



DIGITAL

TRANSFORMATION 2.0

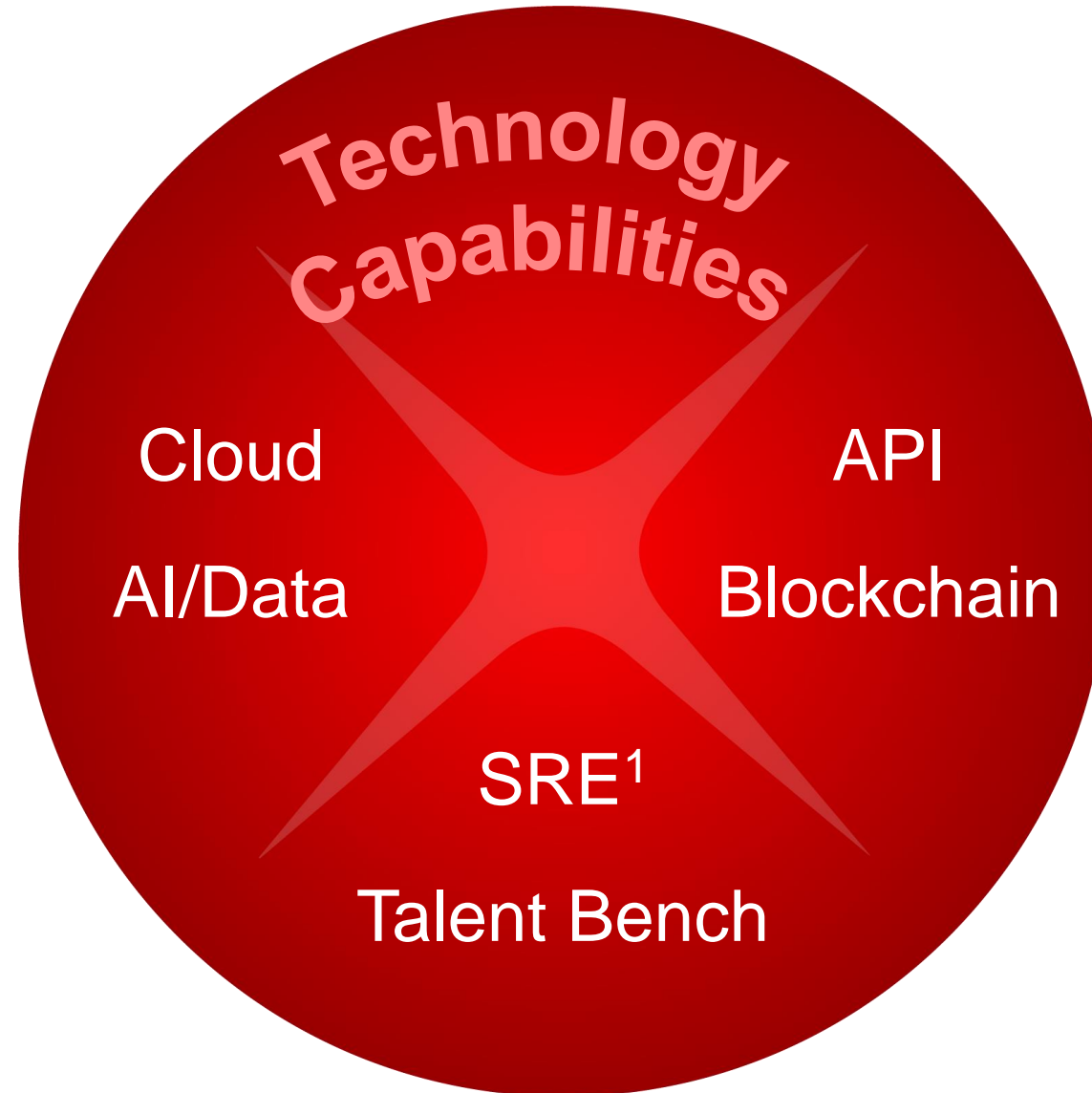
I n v e s t o r D a y 2 0 2 3

Tech Capabilities

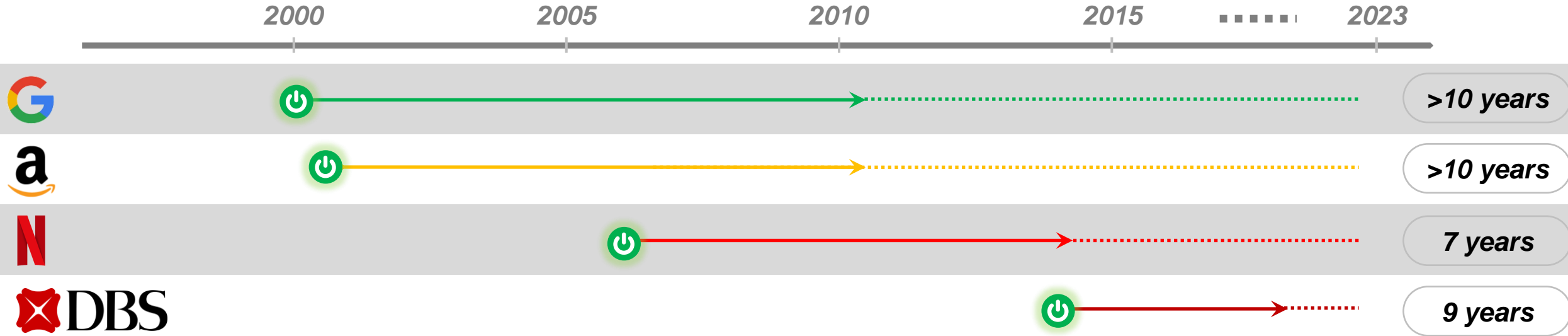
Jimmy Ng

Group CIO & Group Head, Technology & Operations

Unlocking our sustainable advantage



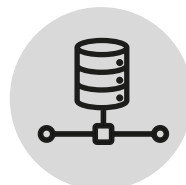
Rome was not built in a day. Transforming tech capabilities takes time



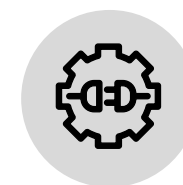
Key takeaways



Journey to cloud



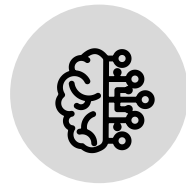
Massive use of data



API-driven architecture



Site Reliability Engineering



Experimentation with new tech

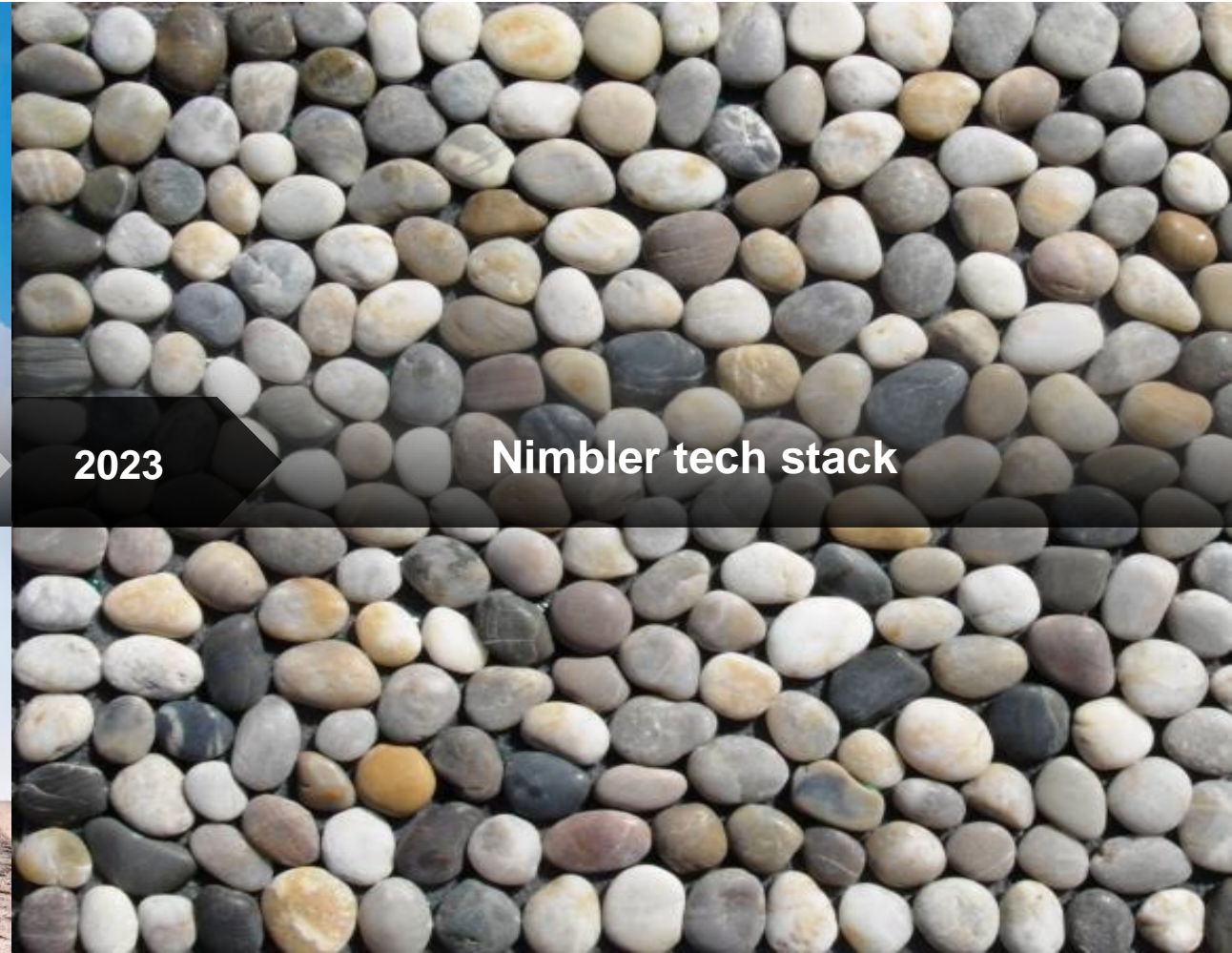


Talent bench

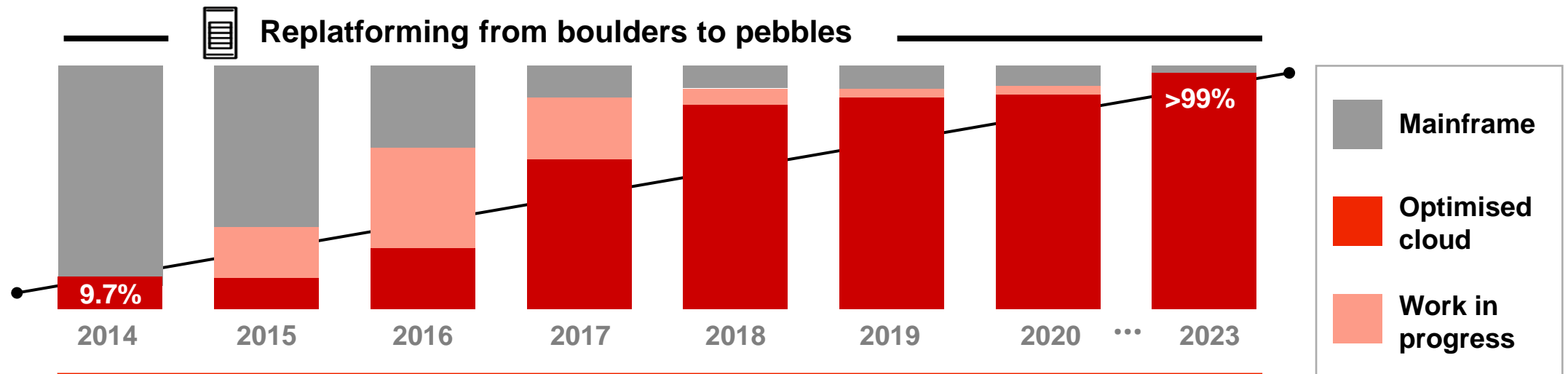
Being the **D** in



Our digital transformation journey: turning boulders into pebbles

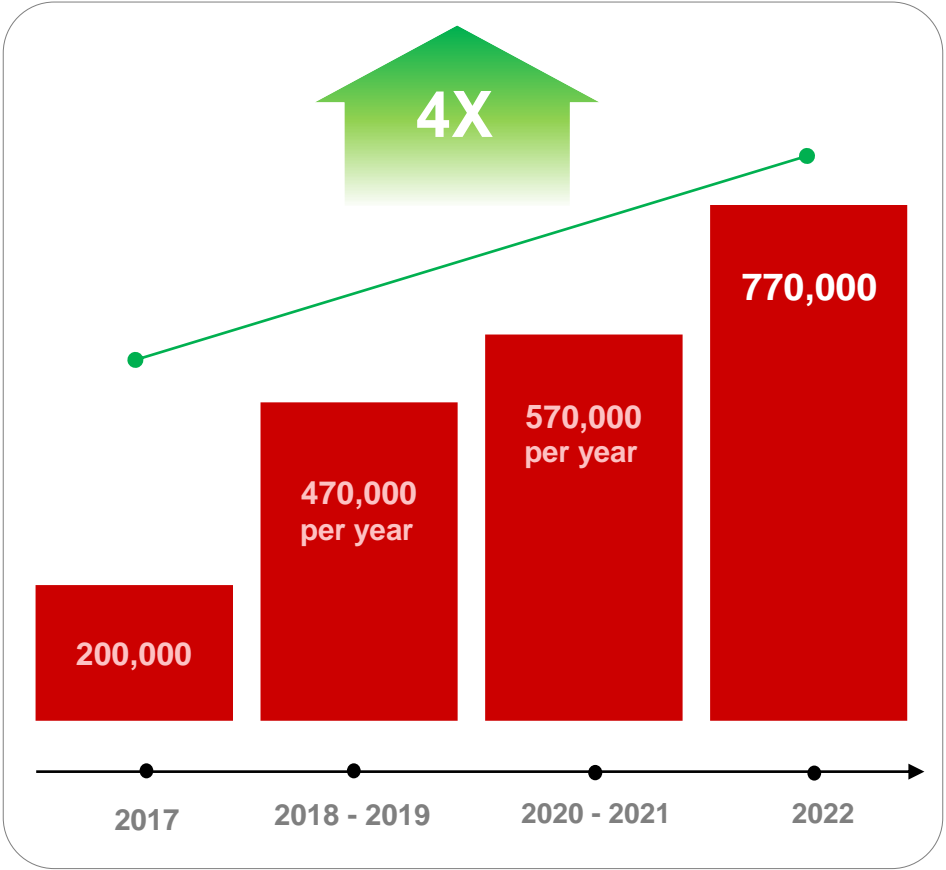


Our digital transformation journey: turning boulders into pebbles

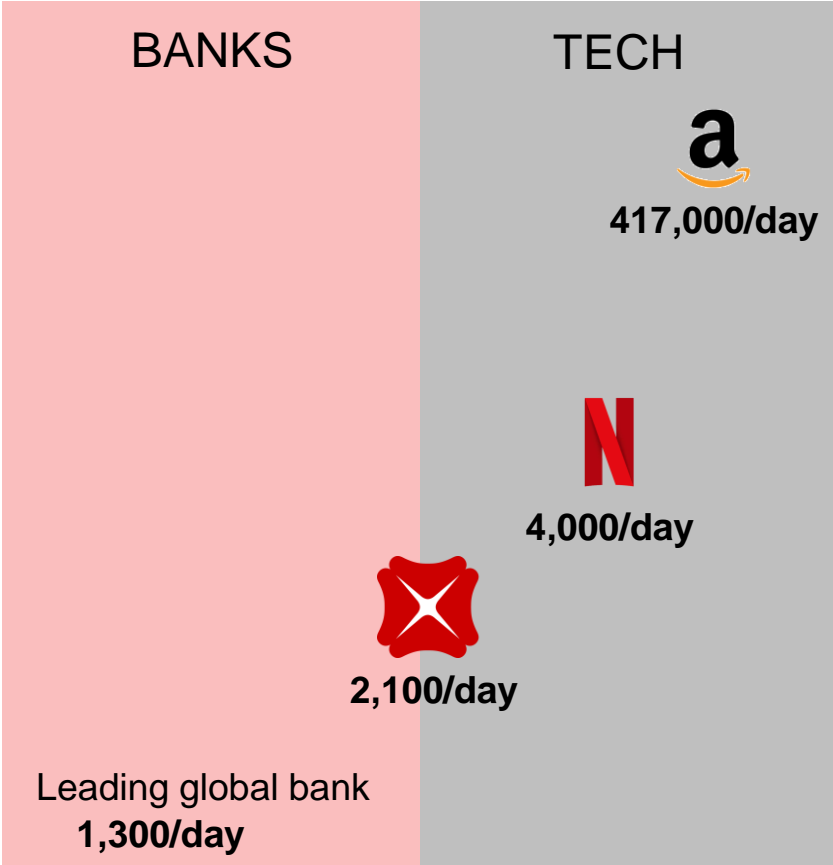


Our modern tech stack enables scale and agility

Total deployment releases



Deployment frequency



Our hybrid multi-cloud strategy gives us efficiency and flexibility



Private Cloud

Hybrid, Multi-cloud

Public Cloud



In-house Infrastructure as a Service (IaaS)

Efficiency achieved **below price point** of AWS



Workload portability & surge capacity

On-demand computing power

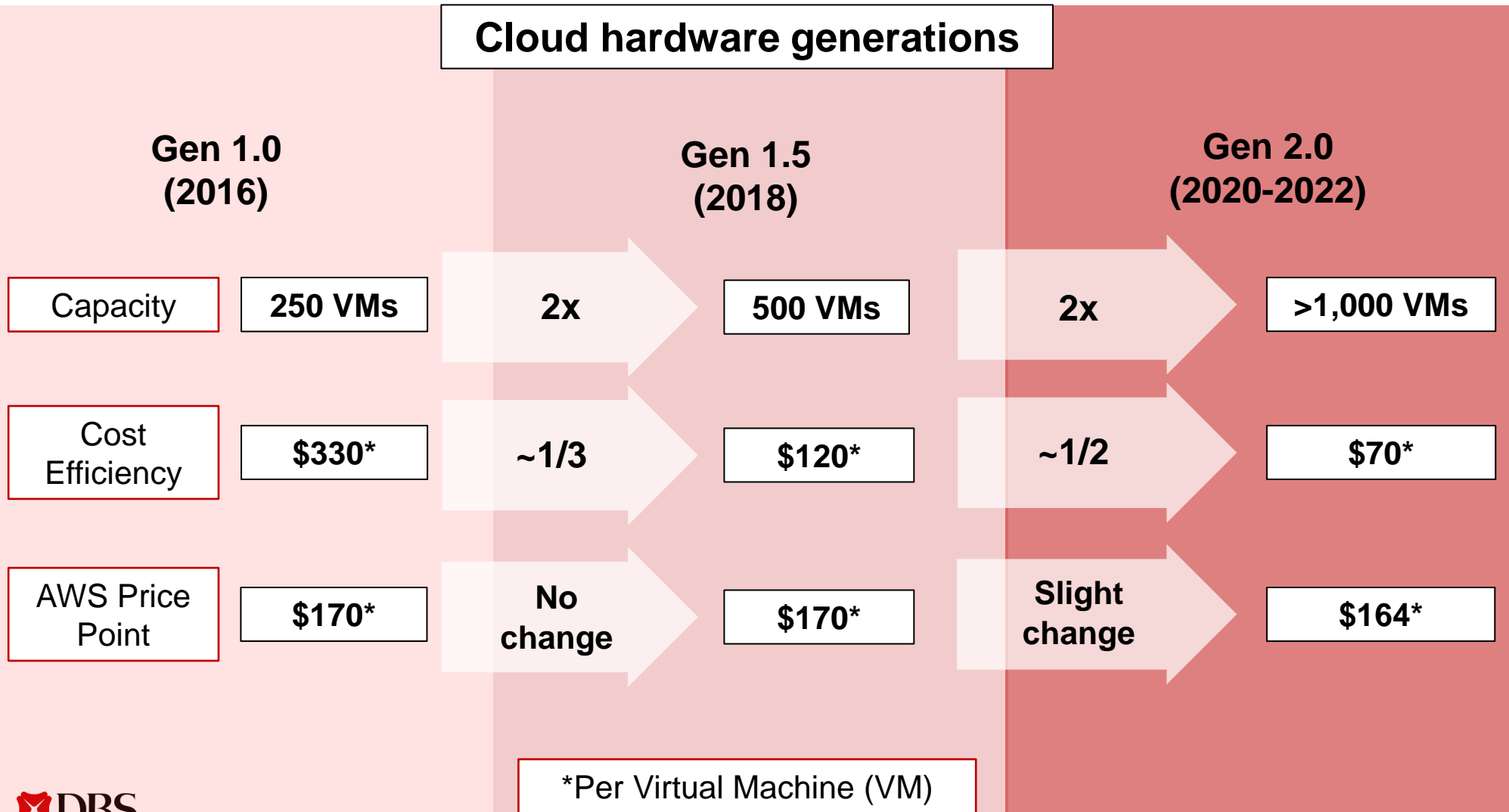


Advanced capabilities

Cutting-edge technologies for advanced analytics and insights

Cost-efficient private cloud rivals major service providers

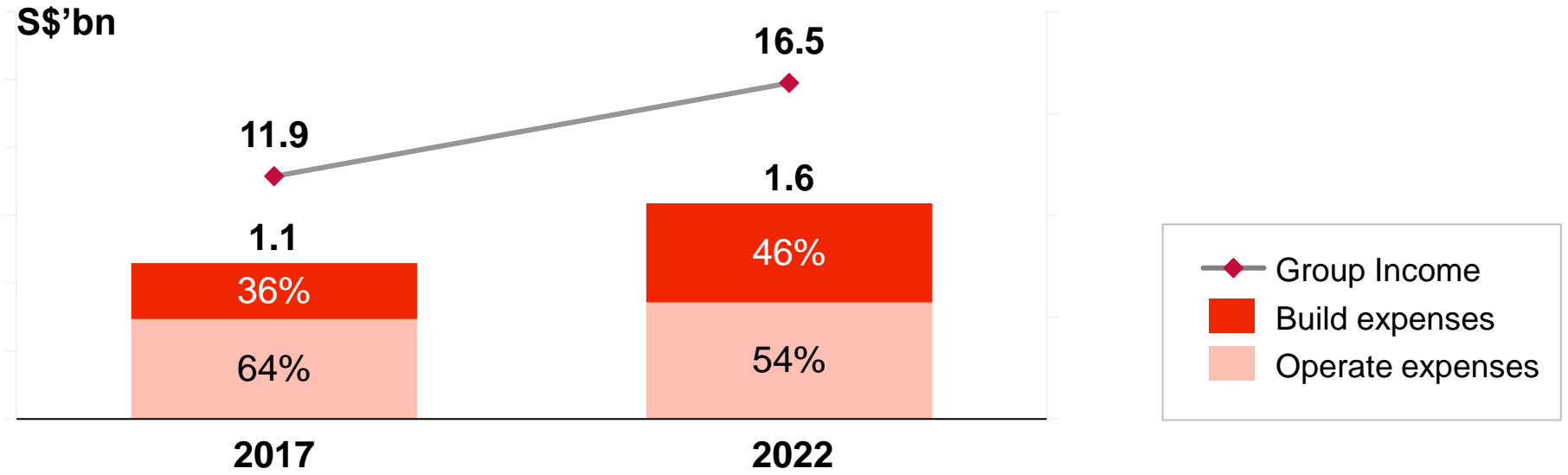
Cloud hardware generations



Benefits

- Downsized data centre by **75%**
- Created **10x** growth capacity

Operate is efficiently managed, enabling us to invest for capability



Tech CIR	10%	→	10%	
Operate CIR	6%	→	5%	Marginally lower, significant volume & capability growth
Build / Tech Cost	36%	→	46%	Increasing share from ~1/3 to ~1/2



ADVANCING DBS WITH AI

We have built key capabilities in ADA, our data platform



DATA ACQUISITION

10+ silos to
1 platform

Data ingestion
at scale



DATA ACCESS

Proprietary
integrated security
framework

Instant access to
permitted data



DATA DISCOVERY

Metadata and
data lineage

Understand data
in minutes



MODEL DEVELOPMENT

CPU and GPU
farms on premises
and in the cloud

On demand
capacity



MODEL DEPLOYMENT

State-of-the-art tools
for visualisation and
modelling

State-of-the-art
tools

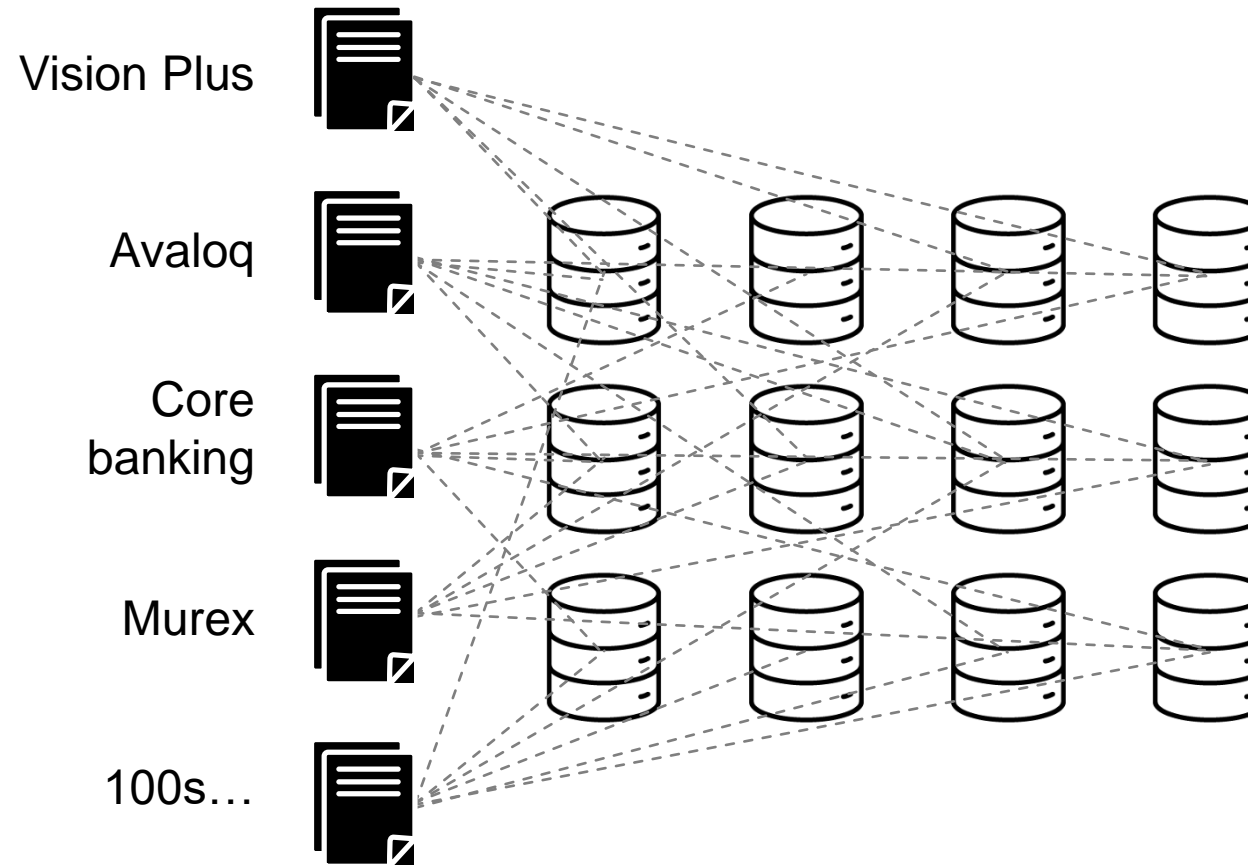
Our data platform transforms the bank's data into a competitive differentiator



ADA
ADVANCING DBS WITH AI



Consolidates data to a single source of truth

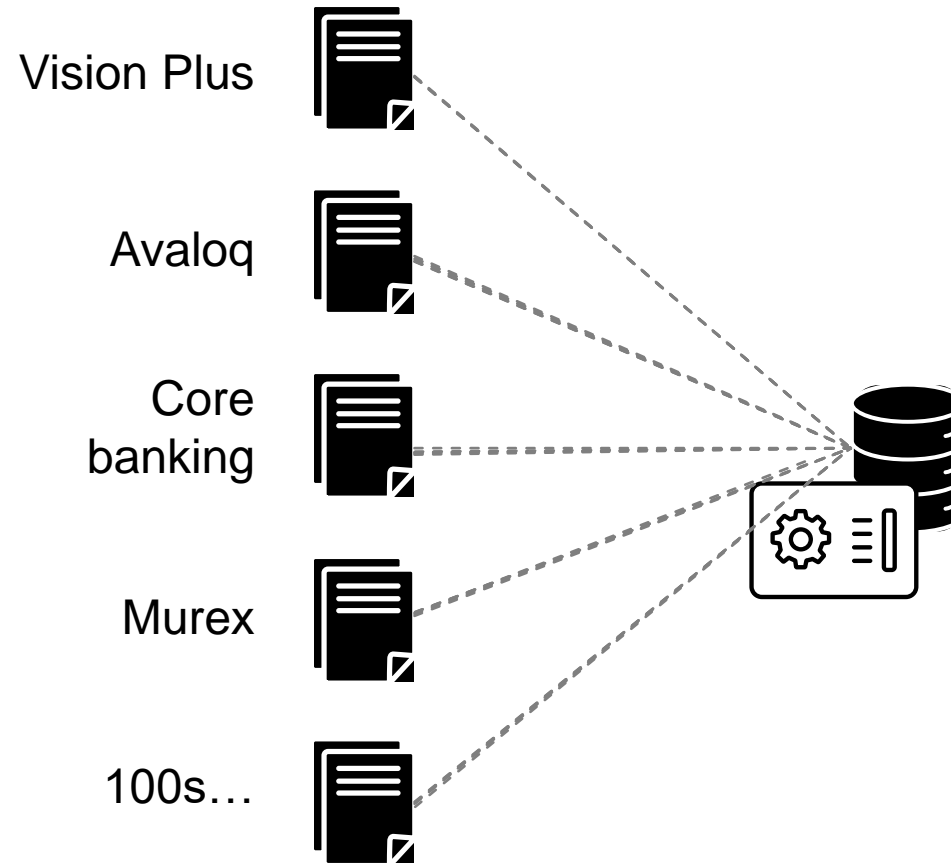




Our data platform transforms the bank's data into a competitive differentiator



Consolidates data to a single source of truth

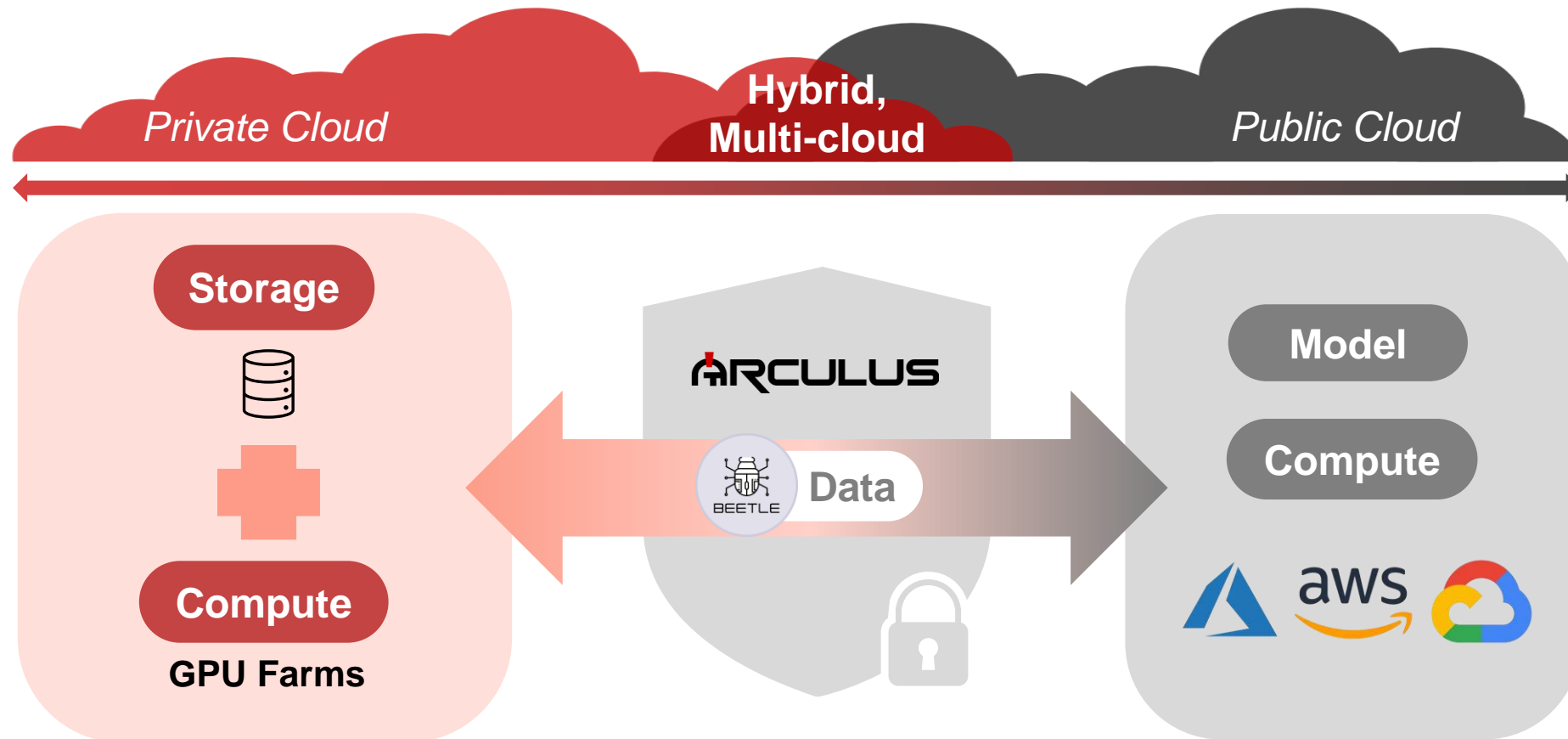




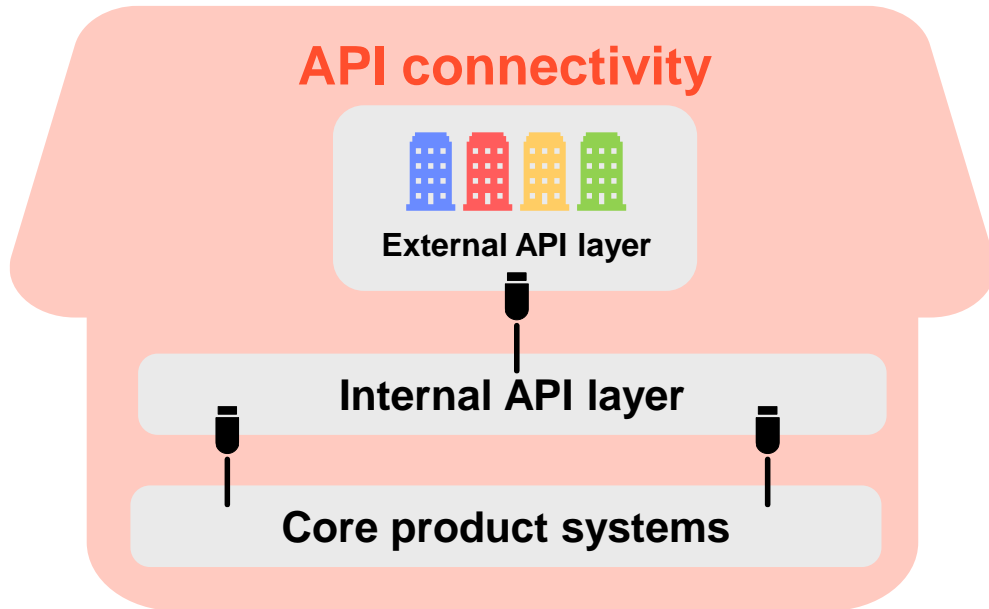
Our data platform transforms the bank's data into a competitive differentiator



Enabling on-demand capacity



API-driven architecture increases connectivity with ecosystem partners



	2018	2022	
External APIs	~150	~1,500	10X ↑
External API volumes	~4M	~420M	100X ↑
Internal API volumes	~200M	~4.1B	20X ↑

The screenshot shows the DBS Reusable Asset Marketplace dashboard. The header includes the DBS logo, 'REUSABLE ASSET MARKETPLACE', a search bar with 'cards api', and navigation links for Discover, Publish, Dashboard, Resources, API Journey, and Help. The main content area is divided into three primary sections: 'Discover APIs' (Explore the full range of available APIs), 'Publish APIs' (Publish your APIs on Marketplace), and 'Subscribe APIs' (Find out how to subscribe to APIs). Below these are 'Metrics at a glance' cards for 'Top Searched APIs', 'Recently Published', 'Top 5 Subscribed APIs', and 'APIs Published last 30 days' (showing 58 APIs, a 33% increase). At the bottom, there are four summary cards: 'APIs Available', 'APIs Subscribed', 'APIs Reused', and 'APIs Provisioned'.

API marketplace in a nutshell

Discover

Publish

Subscribe

In a single platform



Using a simple process & workflow

Internal APIs also enabled us to develop our Workflows and Workbenches

Internal



Relationship manager



Credit



Operations



Compliance

Single sign-on

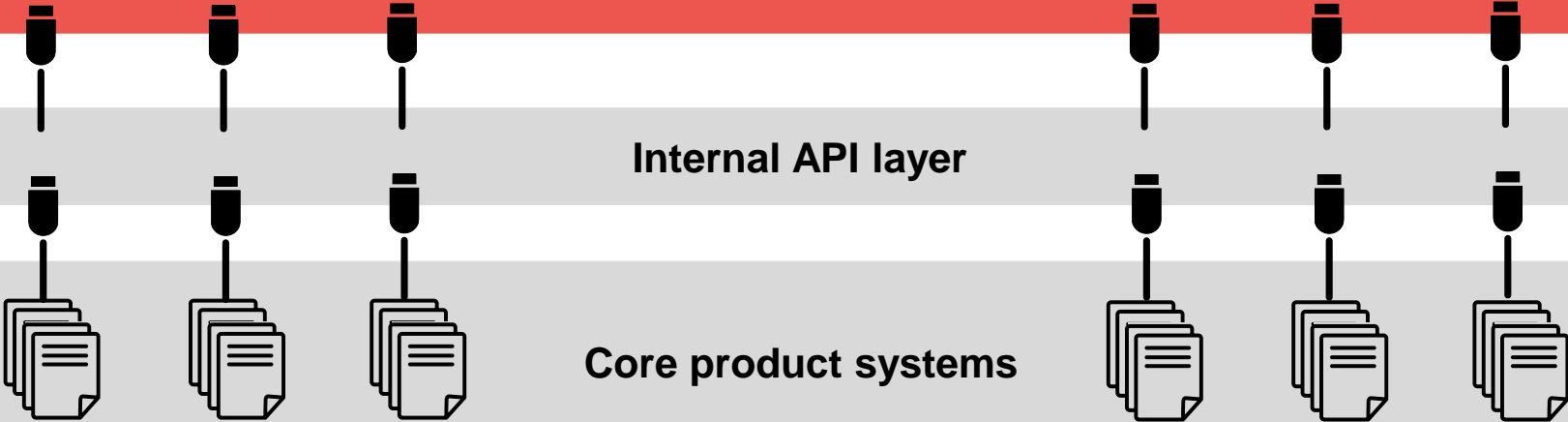


Role-based Workbenches and Workflows

And more...

Internal API layer

Core product systems



Maturing our Site Reliability Engineering (SRE) practice to scale safely and securely

Learnt from

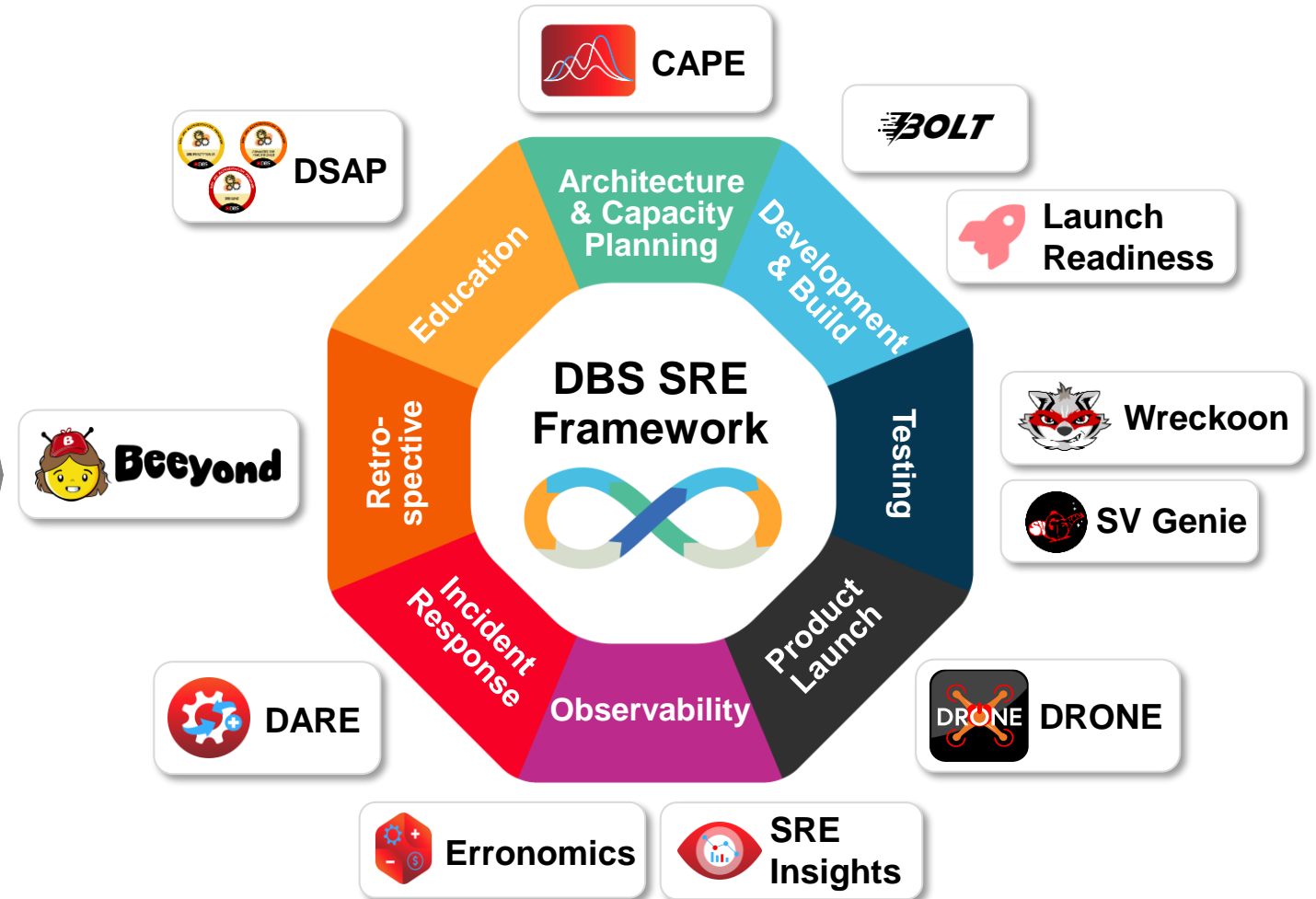
Google

aws

NETFLIX

LinkedIn

...And created
our SRE
framework



Experiment with new technologies to create business opportunities

Blockchain / smart contract technology foundational capabilities



Tokenisation, wallet management



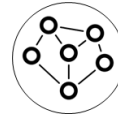
Compliance, legal & surveillance



Automated market maker & liquidity pool management



Operational efficiency for both public / permissioned chain



Node-as-a-service, cross-chain interoperability

Origination & issuance

Trading & execution

Clearing, settlement, & custody



Tokenised digital capital market issuance



Security Token Offering origination & tokenisation



Tokenised carbon trading exchange



Security Token Offering trading & execution



DeFi trading



Digital asset custody & servicing



Next-gen clearing & settlement

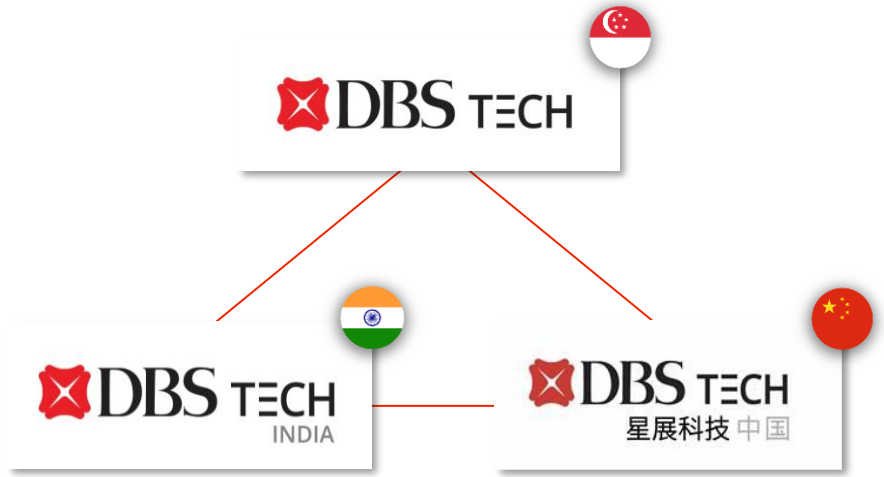


Programmable money

Our people – a decade-long transformation

Diversified our global talent pool

12,000 technologists



**To be established in mid-2024*

... hiring from big tech, design firms

- Google, Apple, HUAWEI, AWS, dentsu
- SAP Concur, IBM, Red Hat, Infosys, frog
- Cognizant, ORACLE, ANT FINANCIAL, Capgemini, Booking.com
- Hewlett Packard Enterprise, SEAGATE, Grab, Lenovo, accenture
- Microsoft, 淘宝网 Taobao.com, SAMSUNG, ... and more

More technologists than bankers – Having a breadth of talents and skill sets



Data

Analytics

- Data Scientist
- Big Data Analyst
- Quant Dev/Modeller
- Reporting Specialist

Data Technology

- Data Engineer
- Machine Learning Engineer
- Data Architect



Tech

- Full Stack & Mobile Web Developer
- DevOps Engineer
- Application Architect
- Cloud, Infra, SRE Engineer
- Cyber & Application Security
- 5G, IoT, Blockchain



Design

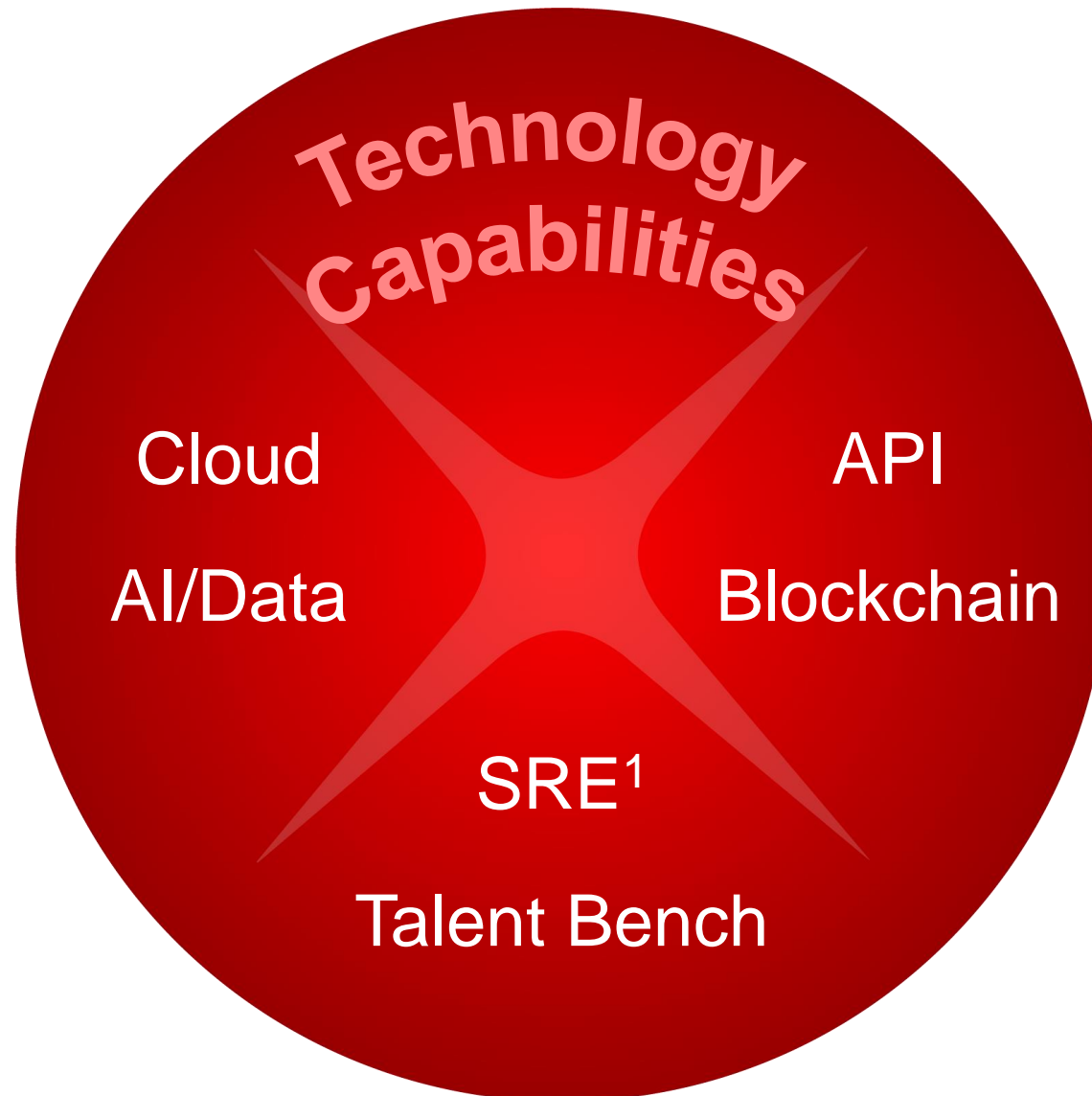
- Digital Product Designer
- Design Researcher
- COE/System Designer
- UX Writer/Engineer



Growing our own timber

Attracting >1,000 young talents from the polytechnics and the universities

Unlocking our sustainable advantage



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