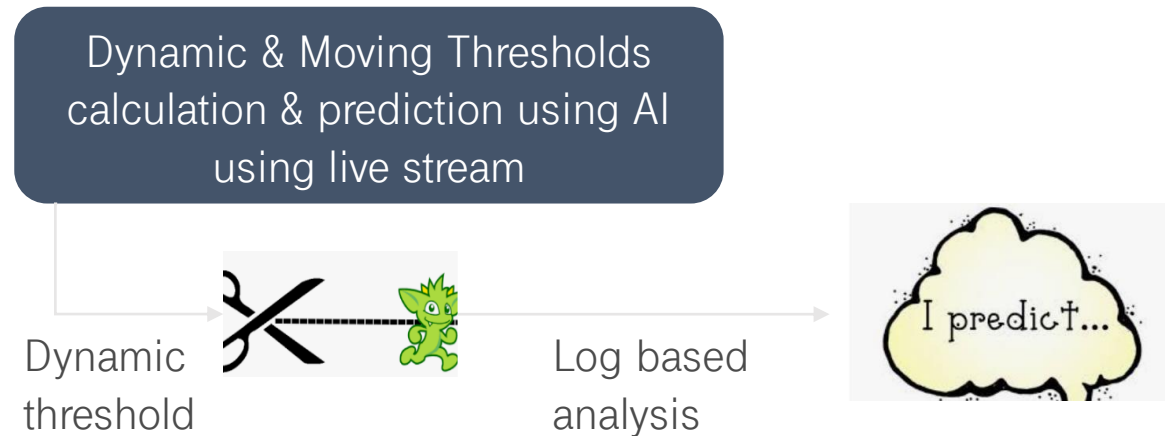
## data driven from the core using DataOps in different dimension



- DataOps implementation using Event incident correlation to get a trend and pattern
- Pro activeness based on data crunching of static thresholds
- Prediction thought only linear and limitation if outage prediction

VS

- Prediction based DataOps , correlation of all the parameters using advanced analytics
- Prediction algorithm based on log data to predict future spikes and nonlinear spikes.
- Data of log based on minute data



# Challenges

1. Instrument of gratification
2. Inculcating the culture of failure and not chase numbers
3. Governance
4. Analytics of data only from ITSM and Problem Management perspective
5. Non technology centric approach
6. Not ready to take tearing bold decisions
7. Not making cautious attempt for Error budget concept,

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