Implementing SRE in a Regulated Environment

Myths and Facts

Sandeep Hooda and Fabian Tay

Speakers Introduction

Sandeep Hooda

Sandeep is an Engineering Manager at DBS with over 19 years of experience. In this leadership role, he is responsible for engineering innovative and strategic solutions. He has deep technical expertise in Platform engineering, SRE, DevOps, Risk management, solution architecture and systems engineering. He has been instrumental in driving digital transformation and promoting SRE culture. He also had the privilege of speaking at several tech conferences and enjoys writing on SRE and DevOps topics. He enjoys his free time out in the ocean, practicing to sail around the world.

Fabian Tay

Fabian drives the Site Reliability Engineering Transformation and Observability Programme at DBS. With over 18 years of experience working in the banking industry, he has managed multi-disciplinary teams and has worked on Automation, IT Infrastructure Management, Application modernisation, Product Delivery, and DevOps. Outside of work, he enjoys spending time with his family.

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MYTH 1

There is only a single root cause to every disruption

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MYTH 1: There is only a single root cause to every disruption

Fact

Solve one root cause means you are blindsided by the other causes

No Single Root Cause Analysis

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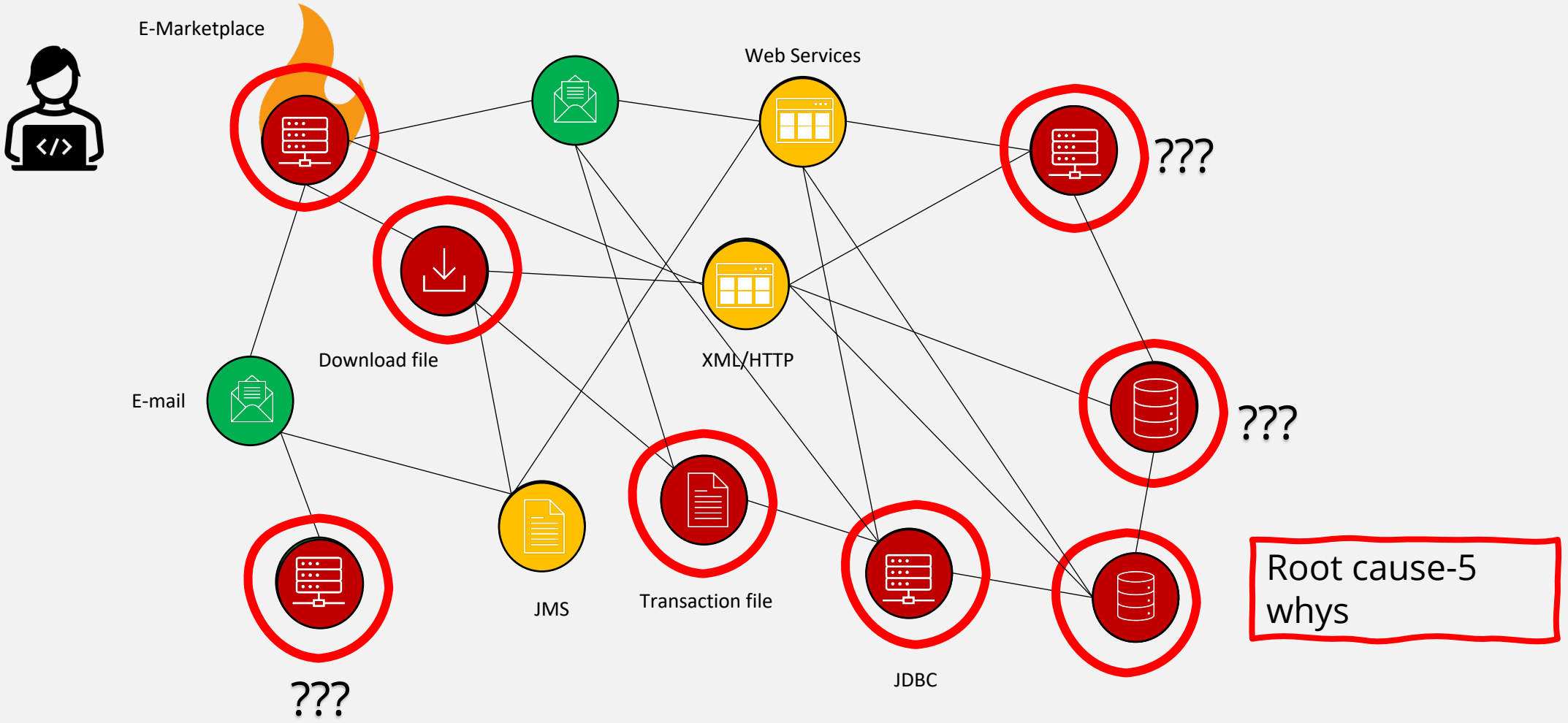
No Single Root Cause Analysis

Why

We look at multiple contributing factors because we want to try to fix everything and ensure that it will not happen again.



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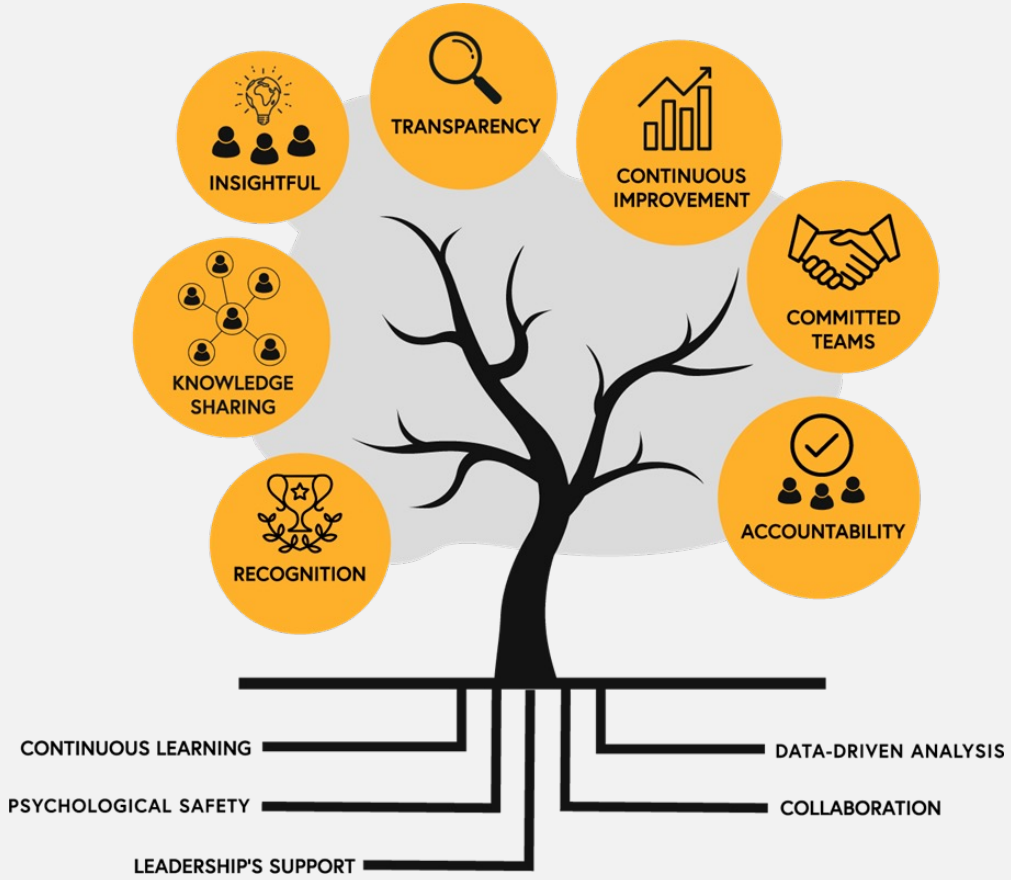
No Single Root Cause Analysis

How

We use the DBS SRE vision tree to help us guide our investigations and create multiple action items to follow up on.



Through blameless culture, we focus on the **system where the failure occurred** instead of who is at fault.

We see these inevitable **failures as learning opportunities** to improve on our system's shortcoming.

DBS

MYTH 1

There is only a single root cause to every disruption

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MYTH 2

Do not break what is not broken

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MYTH 2: Do not break what is not broken

Fact

Chaos Testing is the new norm

Chaos Engineering

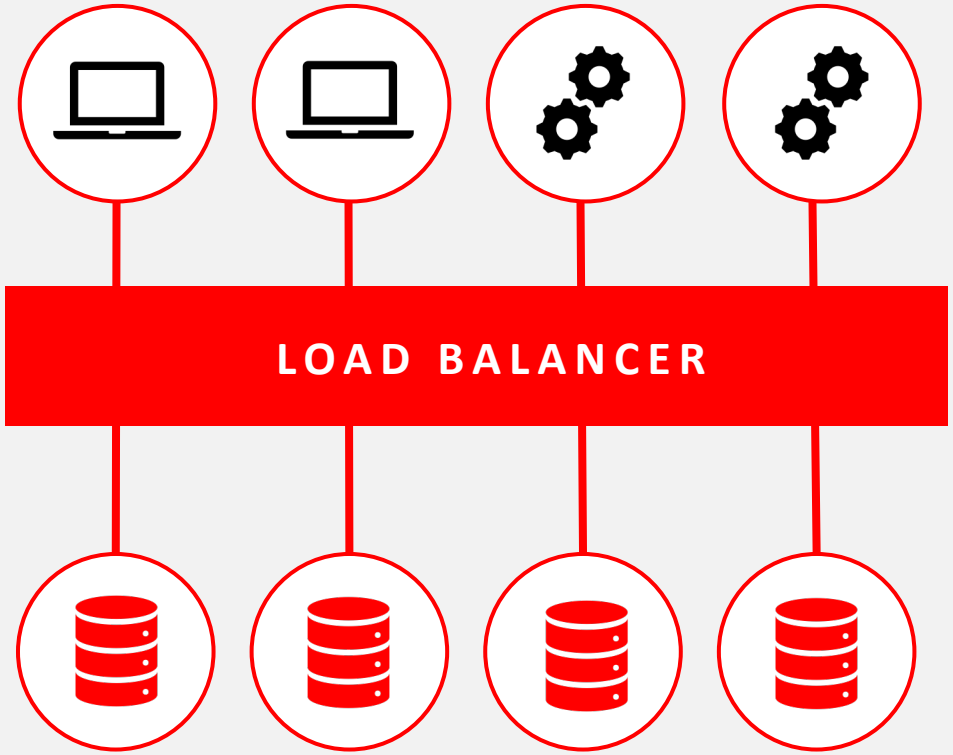
DBS

Why

While we can work on our known weakness, we can't work on our unknown weakness. We want to really explore the unknown weakness in our system so that we can strengthen them.

Why is the bank doing it?

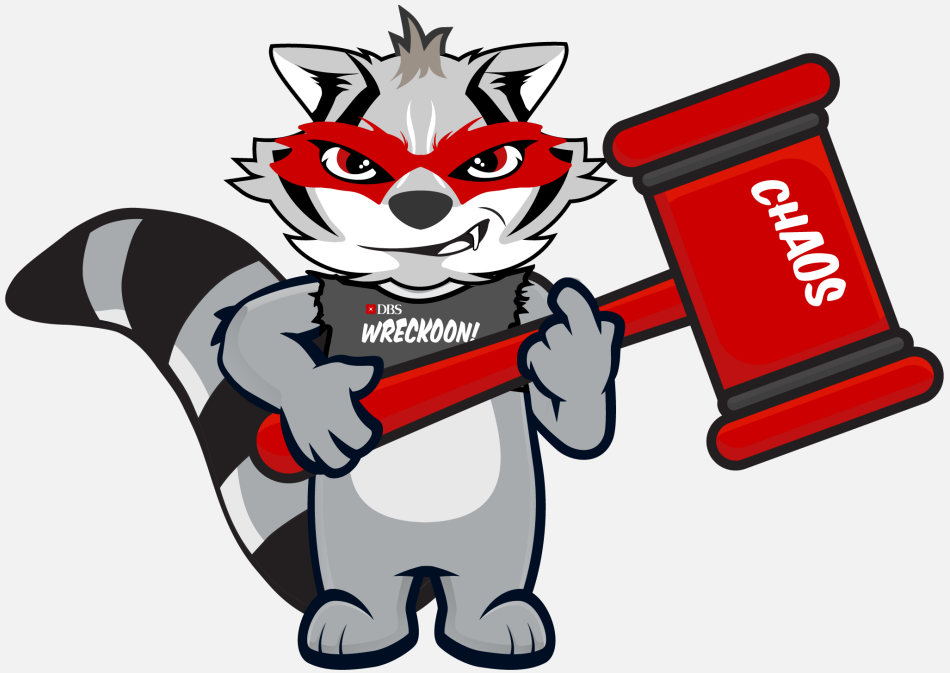
- To achieve a fault-tolerant system so as to prevent a single point of failure from bringing down the entire system.
- If one of those components fails, another one takes over automatically to ensure that the system continues to function normally.



Chaos Engineering

How

We use the principles of chaos testing to test our systems and created our own tool – Wreckoon.



- **Wreckoon** is a DBS self-service Chaos Testing tool that helps simulate failures or attacks to detect weaknesses in your application.
- ***Platforms supported:*** VPC(Linux), OpenShift, Pivotal Cloud Foundry (PCF), VIC and AWS

Key Features

- 60+ attack vectors available
- Customisable attack vectors that can be tagged to a reference name for repeated use.
- Simplified and automated reporting , insights such as Depth of Chaos
- CI/CD pipeline integration - semi automated
- Integrated with automated functional testing

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MYTH 2

Do not break what is not broken

BUSTED

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MYTH 3

Every disruption is seen as a singular independent occurrence

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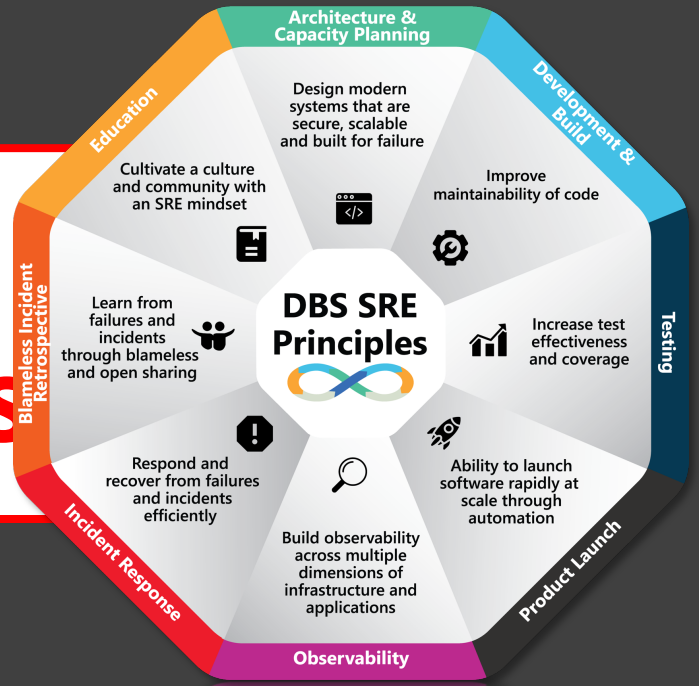
MYTH 3: Every disruption is seen as a singular independent occurrence

Fact

Data-driven insights uncover the bigger picture

Trend Analysis



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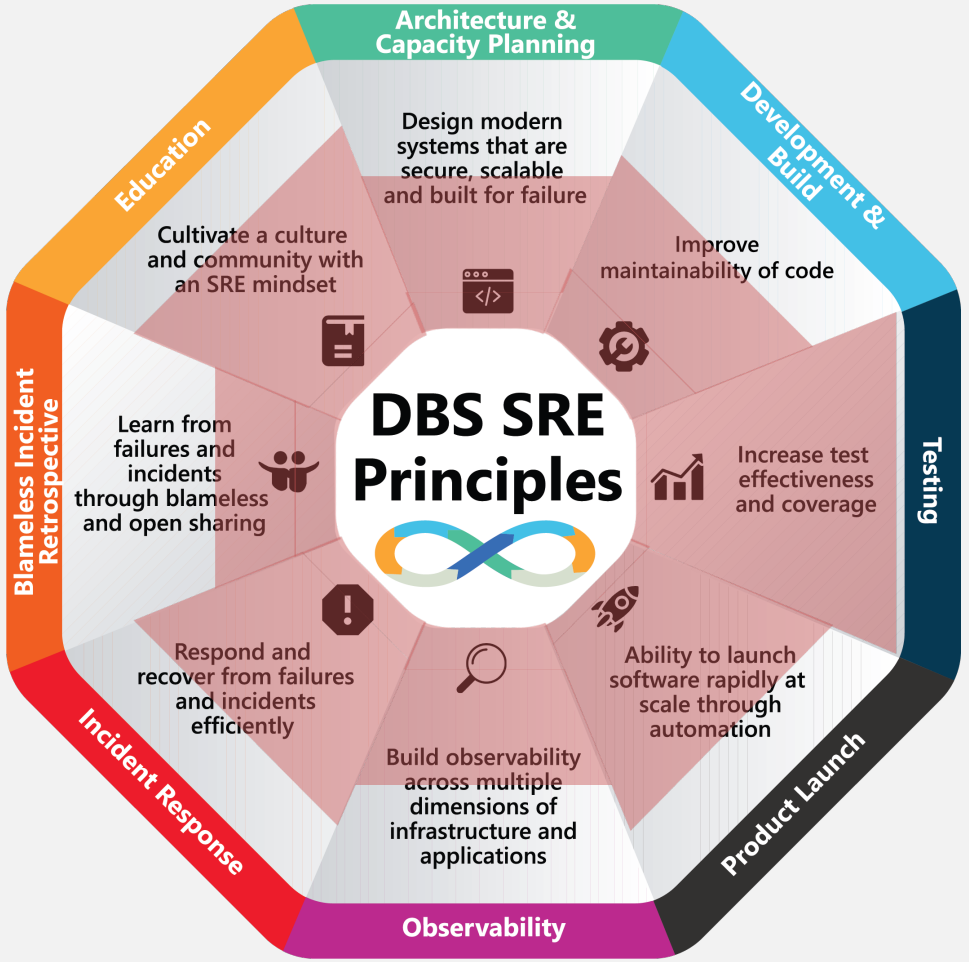
Trend Analysis

Why

We believe that with data, we can obtain valuable insights to make better decisions.

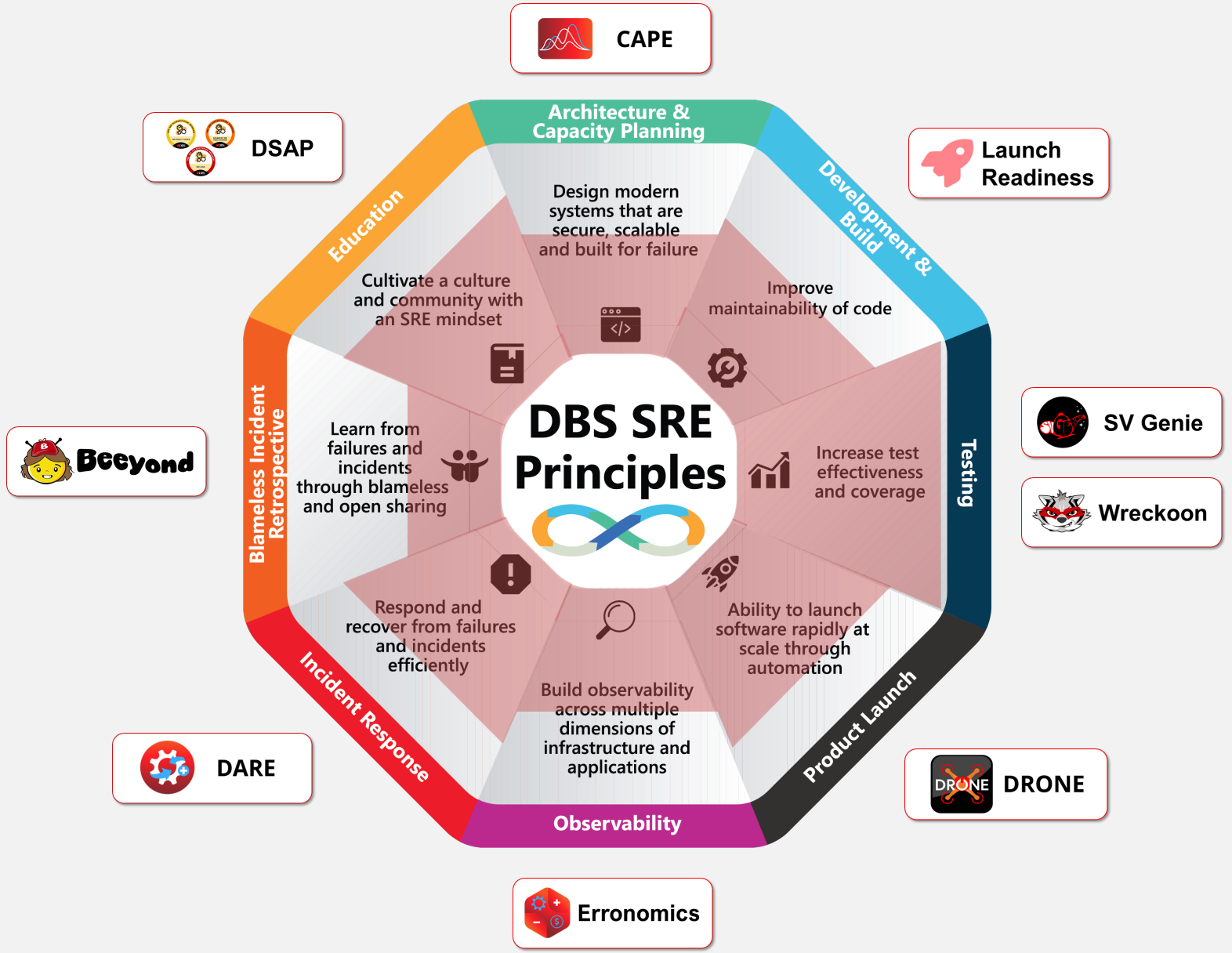


Trend Analysis

How

Using the SRE principles, we perform blameless incident retrospectives to identify where the fault lies.

By seeing things from different perspectives, we are able to analyse trends, patterns and behaviours.



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MYTH

Every disruption is seen as a singular independent occurrence

BUSTED

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In summary...

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Competitive Advantage

Moving to the cloud with our SRE Practices by creating our own cloud solutions tool, Evolve PavedCloud.

Focusing on producing reusable assets and resources such as code reuse, microservices, APIs, architecture blueprints, and shared libraries.

Aggressively shifting left to concentrate efforts on building resiliency.

But why?

We believe in fit for purpose

We don't overbuild and only scale when necessary so that we don't waste resources.

We invest in our people

We share assets so that our folks don't have to code from scratch every time. Reuse and repurpose.

We care for the environment

We build resilient infrastructure with intelligent operations to be more efficient and sustainable.

Curious about what the Technology driving the World's Best Bank looks like?

Check out our Tech Blog where our top tech minds share their ideas and insights on Site Reliability Engineering, Cloud, Data, Emerging Technology and Digital Transformation.

Follow DBS Engineering Network on LinkedIn to learn about our employees, the culture that's shaping the work we do, and how we're using technology as a force for good.

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Top 10 Business Transformations of the Last Decade
Harvard Business Review

World's Best Digital Bank & World's Best Bank
Euromoney

The Innovators – Winner (Payments)
Global Finance

World's Best Bank
Global Finance

Bank of the Year
Global Finance

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Thank you