POWERING POTENTIAL

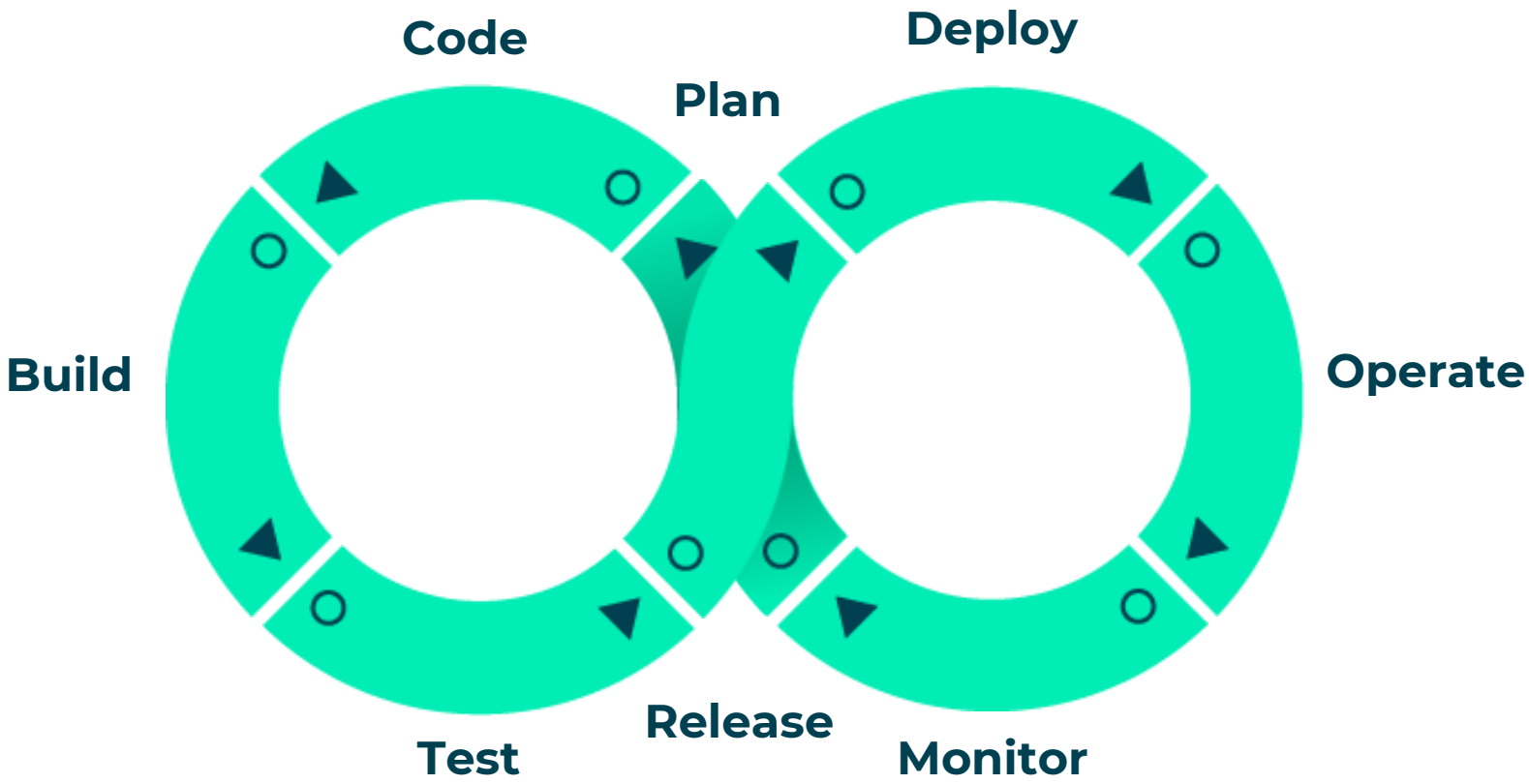
CHAPTER 3
INTRODUCING DEVOPS

TOPICS

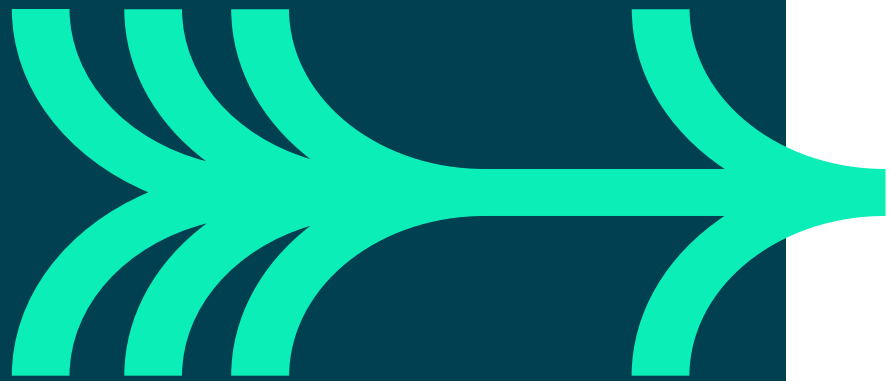
Understanding DevOps

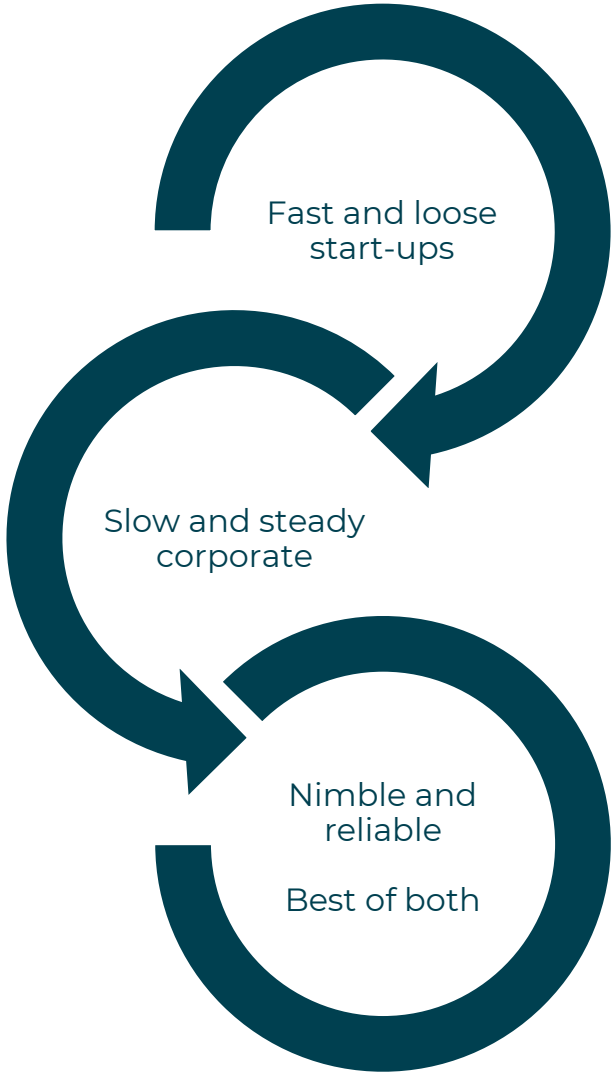
Building a DevOps culture

Software Development never ends...

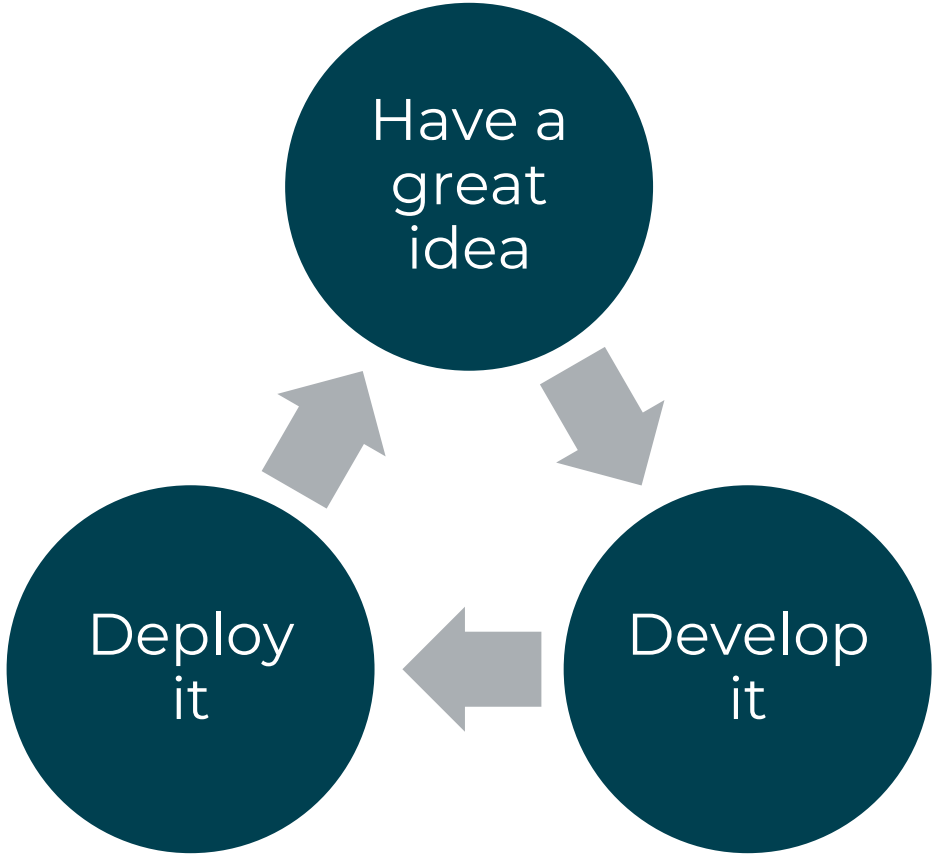


WHAT PROBLEM DOES DEVOPS TRY TO SOLVE?

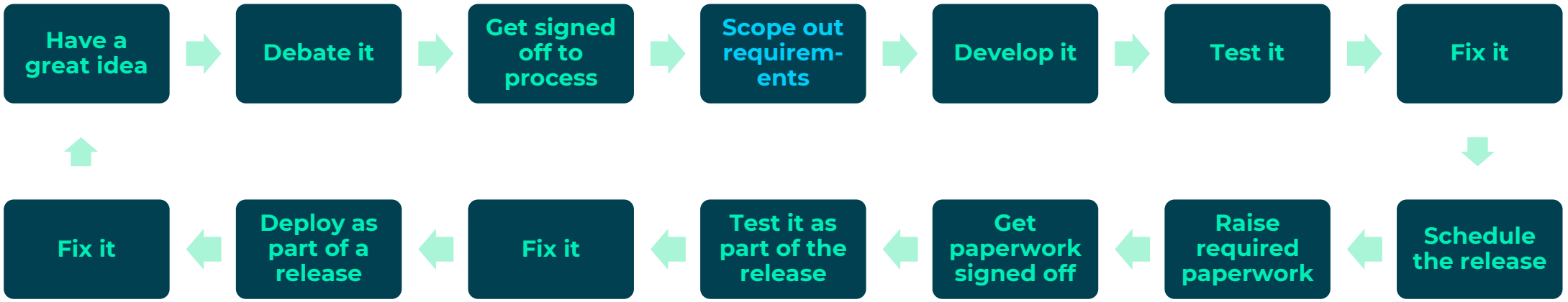




START-UPS – GREEN FIELDS AHOY!



Enterprise – Complexity Due to Scale



DEVOPS AS A NEW ROLE?

FROM THE DEV'S PERSPECTIVE

Developers that can maintain infrastructure

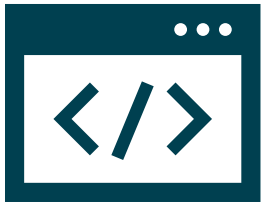
Continual delivery

Continuous integration

First Deployment

Monitored

Tested



FROM THE OPS PERSPECTIVE

Ops staff that can code

Virtualisation

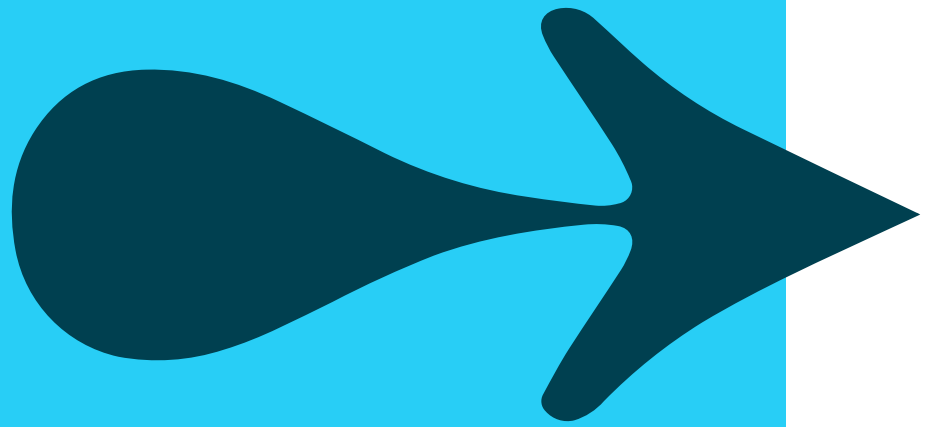
Cloud based

High availability

Testable

Maintainable

Reproducible



FROM THE QA / TESTER PERSPECTIVE

Testing as a shared responsibility

Testable

Monitored

Reproducible

Version managed

Maintainable

FROM THE BA / PM PERSPECTIVE

Data that matters; visibility, improvement

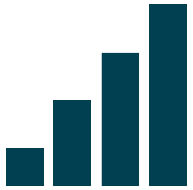
High availability

Maintainable

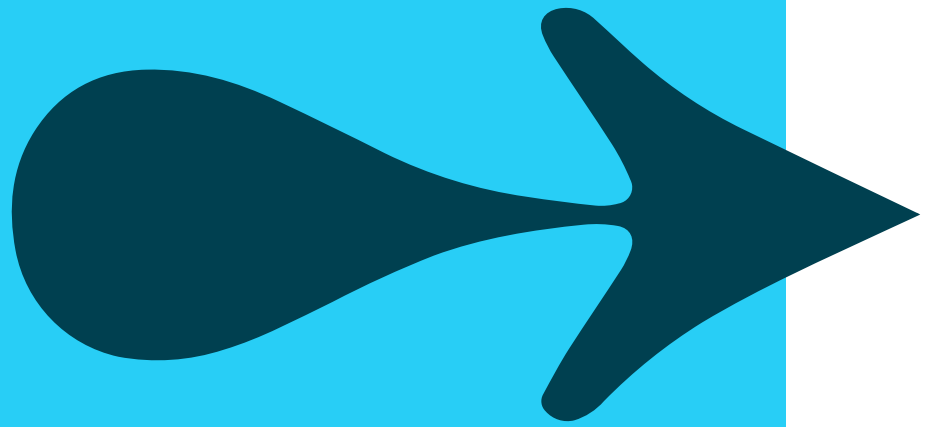
Reproducible

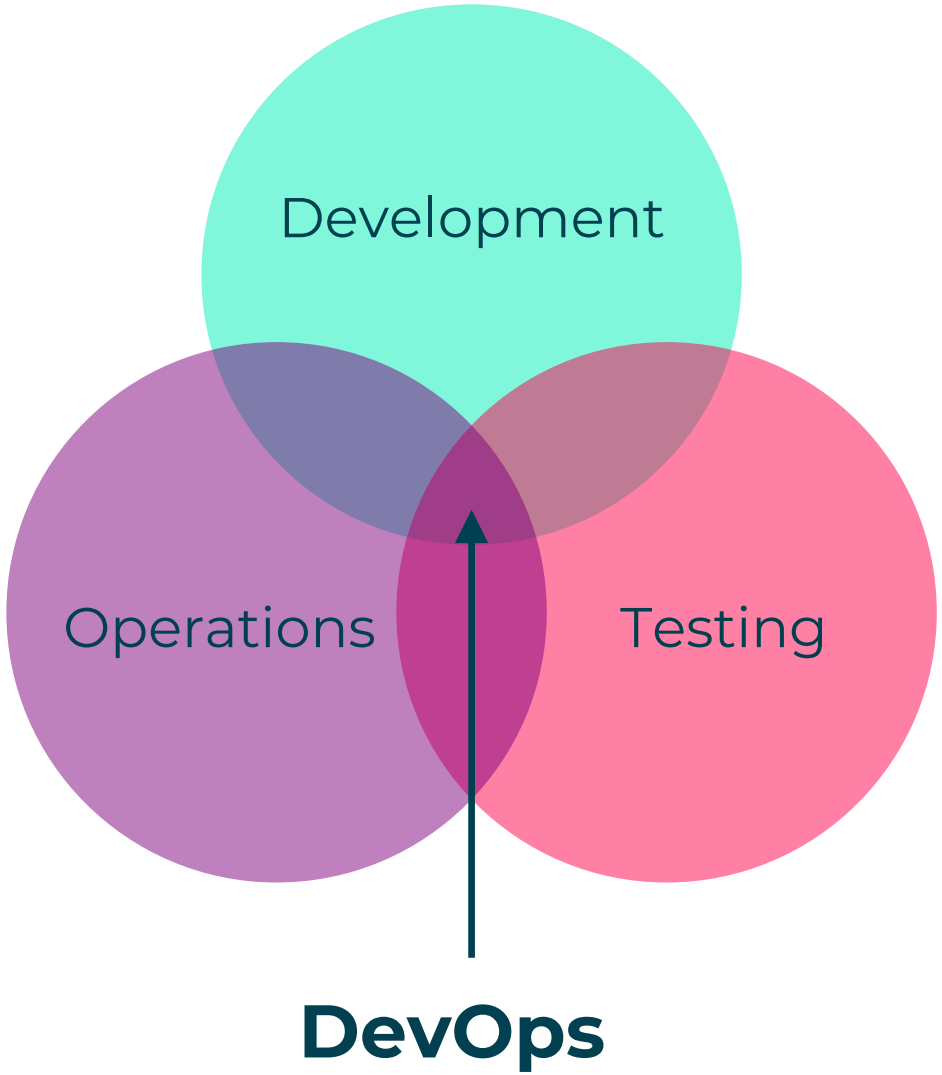
Continuous improvement

Measurable

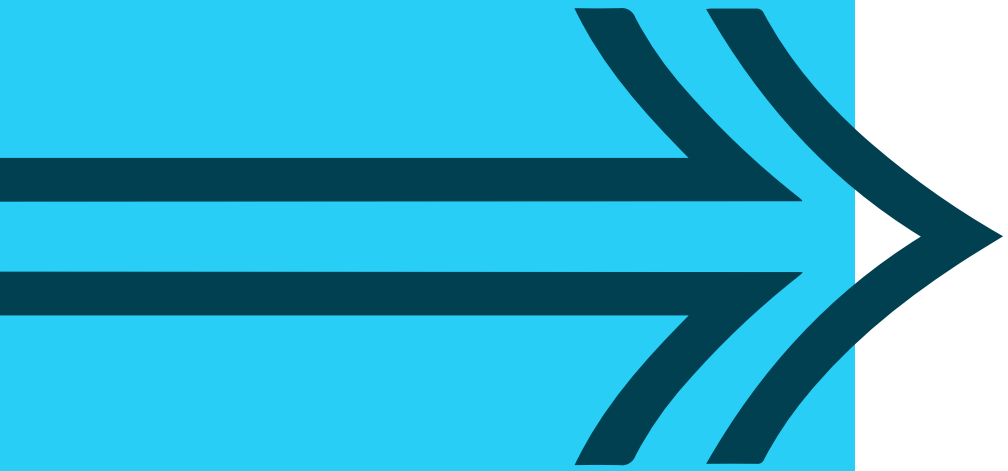


DEVOPS – WE'RE ALL IN THIS TOGETHER!





KEEP CALMS AND DO DEVOPS



DevOps – The C.A.L.M.S Lifecycle:

C – Culture

A – Automation

L – Lean

M – Measurement

S – Sharing

Culture

- **Sharing the same**
  - vision,
  - goals and
  - Incentives

- Open, honest, two-way **communication**
- **Collaboration**
- **Pride** of work
- **Respect** others
- **Trust** others
- **Transparency**

CHANGE OF CULTURE

From	To
IT focus (inside-out)	Customer focus (outside-in)
Silos	Cross-functional teams
Command and control	Collaborative
Task-oriented	Outcome-oriented
Blame	Taking on responsibility
Reactive	Proactive
Content with the old	Courageous
Resistant to any change	Flexible
Low trust in others	High trust
Covered up any failure	Responsibilities are shared
	Failure reported and investigated
Novelty is crushed	Novelty is implemented

People don't resist change.
They resist being changed. Peter Senge

Evolve Experimentally

It is important that instead of processes being adopted, it is adapted.

Jutta Eckstein

Implement Feedback Loops

Ignoring feedback merely means that the system will eventually experience a massive unpleasant surprise rather than a small unpleasant surprise.

John Gall

DevOps is Collective Responsibility

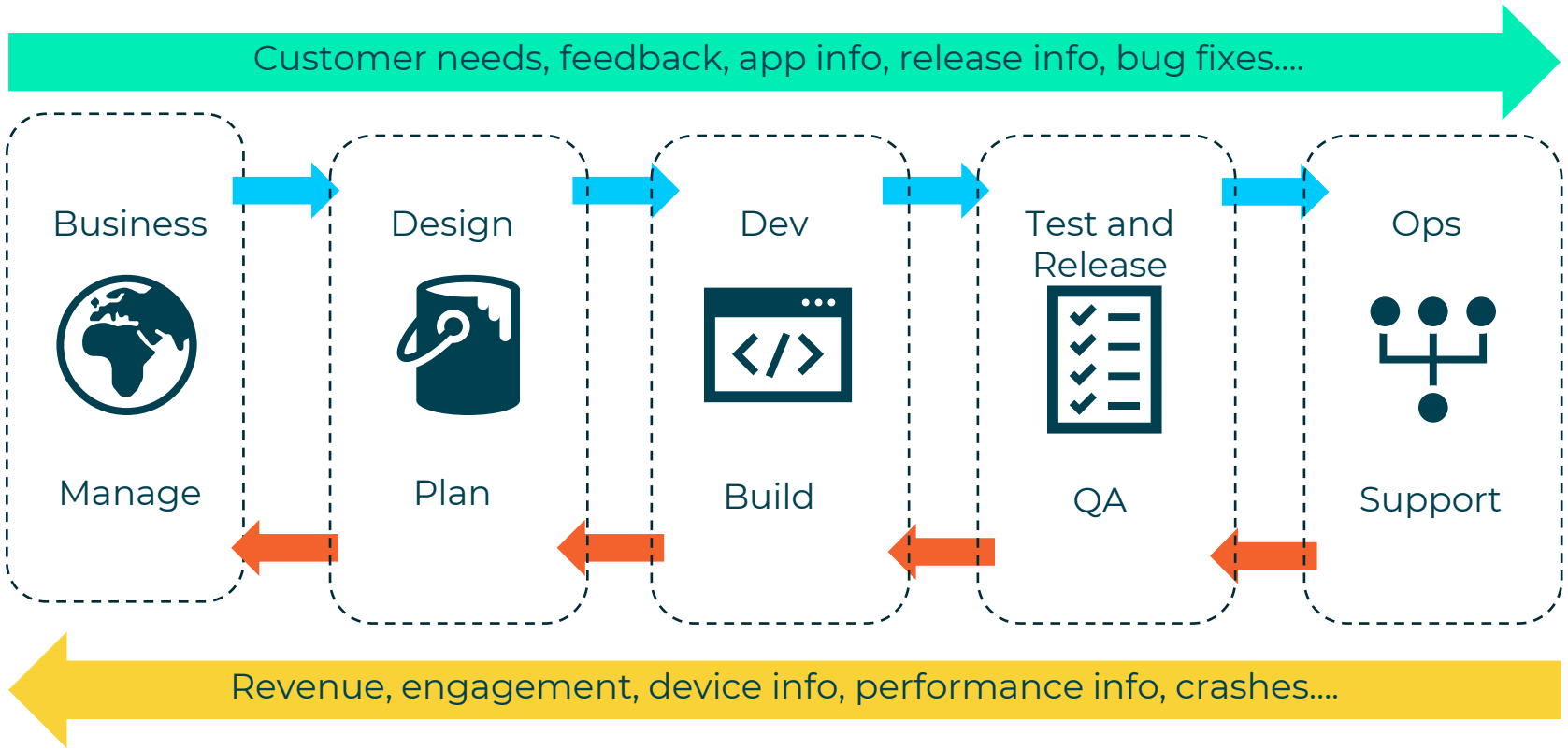
It's not the tools that you have faith in –
tools are just tools. They work, or they don't work.
It's people you have faith in or not.

Steve Jobs

S – Sharing

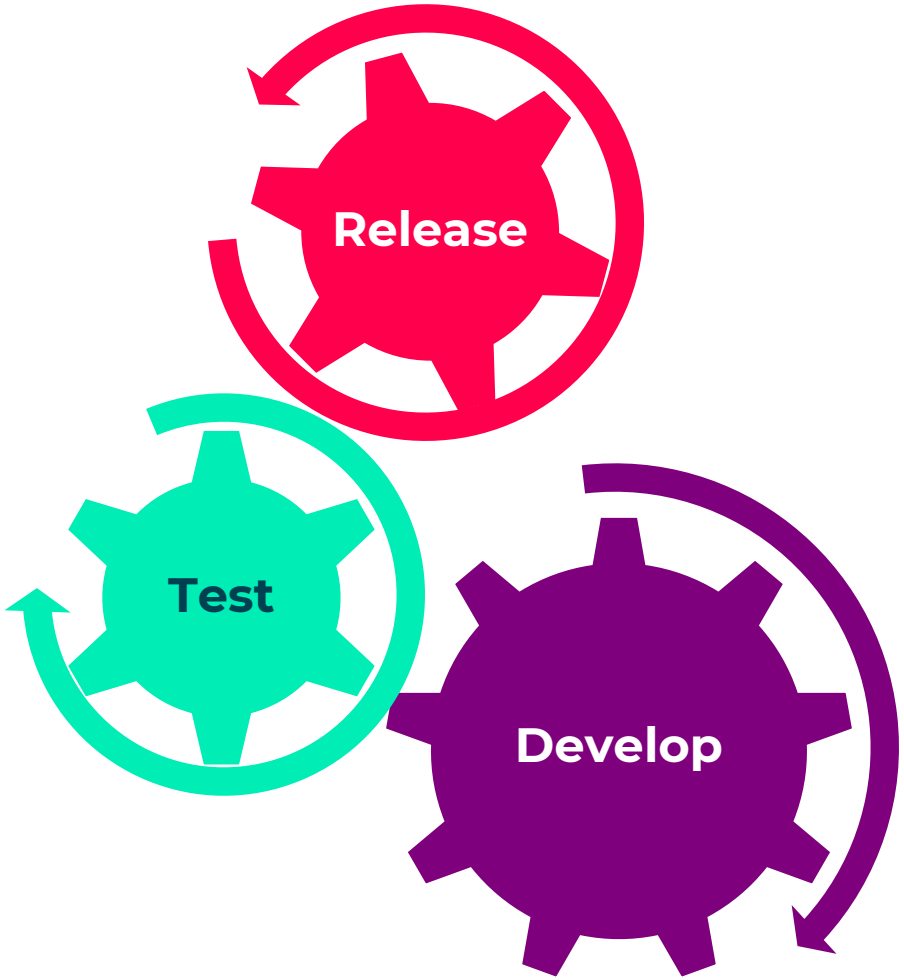
"Knowledge is experience, everything else is information."

Albert Einstein



A – AUTOMATION

Tools make automation possible



Amazon push code to production every 11.7 seconds

WHAT STOPS US?

“It’s too complicated.”

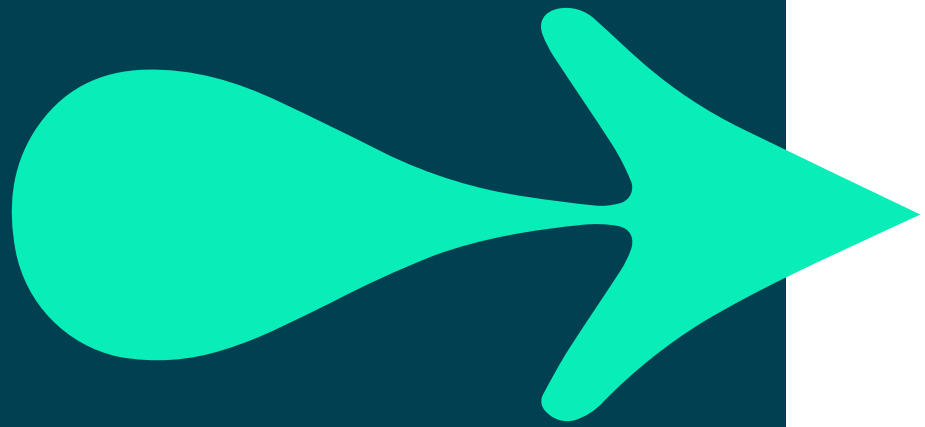
“I’ll break it.”

“What’s with all this code?”

“What is GitHub?”

“That’s not my responsibility.”

“Above my pay grade”



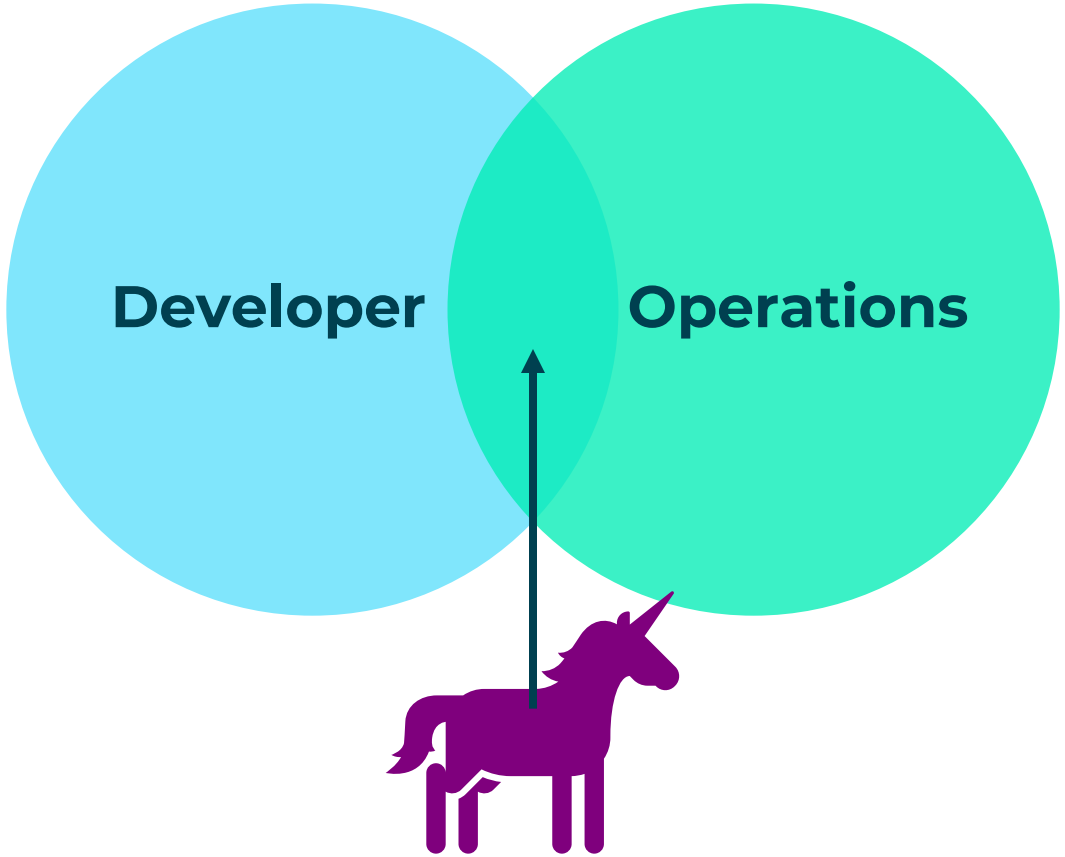
Reasons why organisations fail to change

WE NEED ROUNDED WEB PROFESSIONALS

The agile world demands multifaceted teams

- No-one working in development can choose not to be involved
  end-to-end

The type of Skills Required are Different



BE THE UNICORN

L – LEAN – WORKS WITH AGILE

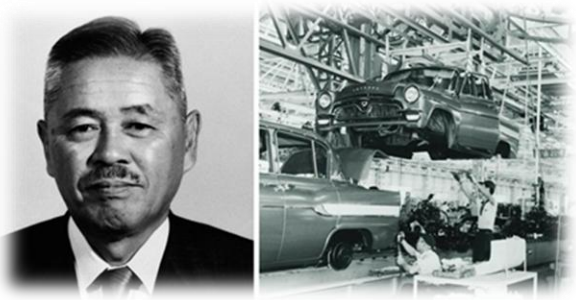
1. Eliminate Waste
2. Build Quality In
3. Create Knowledge
4. Defer Commitment
5. Deliver Fast
6. Respect People
7. Optimise The Whole

Mary and Tom Poppendieck

CONTINUOUS IMPROVEMENT

Continuous improvement

- Kaizen – 'good change' – continuous improvement mindset

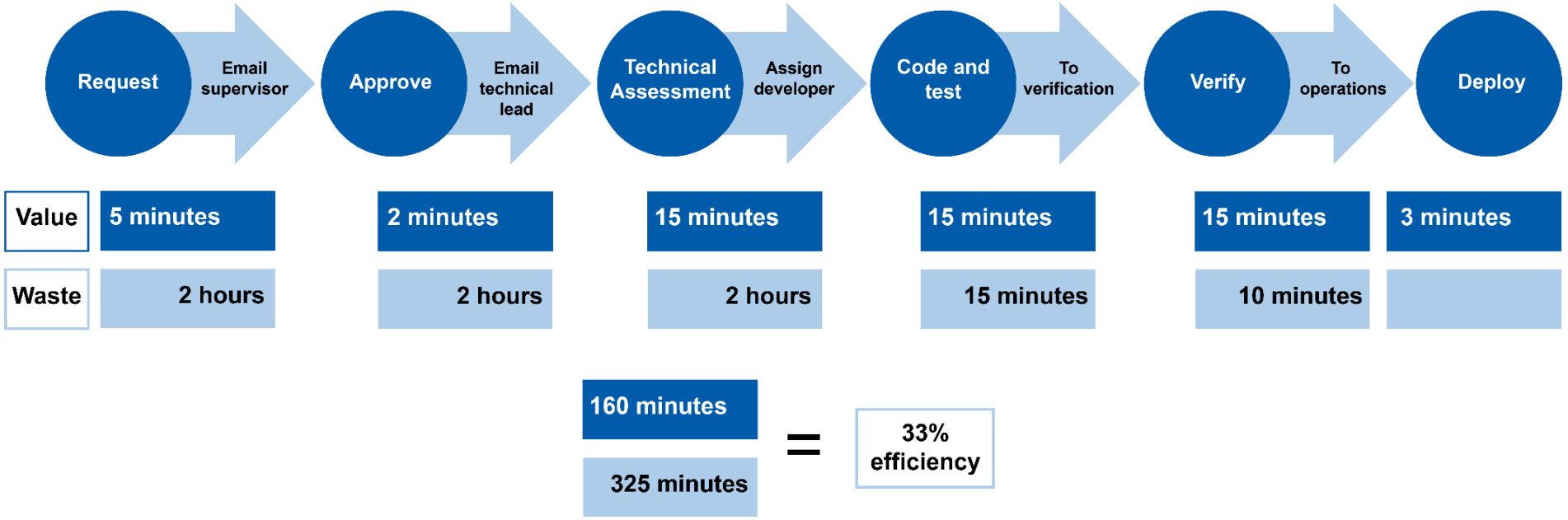


Taiichi Ohno – the father of Lean

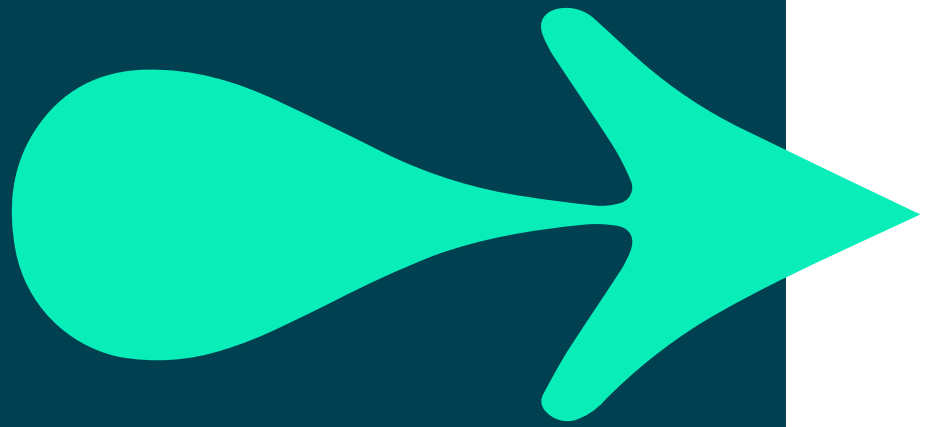
Targeting areas for improvement

- Bottlenecks
- Waste elimination
- Reduction of variability

Example – Value Stream Map



WE USE TOOLS FOR REASONS



Automation

Orchestration

Configuration

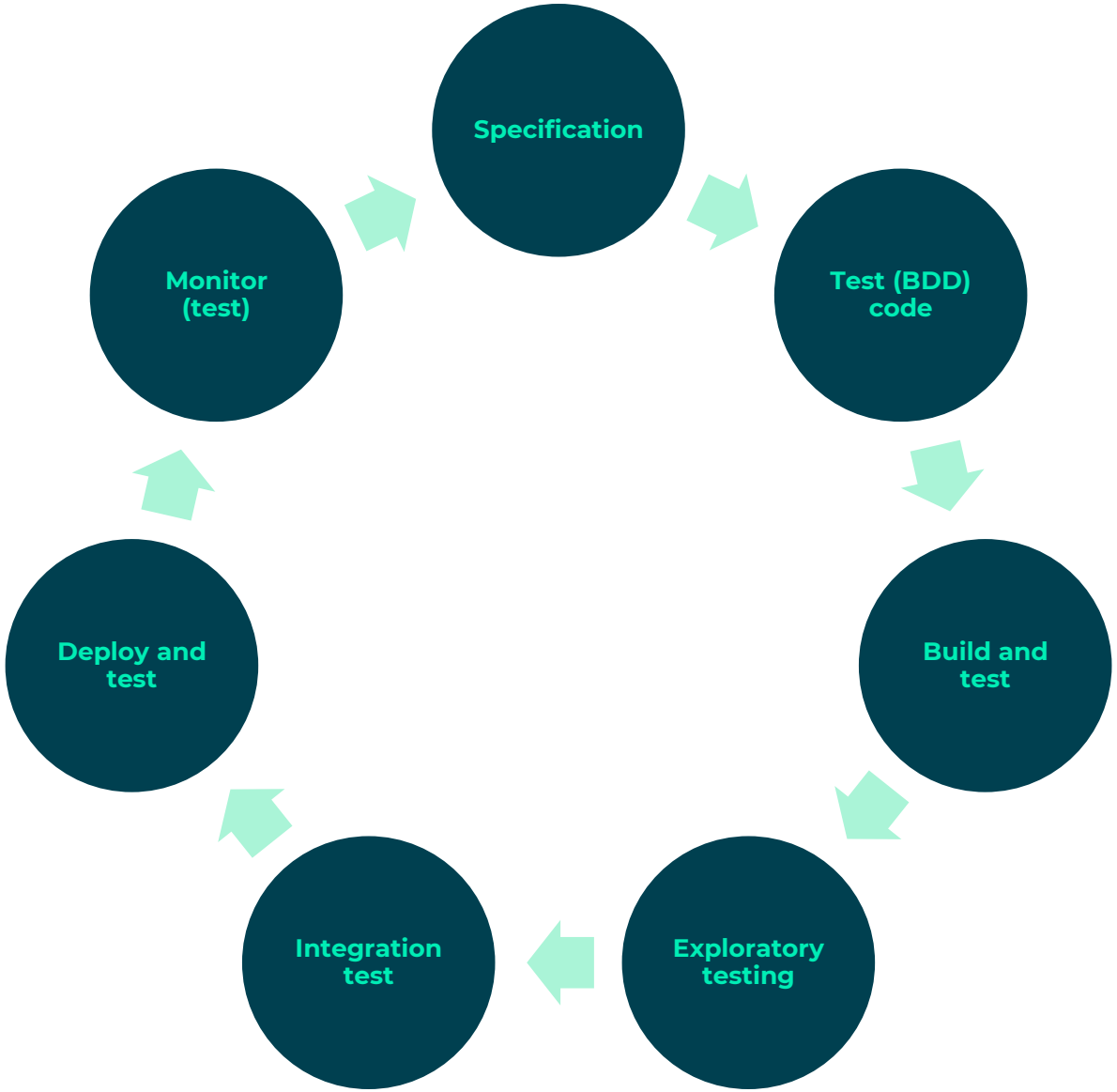
Testing

Logging and **monitoring**

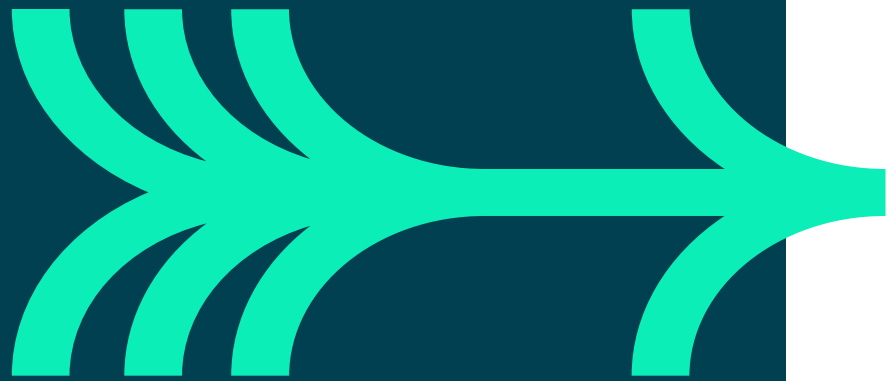
Continuous integration

Continuous delivery

TEST BASED DEVOPS



THE NEXT GEN DEVOPS LIFECYCLE



Organisation evolving into DevOps practice should use:

- An automated **testing framework** focused on behaviour
  A strategy that focuses engineers on testing
- Applications designed from the bottom up to be **testable**
- Configuration management solutions that allow
  rapid creation and deployment of any environment
- Dashboards to display and **monitor** the status of the system

POWERING POTENTIAL

THANK YOU

Hope you enjoyed this learning journey.

WHAT IS NOOPS?

NoOps stands for no operations

- IT environment can be so automated and abstracted that no dedicated in-house team is needed to manage software

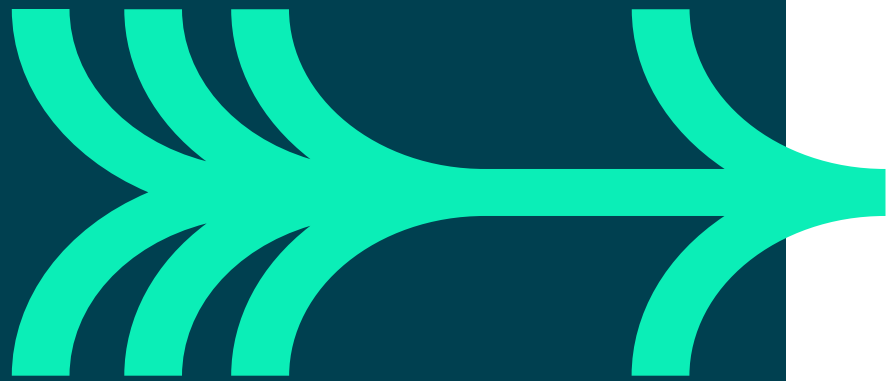
- Main drivers are IT automation and cloud computing

WHAT IS WEBOPS?

WebOps, short for Web Operations

- Focuses on the development, deployment, maintenance, and scaling of web applications. It enhances efficiency and performance through automation and specialised web tools
- **The area of WebOps engineering includes:**
- Application deployment
- Management
- Maintenance
- Configuration
- Repair

A LESSON FROM NETFLIX



Simian Army

- Software that reap havoc on their production systems

A new approach to architectures – microservices

- Teams must clearly understand what service failure means to the system as a whole
- Live service testing is becoming a new norm –
  Netflix simian army used to test resilience and monitoring
- A lot of real-time monitoring
- Detect – requests/second, and transactions/second
- Respond
- Performing “semantic monitoring”
- Run subset of automated tests against live system