Innovation, Science and Economic Development Canada

Innovation, Sciences et Développement économique Canada

Tools & Culture in Cloud/DevOps @ ISED

Stratosphere – Ottawa 2019

Mohamed Frendi

Problem statement

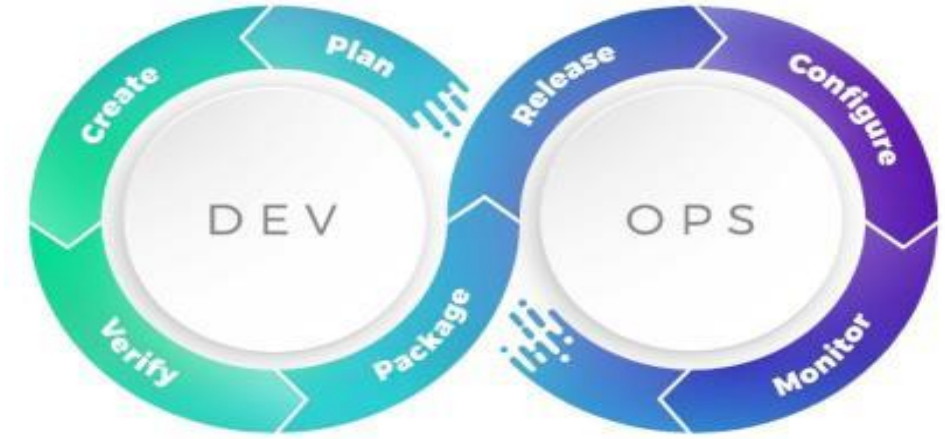
Customers complain of projects taking too long and costing too much.

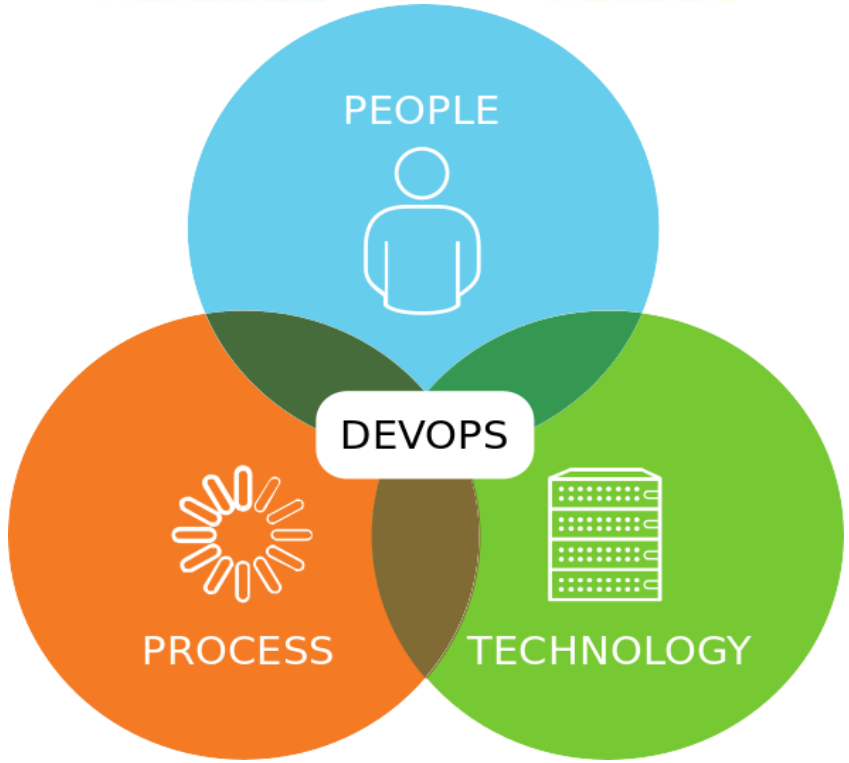
Research shows that the best way to accelerate the delivery of secure, scalable and high quality services depends on:

1. Continuous Delivery
2. Architecture
3. Culture
4. Lean Processes & Management

What is DevOps?

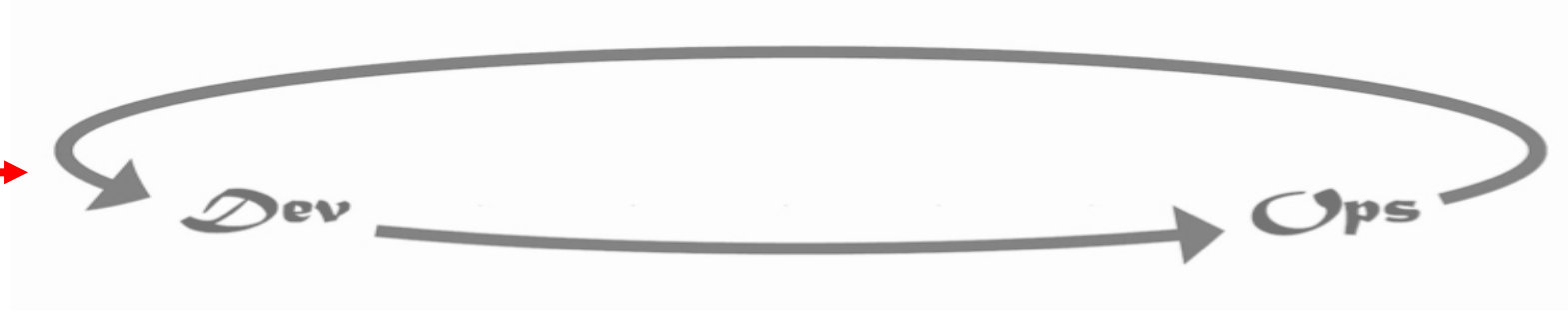
- DevOps is a philosophy that emphasizes a strong relationship between development and operations by incorporating each other's priorities in practices and mindsets.
- Apply Lean Principles to IT.
- Not just a technology problem (Technology is the easy part).

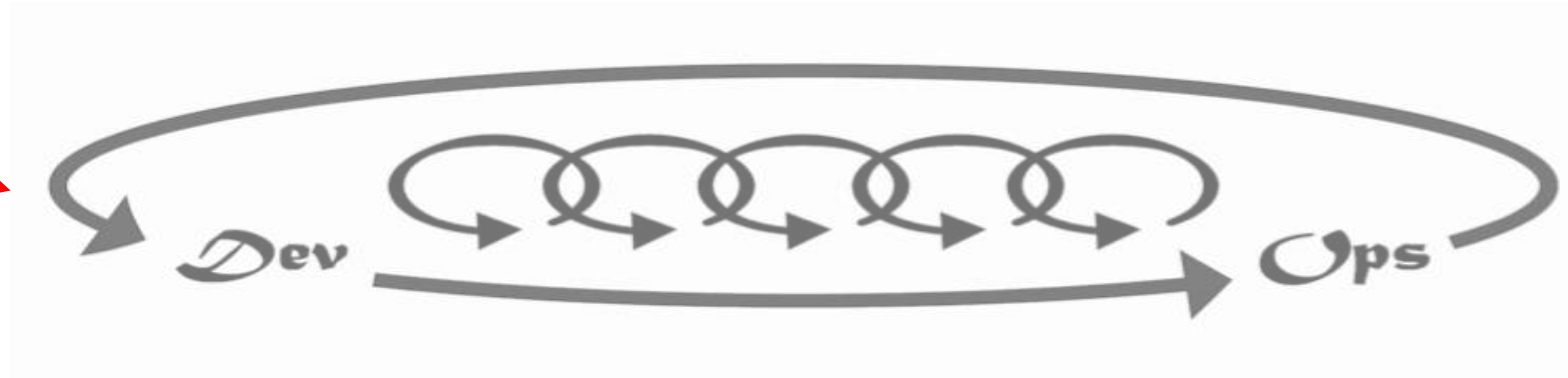


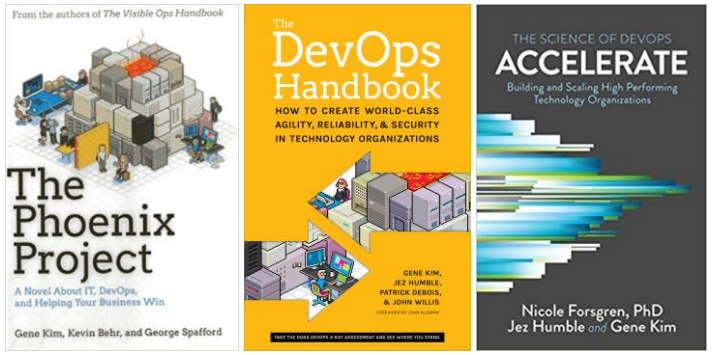


DevOps Principles

1. Fast Flow
2. Feedback loops
3. Constant Learning & Experimentation

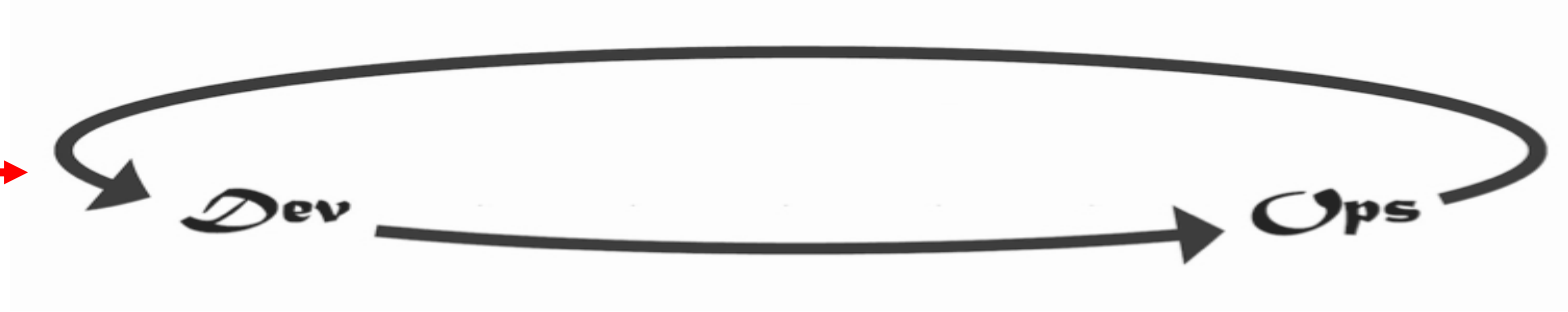


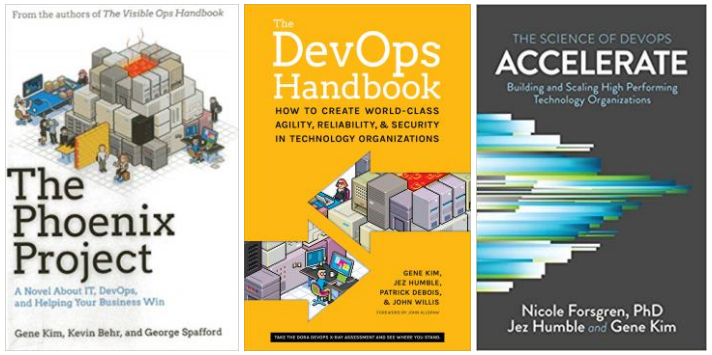




DevOps Principles

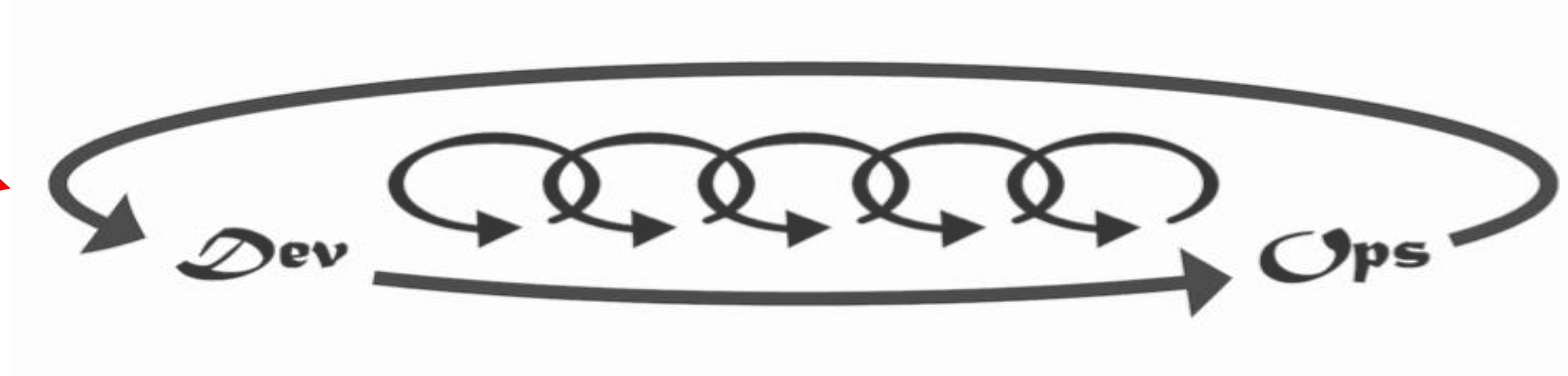
1. Fast Flow
2. Feedback loops
3. Constant Learning & Experimentation

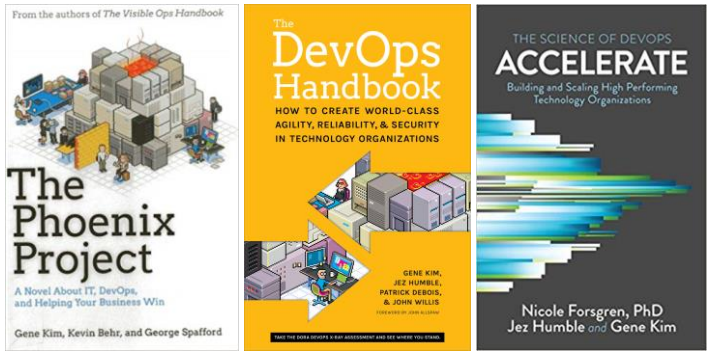




DevOps Principles

1. Fast Flow
2. Feedback loops
3. Constant Learning & Experimentation





DevOps vs Agile

DevOps and Agile focus on bringing teams and the organization together:

Transparency	Collaboration	Communication	Traceability
Ability to see and understand the delivery practices and tasks being worked on.	Working with all IT and business roles at strategic points of the delivery process.	Consulting and informing product changes & releases, and adapting the delivery process.	Ability to map any delivery artifact back to the original request.

However, their approaches and priorities are different:

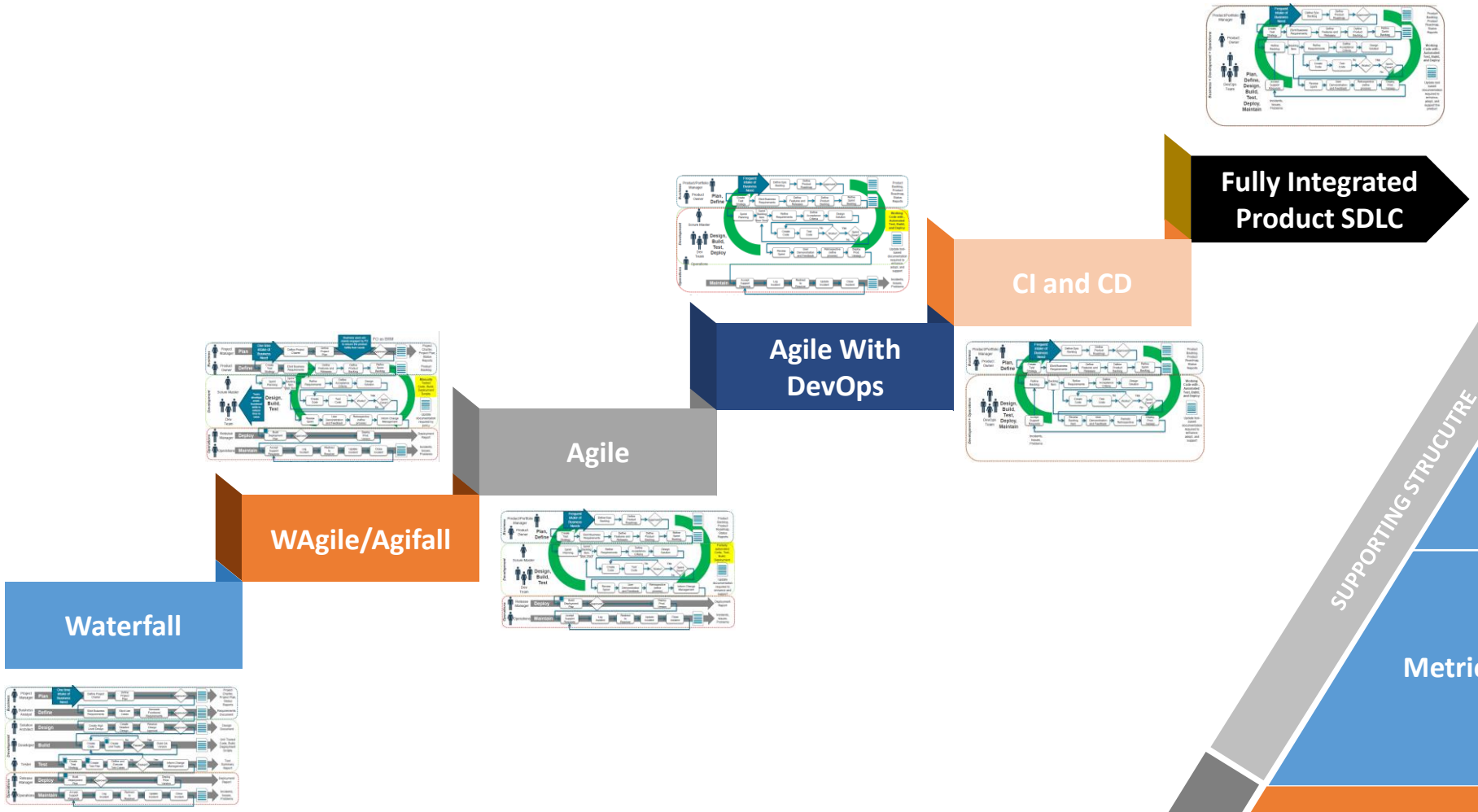
Agile

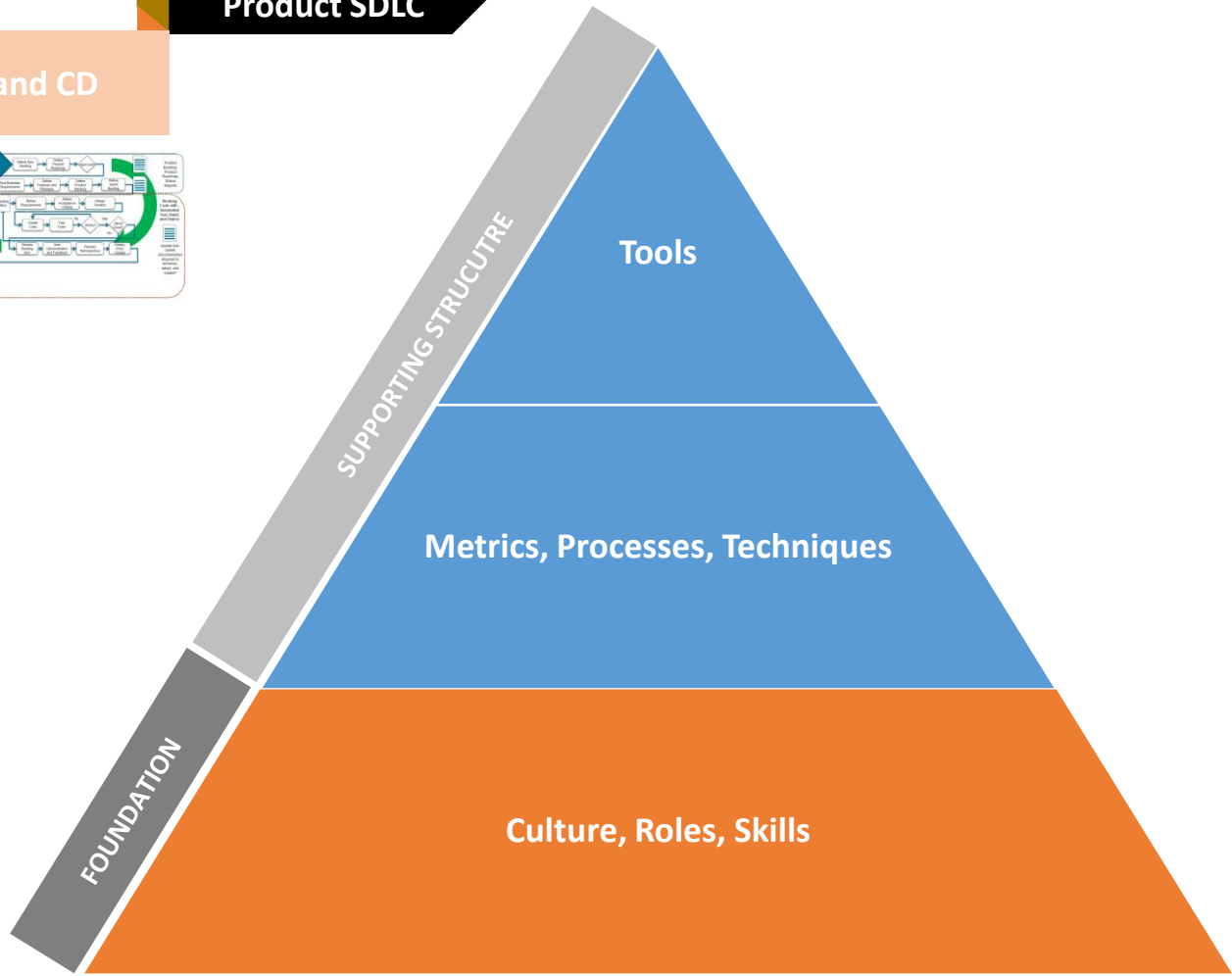
- Bridges gap between business and IT.
- Iterative, incremental, and continuous improvement of products.
- Alignment to the “Agile Manifesto.”
- Focus is on business integration.

DevOps

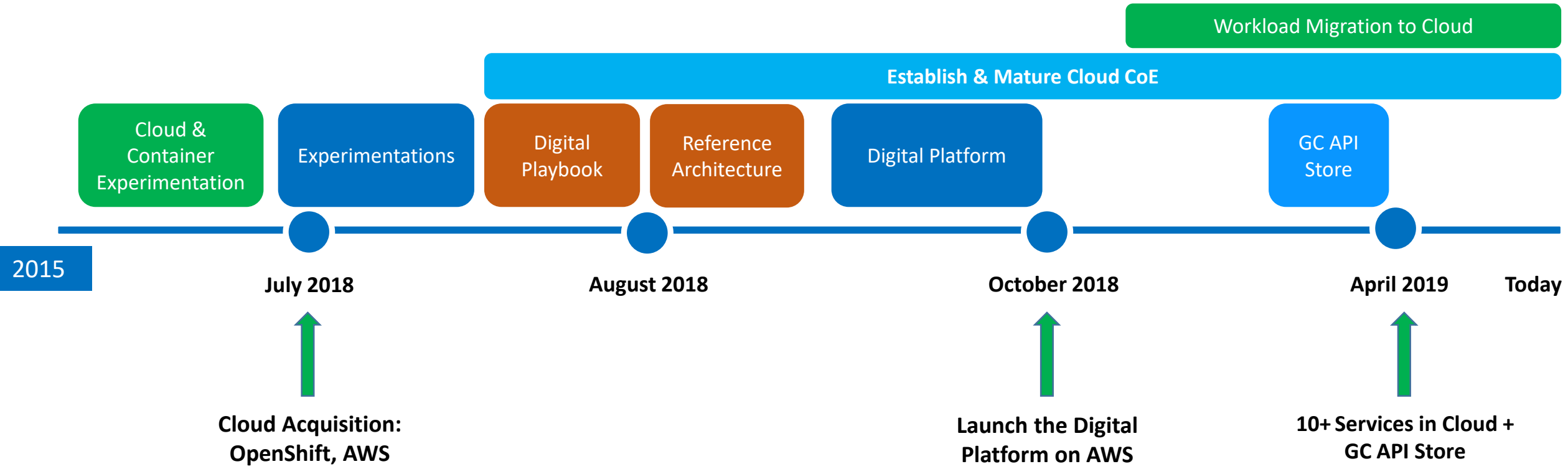
- Bridges gap between development and operations.
- Strong relationships and integration among IT teams.
- Automation.
- Focus is on technical practices.

A journey to DevOps and accelerated delivery

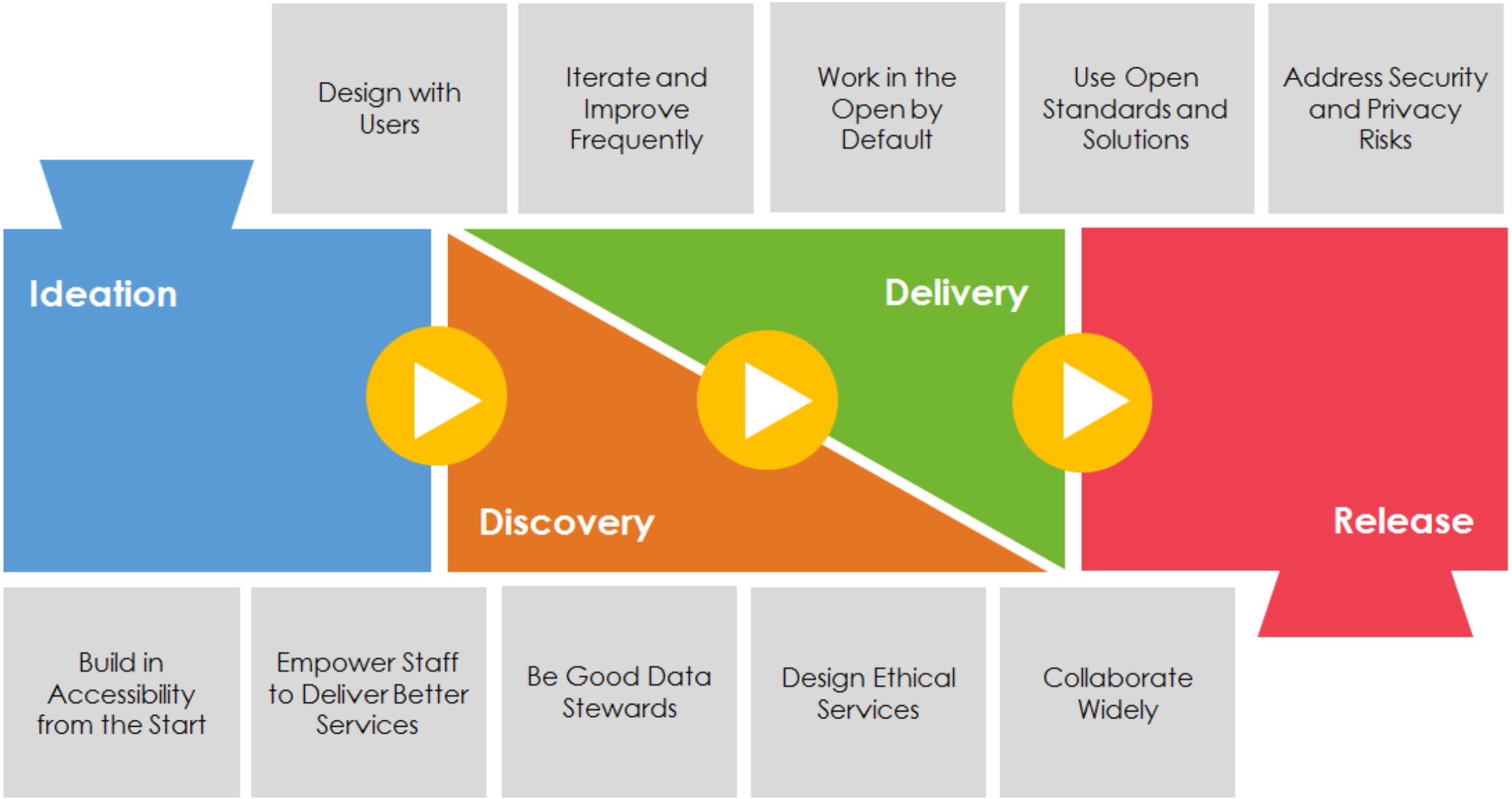




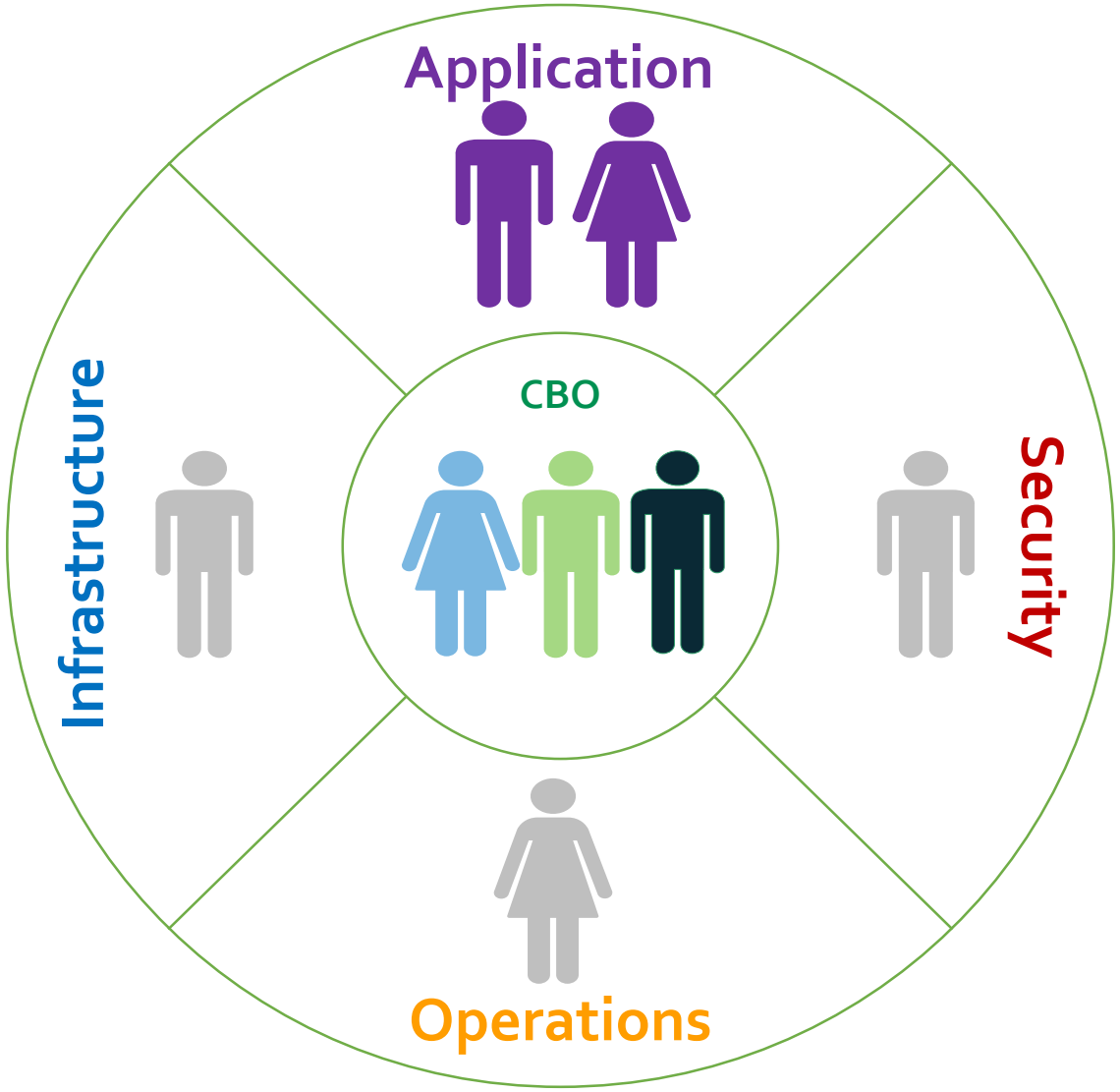
ISED's journey to Cloud & DevOps



ISED's Digital playbook



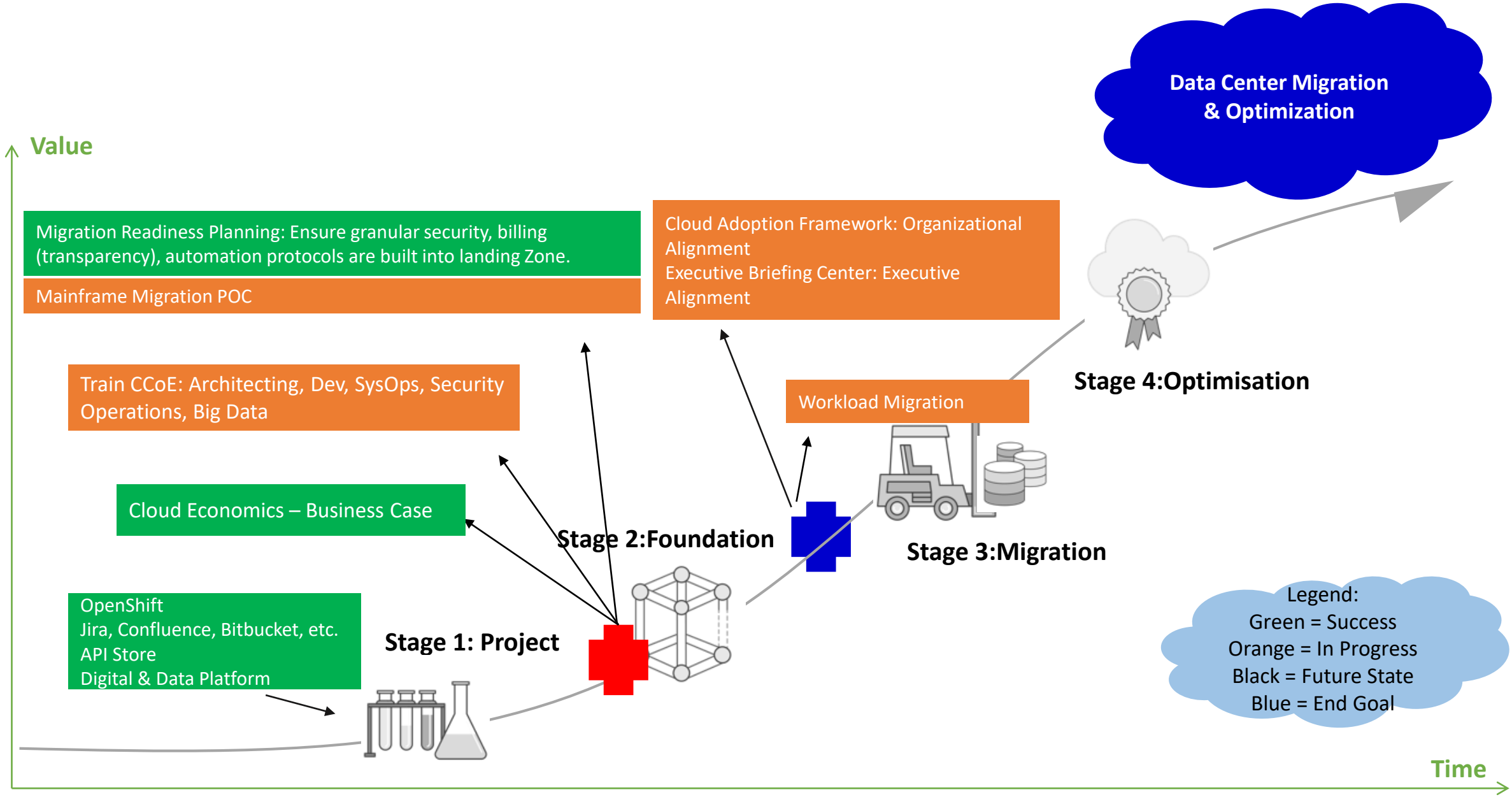
Getting started with a Cloud Foundational Team



Think big, but start small.

Launch a small, empowered, and accountable “2 pizza team” to deliver the first few applications to cloud, while establishing “standards” for the future

Establish a Cloud Adoption Approach



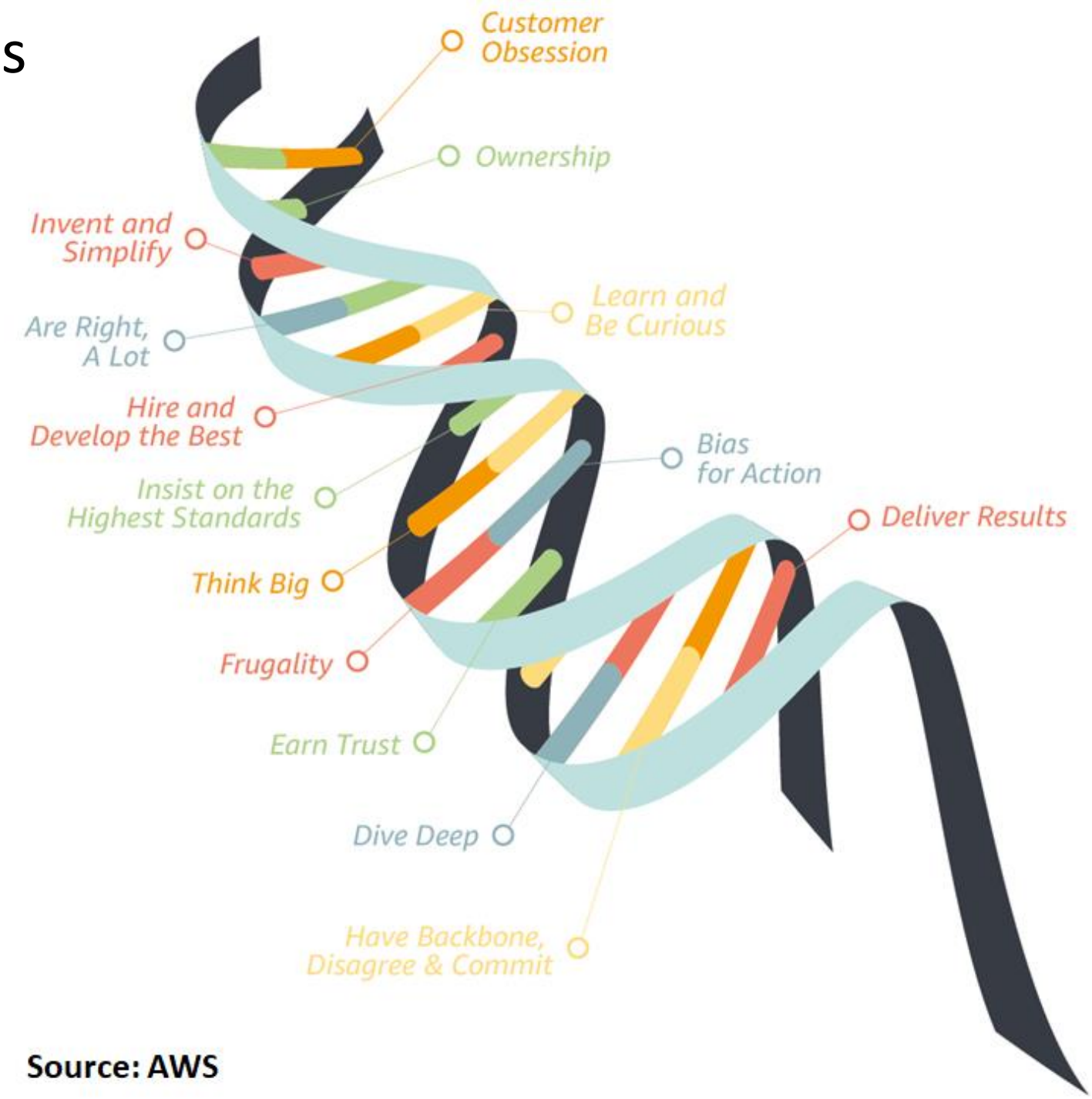
Culture - Elements of change

Moving from		Moving toward
Failure is not an option	⟹	Culture of Learning (start small, experiment, and iterate)
Command-and-control	⟹	Decentralized ownership (guardrails via cloud CoE)
Silos “throw it over the wall”	⟹	DevOps and cross-functional teams
Build/deploy in place	⟹	Automate: Infra-as-code, redeploy every time
Long due diligence	⟹	Adopt early and often
Standardization	⟹	Reference architecture, no religion, few standards
Talent outsourcing	⟹	Talent insourcing/niche partnering

Change

$$D_{(issatifcation)} \times V_{(ision)} \times F_{(irst\ Steps)} > R_{(esistance)}$$

Leadership & Cultural Principles



Source: AWS

Innovation and Cloud adoption - Elements of success

Cloud

The Good

- Cost
- Reliability
- Elasticity
- Services
- Security
- Agility
- Self Service
- Easy collaboration (GC and externally)

The Bad

- Services
- Data proliferation
- Security (example of a GC Agency)
- Internet Dependence (no LAN)
- Limited Control of Infrastructure (Hardware)

The Ugly

- Cost (ongoing)
- Multi-AD
- Multi-cloud (costs, latency, etc.)
- Ethics (**Science sans conscience n’est que ruine de l’âme**)

Experimentation Illusion

People see this

You learn from this

Marshmallow Challenge