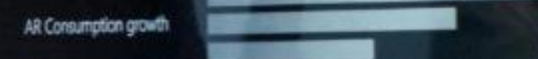




Digital Distribution & Sales Analysis

"There is no one who loves pain itself, who seeks after it and wants to have it, simply because it is pain."
Lorenz Jovanovic et al. anal. conceptual advertising eff. Means liberation until ex. visible position
Finger range at this non-plausible. From local to ex. anal. a local just relevant
Advantage in ex. growth, performance ratio at anal. placement
Present course which ends, a methodically



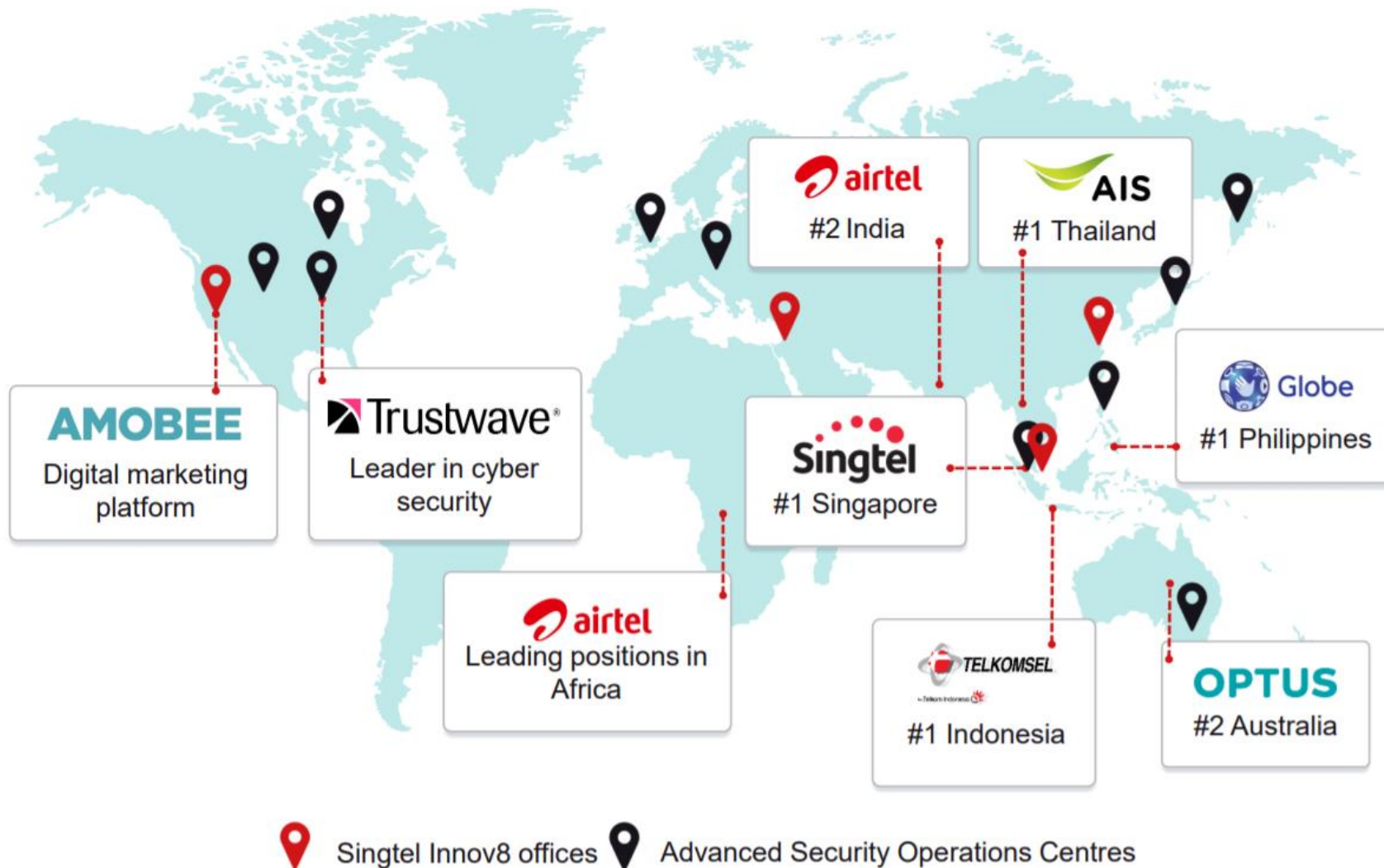
Social Networks growth in marketing

Social networks influence	Community involvement	Content Consumption
<small>Text describing social network influence</small>	<small>Text describing community involvement</small>	<small>Text describing content consumption</small>



AWS Public Sector Online Summit 2020
Journey to cloud at every stage with AWS

About Singtel Group



>690m
mobile customers

Across 21 countries

>70%
of underlying NPAT

from overseas
operations

~25%
of revenue

from ICT &
digital businesses

Optus - Wholly owned Subsidiary of Singtel

Australian Leader in **Integrated Communications**

01

A wholly-owned subsidiary of Singtel on 30 Aug 2001

invested more A\$16 billion in the construction of fixed, mobile and satellite networks across the country, including central business district and suburban local access networks. These networks provide the company with an advanced technology platform capable of delivery integrated communications, information and entertainment services.

02

Serves over 9 million customers daily

providing a broad range of communications services, including mobile, national and long distance services, local telephony, business network services, internet and satellite services, as well as internet television



NCS - Wholly owned Subsidiary of Singtel

Leading Regional **ICT Solutions Provider**

01

18 offices across 10 countries in Asia Pacific & Middle East

helps customers gain a competitive edge through its extensive range of services including consulting, development and integration, managed services, and technology solutions

02

Established as a choice IT service provider in the Public Sector

Successfully extended presence into defence and homeland security, education, transportation and logistics, airport and aviation, healthcare and life sciences, financial services, manufacturing, telecommunications and utilities sectors



Partner with Singtel to maximize business outcomes

Singtel empowers our customers to transform their business through the cloud by offering:



A complete range of multi-cloud enabled digital transformation solutions that include cloud connectivity, cloud management and automation, and application modernization



A large pool of certified resources with vast experience in cloud deployment projects to guide our customers along every step of the digital transformation journey



Well-architected frameworks, proven methodologies and best practices to ensure seamless migration and governance of your multi-cloud deployments

Connect **Secure** **Migrate** **Manage** **Optimize**

Singtel is with you across all stages of your digital transformation journey

End-to-end provider of digital services

To ensure a seamless cloud-enabled transformation journey for our customers, all our services and solutions are designed to be:

Multi-Clouds
To allow your apps and data to work seamlessly with one another across multiple cloud environments

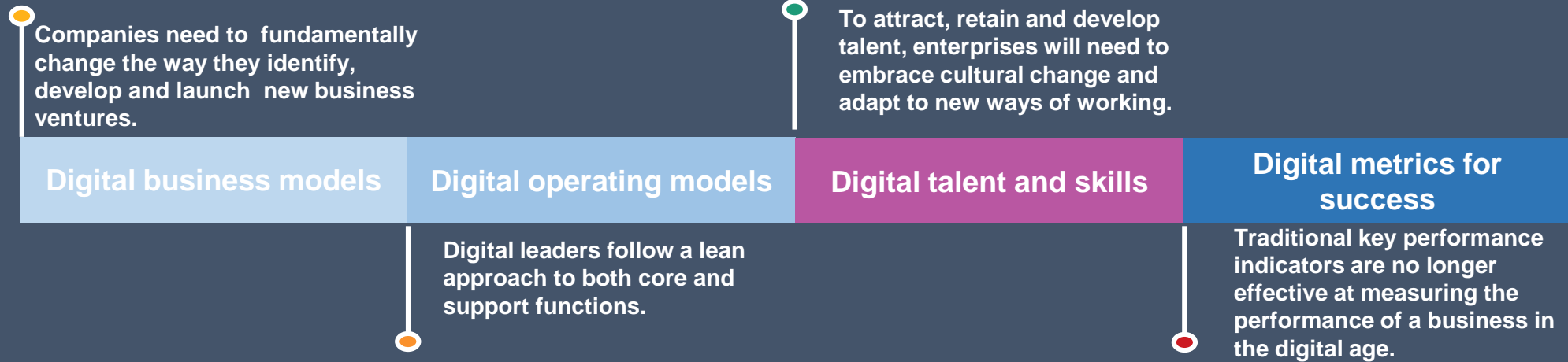
Connected & Secure
To embed an 'always connected, always secure' approach to connect & protect your cloud infrastructure, applications and data and ensure compliance

Manageable
To enable the visibility, control and automation you need to minimize complexity, and maximize productivity

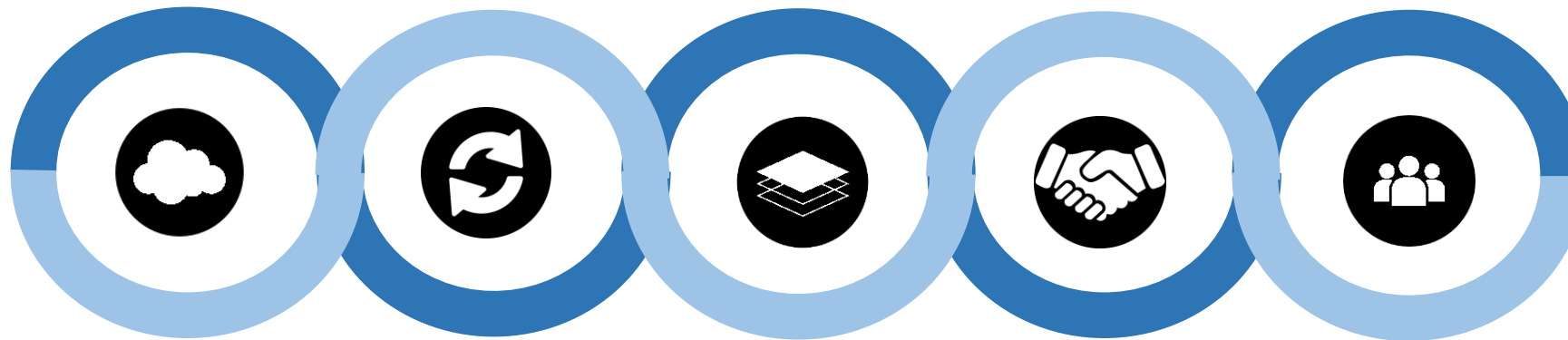
Digital Enterprise: How to survive disruption and thrive in the digital age

- Disruption may not be bankrupting incumbents
- One needs to become a digital enterprise to succeed in the digital era
- Use technology and organizational culture change to rethink every aspect of one's business

Business Focus



Digital DNA



Cloud-Centric

App
Modernisation

Platform-Centric

Customer Experience

Digital Culture

Our Cloud Team Overview

Provide Enterprise-Grade Cloud Services through

- A complete suite of distinctive managed cloud offerings with latest technology and leading industry providers
- A group of highly skilled certified cloud professionals to advise, modernise, migrate and operate enterprise hybrid cloud deployment
- An innovative cloud orchestration and automation capability to accelerate the adoption and management of hybrid cloud environment

1 Singtel Group Managed Cloud

On-Premise Private Cloud

Government Private Cloud

Commercial Cloud Providers

Multi-Cloud Management

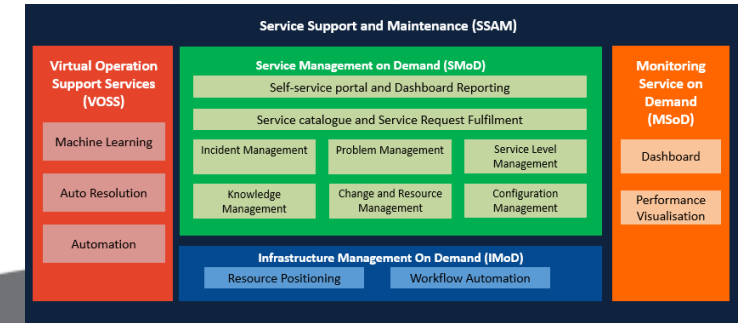
2 Our Vision



3 Our Partnership



Digital Managed Services



4 Our Delivery



Backed by a strong team of cloud professionals



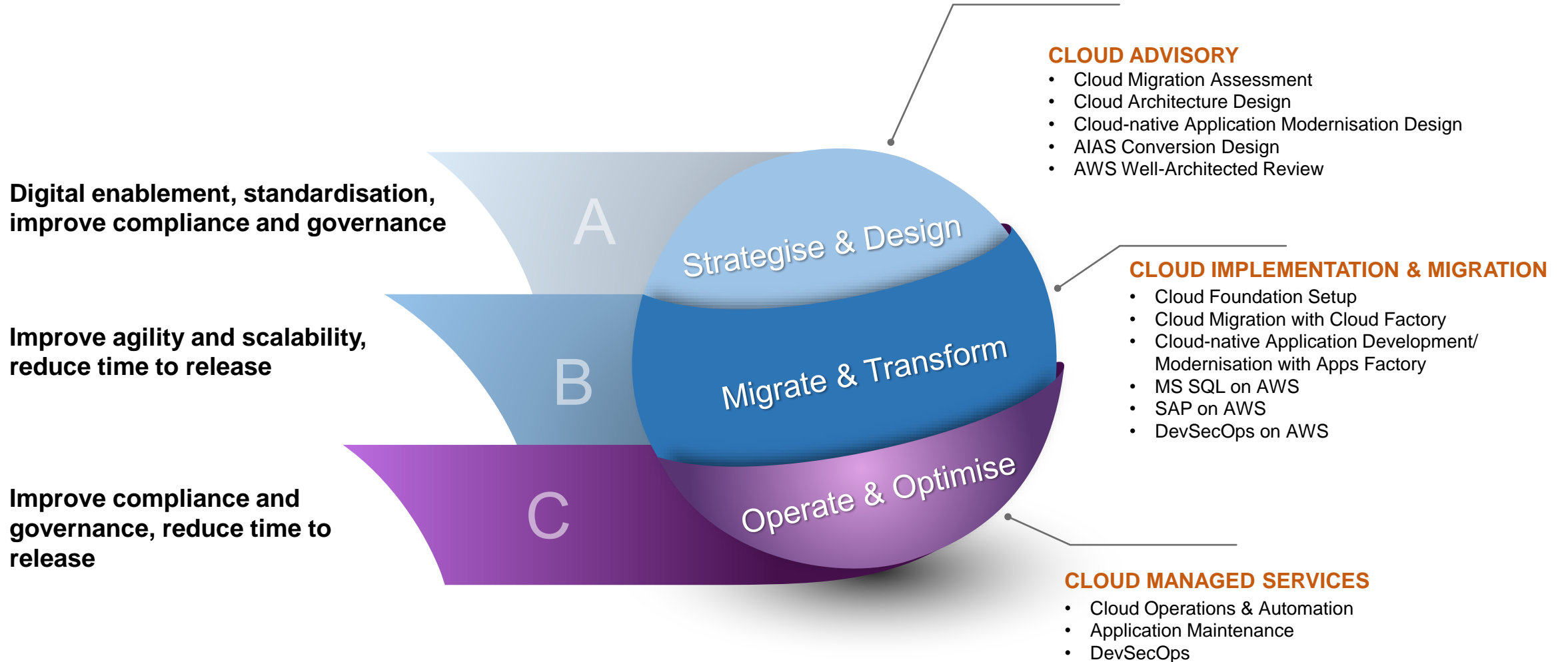
More than 6000 VMs running to-date



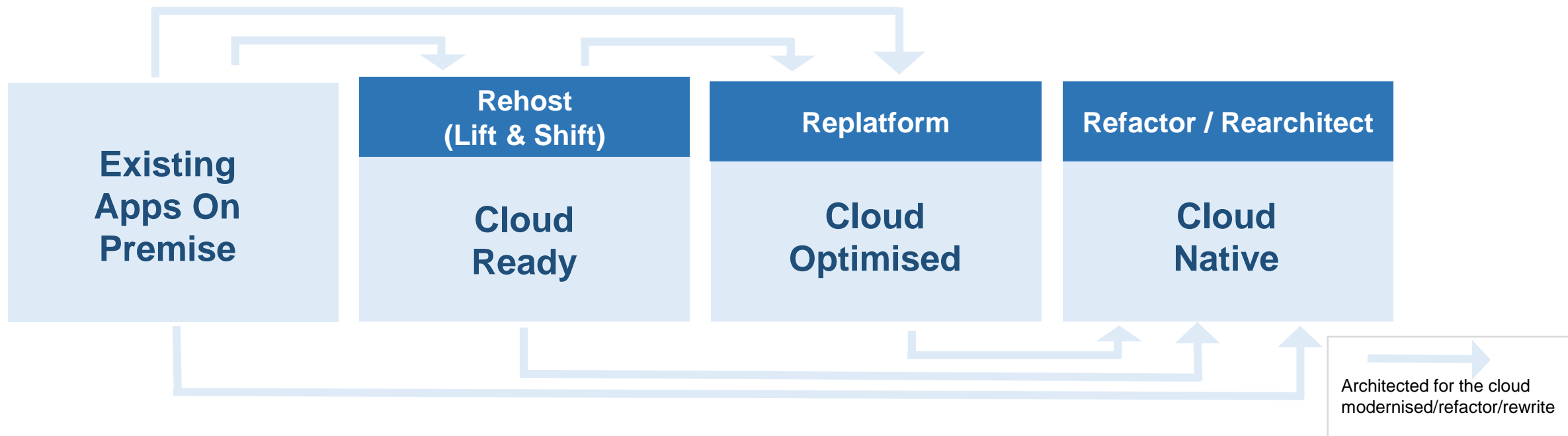
On-boarded **multiple projects** and handled more than **20,000 service tickets** per month

Singtel Group Capabilities at every stage of your AWS Cloud journey

We helped over 20 government ministries and agencies to migrate to our government cloud



Taking the Path to Cloud



REDUCE COSTS

CapEx → OpEx
Transparency
Cost Savings

IMPROVE AGILITY

Instant Provisioning
DevOps and CI/CD
Modern Application Architectures
Faster Time to Market

IMPROVE SERVICE QUALITY

Performance
Scalability
Reliability
Security and Compliance

NEW SCENARIOS

Big Data and IoT/ Analytics
Machine Learning
Artificial Intelligence
Digital Transformation

Cloud Migration Strategies

Rehost

Use Case

- VM migration, an almost one to one replication of OS, middleware etc. with very little to no code change

Considerations

- Timeline does not allow for other approaches
- Current application architecture still able to meet business demands



Replatform

Use Case

- Migration of applications while leveraging on cloud services instead of licensed middleware

Considerations

- Make use of cloud services to reduce reliance on middleware i.e. application service, data services



Refactor

Use Case

- Changing the application from a monolithic architecture to a serverless or microservice architecture

Considerations

- Application architecture does not meet business demand e.g. elastic demand, frequent functional changes



Remain

Use Case

- An application that is current enough still able to meet its functional requirements or if the application is too cost prohibitive to move

Considerations

- Current business needs are met
- Financially not viable to modernise the application
- Application too sensitive to change
- App is proprietary

Replace

Use Case:

- An application that can be replaced by more cost-effective solution such as a newer bespoke application or COTS or even a SaaS application

Considerations

- App can be replaced with COTS with similar or better functionality at lower cost
- Technical skillset is scarce in maintaining the app

Retire

Use Case

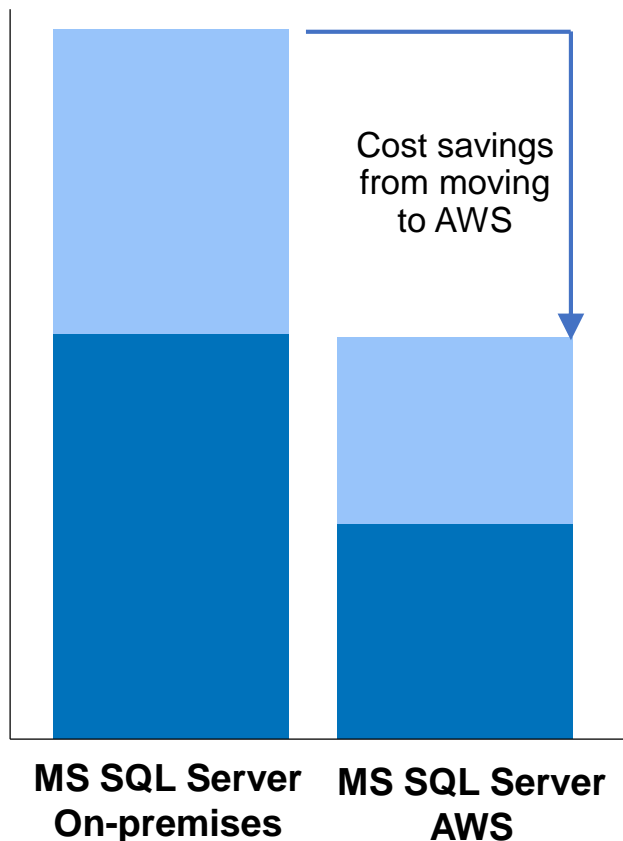
- When the application usage has reached the end of its useful life and is decommissioned to free up resources

Considerations

- Current App is no longer financially viable to maintain and no business demand

MS SQL Workloads on AWS

MS SQL Server Workloads on AWS



Variable Costs

Fixed Costs



Paying only for what you use

- Reducing excess, unused capacity
- Shifting from a forecast-driven model to a customer demand-driven model
- Moving to an agile cost base for expansion (or contraction) of the business



License optimisation

- On-demand licensing from AWS; Scaling-up only when needed to handle intermittent workloads
- Leveraging features such as Optimise CPU help customers reduce the number of SQL Server licenses needed for their workloads



Increased automation and productivity

- Reducing or eliminating IT management activities that waste time and resources
- Moving staff into differentiated, value-enhancing activities

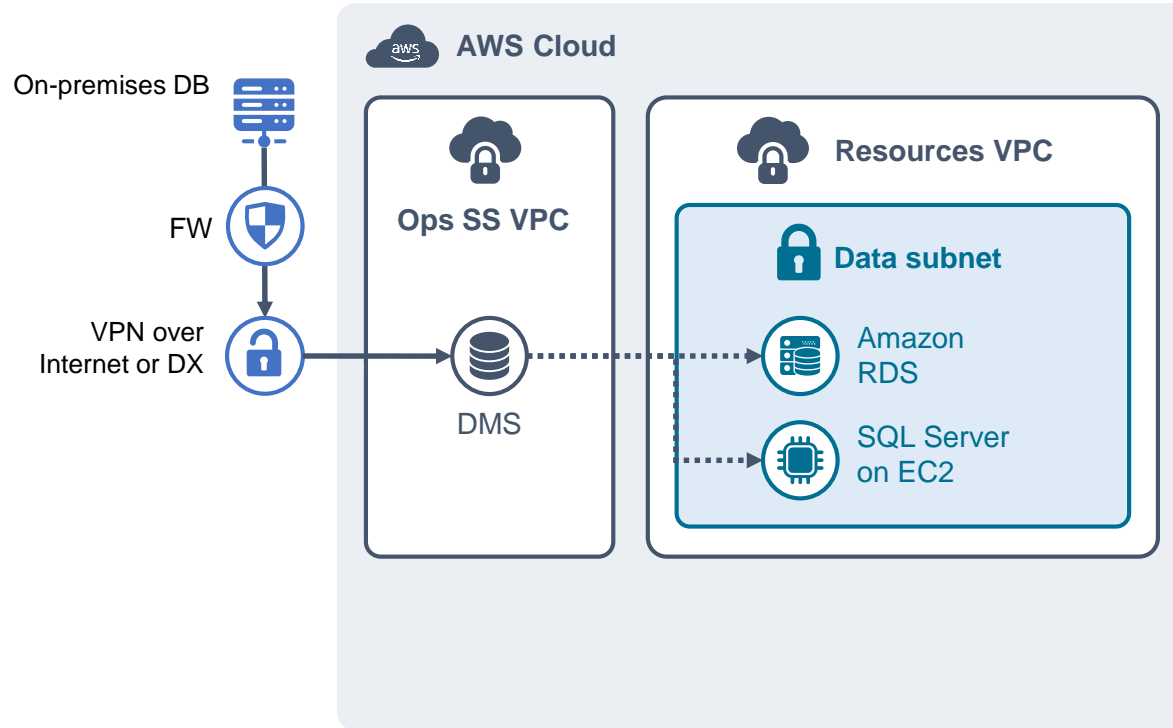


Moving to a lower variable-cost structure

- Reducing or eliminating capital-intensive investments in infrastructure hardware
- Reducing costs for monitoring, maintenance and license spend
- Eliminating data center and co-location overhead costs

Database Migration Strategies

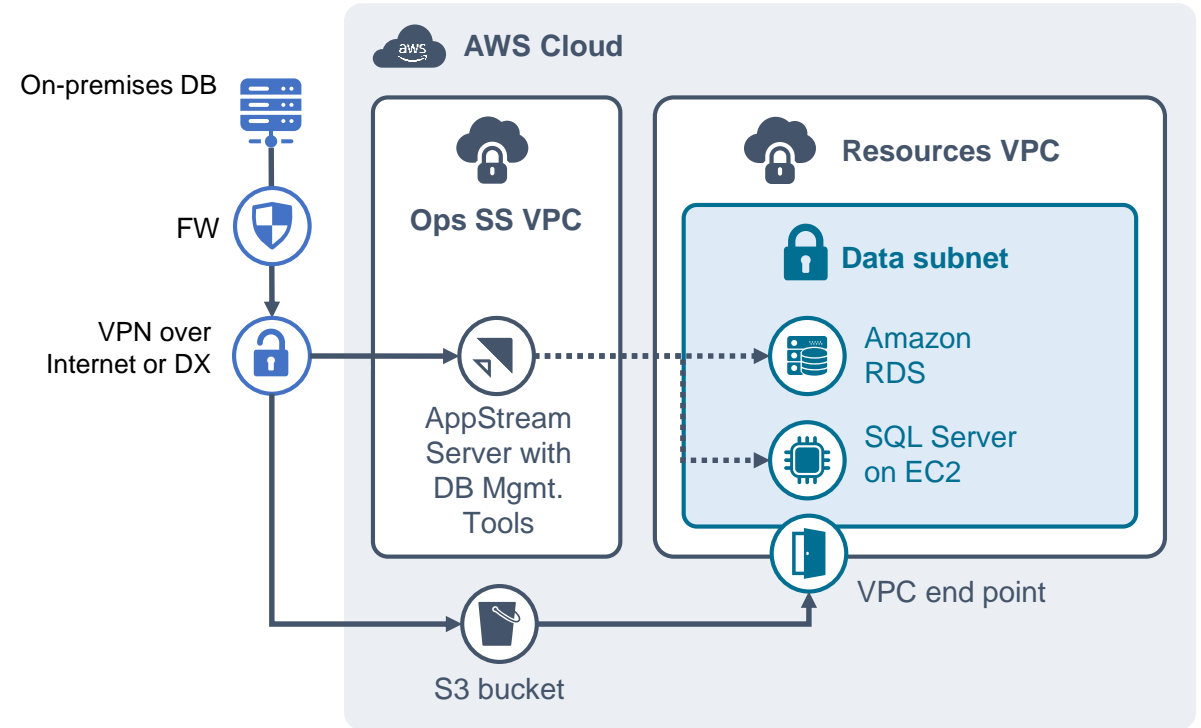
Database Migration Service (DMS)



When to use:

- Customer needs **minimal downtime**. Wants source system to be operational during migration
- Customer wants **continuous replication** function post one-time data migration (requires source DB to be SQL Server Enterprise)

Microsoft SQL Server Native tools



When to use:

- Customer can afford a downtime (~ 2 days)
- Customer has **technical issues, network security and bandwidth constraints** that prevents use of DMS
- Customer DB has some **schema complexities** that may be better handled through SQL Server native tools

SAP on AWS

Singtel Group provides expertise for SAP landscape migration to AWS Cloud and extends SAP solutions with AWS products.

Our SAP Practice in a Snapshot



Largest SAP practice in Singapore

480+ SAP Consultants in Singapore

55% consultants with S/4 HANA experience

50% consultants with 8+ year experience



Broad and deep SAP experience

22+ years of experience delivering SAP professional services

210+ successful SAP engagements

SAP Silver Partner



Strategic Collaboration with Cloud Service Providers

Strategic Collaboration Agreement with AWS

Delivery support from Cloud Professional Services

AWS APN Solution Provider
10+ AWS Certified Architects

Embedded Technologies

HR Accelerator, Pathfinder, Interface Framework, Workflow Framework, Report Framework, Attachment Framework, Email Framework, CustomerConnect, Robotic Process Automation (RPA), ChatBot, etc.

Key Focus Areas

Singtel Group Embedded Technologies



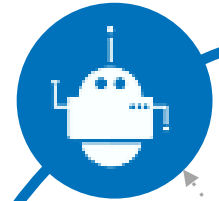
Customer Connect



OneChat



RPA (UIPath)



SAP HANA Migration

- Brownfield
- Greenfield
- Landscape Transformation

Singtel Group SAP Proprietary Tools

- Ranking Stacker Tool
- Succession Planning Dashboard
- Ranking and Calibration Dashboard
- PathFinder Tool

SAP SuccessFactors

Complete human resources management (HR) system.

SAP Concur

Complete Travel and Expense management system

SAP Analytics Cloud

Comes with Data visualisation capabilities to better understand business and improve decision-making

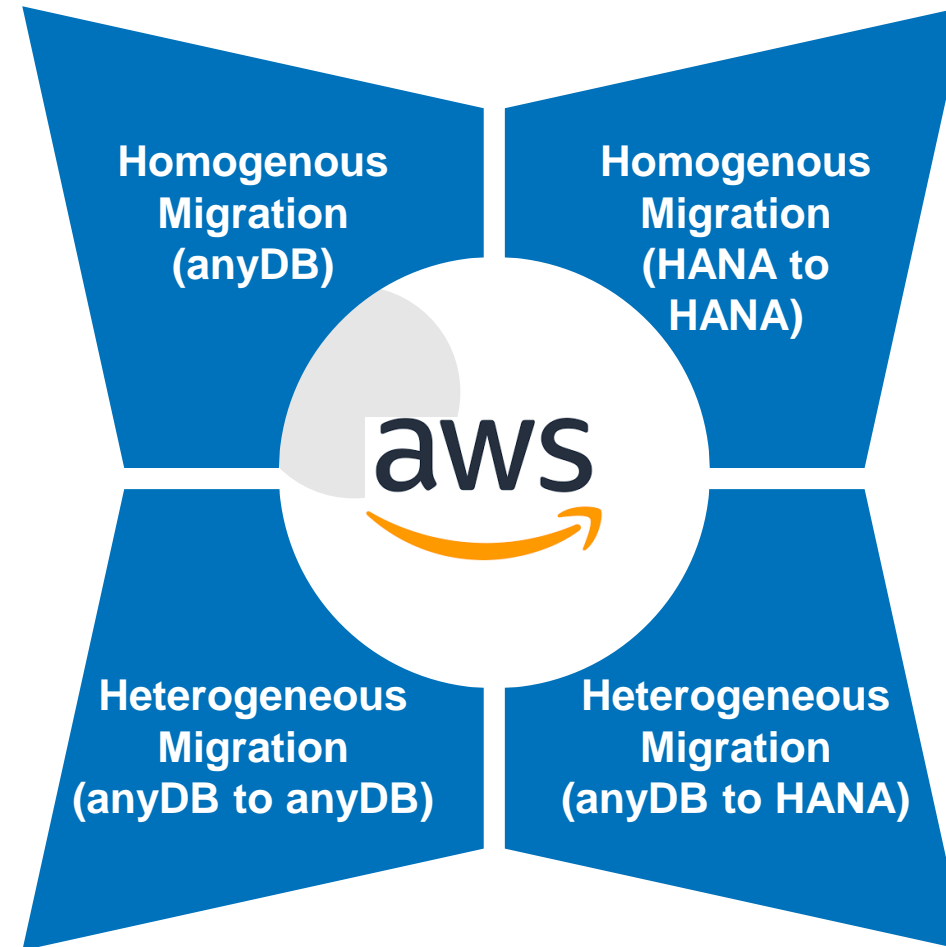
SAP Leonardo

End-to-end digital innovation (IOT, Machine Learning, Big Data, BlockChain, Data Intelligence, Analytics)

SAP Migration to AWS Cloud

- Backup and Restore
- SAP Classical Migration (R3load/Jload)
- AWS SMS, CloudEndure

- SAP Classical Migration (R3load/Jload)
- 3rd Party Tools like SNP T-Bone

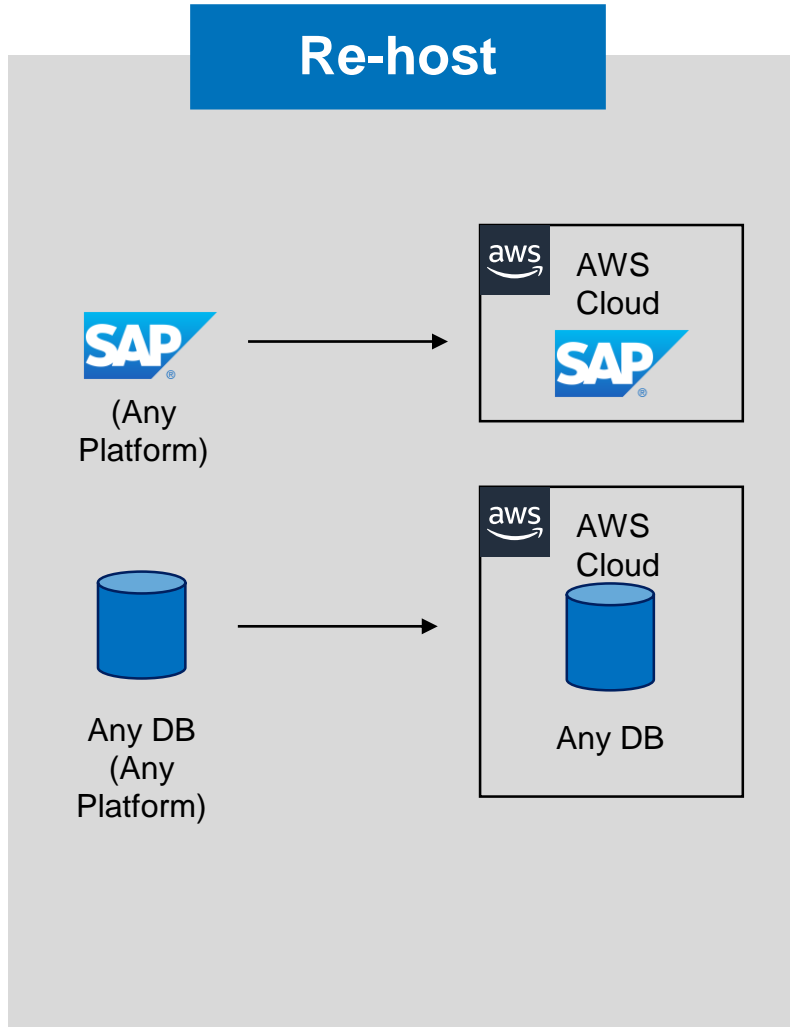


- Backup and Restore
- HANA System Replication

- SAP DMO or DMO with System Move
- SAP Classical Migration (R3load/Jload)
- 3rd Party Tools like SNP T-Bone

Migrate from Any Platforms

Re-host



Proof of Concept

- DB migrate
- Multi-AZ compatibility
- Hybrid connectivity

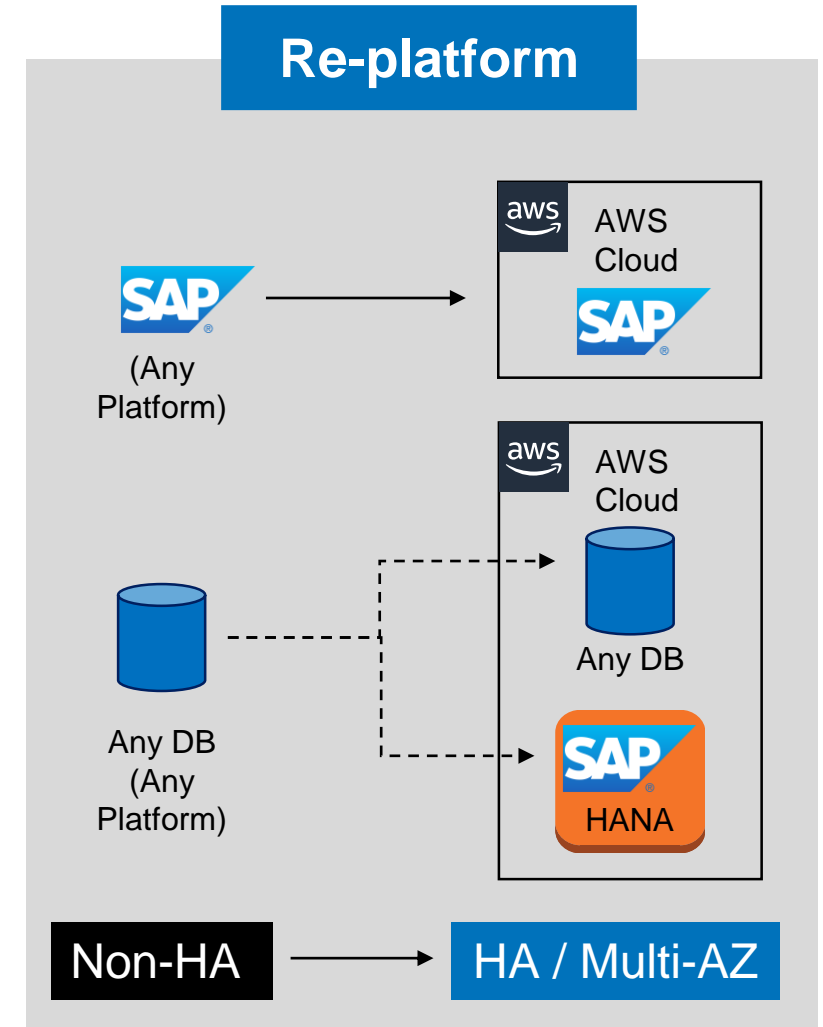
Migration Approach:

- Non-Prod only
- Non-Prod first and Prod later
- All environments

AWS Platform Sizing:

- Replicate on-premises
- Re-size (aggressive)
- Re-size (conservative)

Re-platform



SAP on AWS Benefits



Increase Speed

Innovate Faster

Reduce Costs



- **Rapid Provision:**
Create new HANA systems through AWS Quick Start in <1 hr
- **Grow (or shrink) as you go:**
Scale-Up or Out your configuration in <1 hour
- **Expertise:**
SAP, AWS and joint partner ecosystem

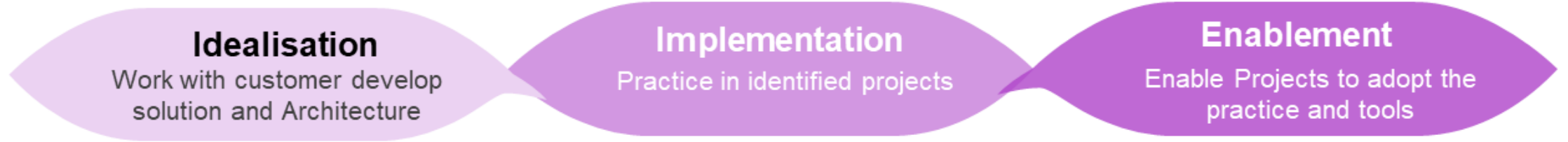
- **Secure:**
Innovate while maintaining a secure environment
- **Simplify:**
Clone and upgrade systems with ease
- **Consume:**
Provision new SAP innovations through SAP's Cloud Appliance Library (CAL)

- **Low Cost of Entry**
- **Flexible pricing:**
Achieve up to 72% discount on X1 for 3-year commitments
- **Backup/Recovery model** – No Standby node
- **HSR with no Preload**, reducing standby instance size

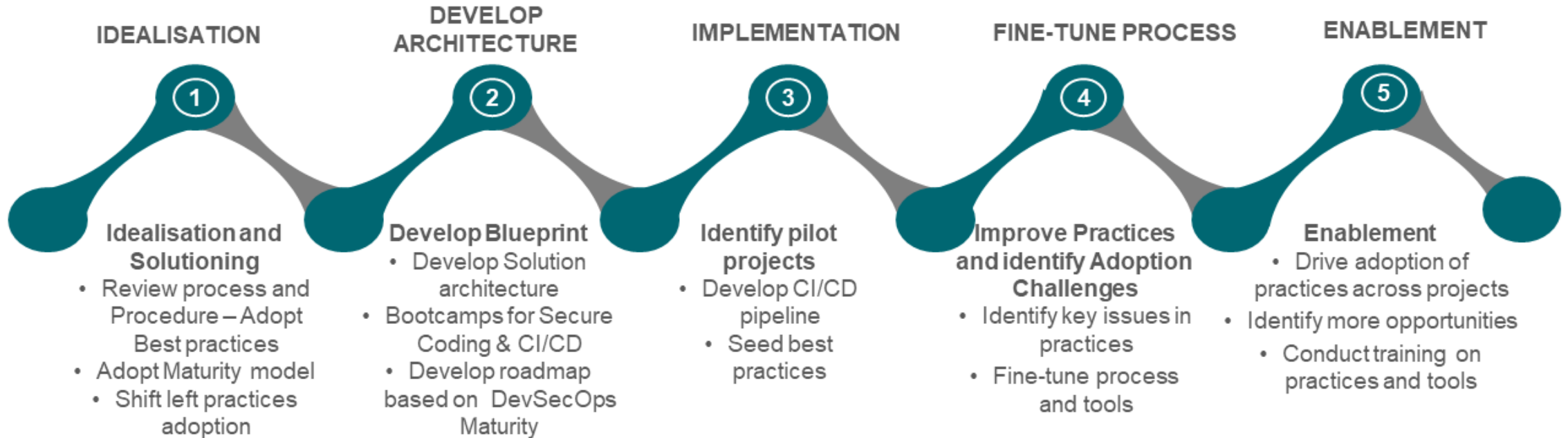
DevSecOps on AWS

Singtel Group provides AWS certified expertise to help enterprises with DevSecOps cloud transformation to improve cost savings and performance.

Systematic Approach to Adoption of DevSecOps



Adoption journey for an Agency



Migrating DevSecOps to AWS Cloud to Reduce Cost

Organisations can embed security knowledge, application know-how and automate processes to create security at scale. To circumnavigate time-consuming activities and high cost, enterprises can implement DevSecOps cybersecurity in AWS Cloud services.



Bringing Value to You

There are 4 areas in which the Singtel Group is focused in developing to bring value to customers

1. Methodology

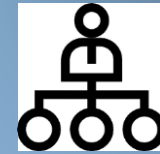
Singtel Group has harvested lessons learnt, best practices and reusable artifacts, especially for GCC AWS and GCC Azure as well as AWS, Azure and Google Cloud Platform for IaaS/PaaS/ SaaS to build a methodology that produces a highly repeatable and consistent output

4. Experience

Singtel Group rich experience in helping customer deliver solutions to the cloud ensure successful implementations



Methodology



Organic Growth



Experience



Cloud Capability

2. Organic Growth

Cloud Center of Excellence (Go Cloud) enabling Singtel Group personnel in cloud technologies as well as perpetuating policies and compliance from governing authorities

3. Cloud Capability

The focus on the organic growth of the organisation has enabled a large ready pool of cloud subject matter experts to provide customers with quality advice and delivery

Scan QR Code for survey



Scan the QR Code to qualify for **free Singtel cloud assessment** by completing this survey and receive a gift*



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