HPE

GreenLake

ESG 數位永續發展

HPE慧與科技 企業產品事業群總經理 蕭舜華 Doris

June 2023

Start anywhere

HPE is the edge to cloud company
Key digital transformation trend and offering

Hybrid Cloud
混合雲

GreenLake Cloud Platform, Data Services Cloud Platform

Compute Ops Manager

Hybrid Cloud advisory services

AI/ML 人工智慧

HPC, Cray top500 supercomputer

Machine Learning Development Environment

Infosight

HPE Ezmeral DataFabric, Unified Analytics

Data First 數據

Unified Data platform for data Store, Manage and Protect

DSCC, Block, File, DR, Backup&recovery services, HCI, Cloud Physics Big Data , Apollo4K platform

ESG and 永續 Sustainability

HPE Greenlake as a services

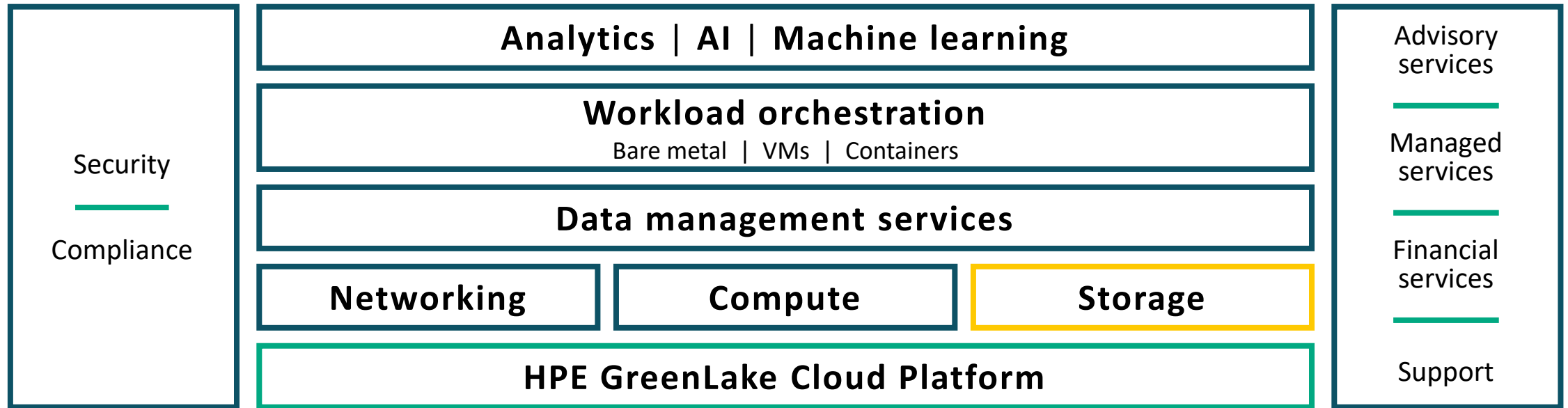Circular economy

IT Sustainability dashboard

HPE GreenLake edge-to-cloud platform
雲服務 雲管理 雲維運

Unified cloud services experience

Analytics | AI | Machine learning

Workload orchestration
Bare metal | VMs | Containers

Data management services

Networking **Compute** **Storage**

HPE GreenLake Cloud Platform

Security

Compliance

Advisory services

Managed services

Financial services

Support

OPEN | Elastic | Partner enabled

HPC & AI 高效能SUPERCOMPUTING

Purpose-built supercomputing

HPE Cray EX supercomputers

HPE Cray EX2500 supercomputer

The next frontier of supercomputing systems redesigned for HPC, AI, and converged workloads

HPE Superdome Flex

HPE Superdome Flex 280

Scale-up, shared memory HPC

Accelerated HPC/AI

Accelerated compute platform for HPC and AI workloads

HPE Apollo 6500 Gen10 Plus System

Mainstream HPC/AI

Density-optimized, scale-out compute for HPC and AI workloads

HPE Cray XD2000 System

HPE Apollo 2000 Gen10 Plus System

HPE ProLiant DL385 Gen10 Plus System

Edgeline

Range of platforms and capabilities engineered for the harsh edge environment

HPE Edgeline EL8000

Cray ClusterStor E1000 Parallel storage system purpose-engineered for HPC and AI

Integrated HPC & AI Software Portfolio including software development and acceleration environments, cluster management, data management, and system management

Everything available "as a Service" via HPE GreenLake for HPC

HPE has taken supercomputing into the exascale era
Enabling unprecedented progress in **computational science and business**

1 **Supercomputer***
(more than 1 exaflops)

1 **Storage System****
(nearly 1 exabyte raw capacity)

Clean Energy
Faster
path to clean fusion power

Material Science
More sustainable
materials and designs

Health Care
Accelerated
cancer research

Environmental
Better protection
of biodiversity

June 2023 top500.org list   OLCF announces storage specifications for Frontier exascale system

NEW /AI/ML 模型開發和訓練平台

Accelerate ML data prep, model development, and training

HPE Machine Learning Data Management Software	HPE Machine Learning Development Environment	HPE Machine Learning Development System

Highly scalable, performant data and ML pipelines

- Process petabyte-scale ML workloads up to 40% faster
- Reproduce any outcome by capturing data lineage
- Language and tooling agnostic; on-premises or in the cloud

Now available

Enterprise, HPC, & GPT ready AI/ML model training at scale

- Scale Large Language Model training across environments
- Reduce cost—mix AI and HPC workloads on shared clusters
- Accelerator choice—AMD, NVIDIA

Now available as a service via HPE GreenLake for HPC

Turnkey AI/ML model training infrastructure

- Train models from Day 1 with reduced set-up time
- Right-sized infrastructure with space to grow with models
- Track, manage, and reproduce work for AI/ML teams

Now supporting HPC infra, AI/ML-optimized compute

GPT = Generative Pre-trained Transformers

AI/ML 大數據分析和智能模型開發協作平台

HPE Ezmeral Software

A fully curated open-source based analytics environment for hybrid cloud

Develop
Deploy
Analyze
] **everywhere**

Business Analyst | Data engineer | Data analyst | Data Scientist | ML engineer

HPE Ezmeral Unified Analytics
Managed open-source analytics frameworks

ISVs
BYOTools

HPE Ezmeral Data Fabric
Seamlessly access, manage, govern global data
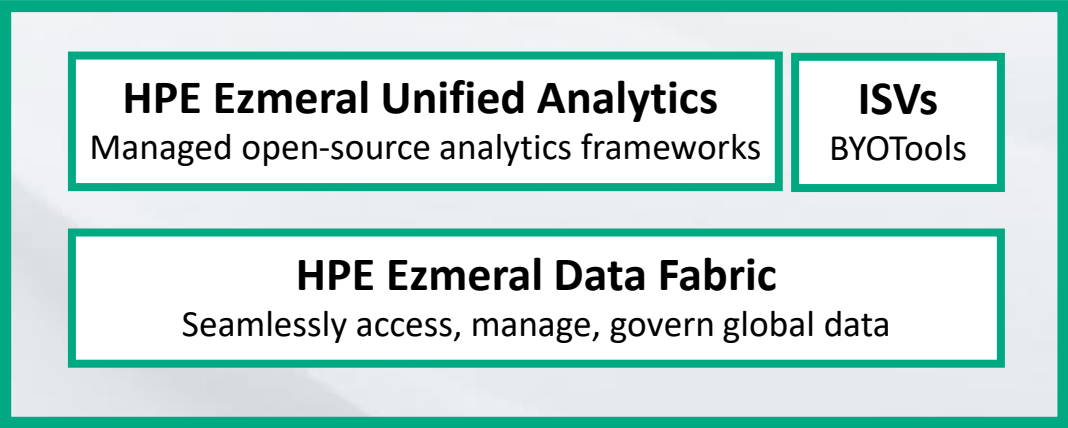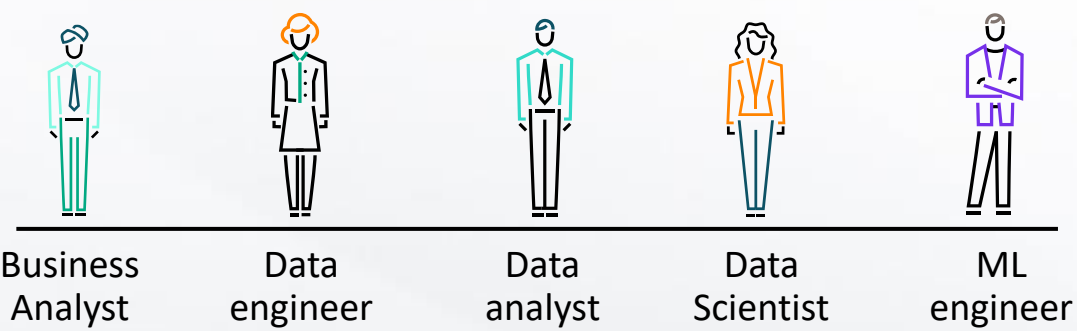
Edge ——— HPE GreenLake / On-premises / Colo ——— Public clouds

Hybrid cloud by design | **Open and extensible** | **Consistent experience**

HPE Ezmeral Software
單一平台整合常用應用軟體和工具以 加速模型開發與模型訓練

Common platform and user experience

Data engineer · Data analyst · Data scientist · ML engineer · Business analyst

Addresses full spectrum of AI and analytics

Business edge locations · Colocation facilities and data centers · Public clouds

Global visibility and control

智慧工廠應用案例

DRAM MFG smart manufacturing

- Drive process improvements across all production steps

- Accelerated AI roll out in fabs

- GPUaaS provides resources to AI/ML training platform

- Enables IT to provides container resources for DevOps, data science and manufacturing users

- Reduced AI implementation from weeks to minutes

Video inspection reduced waste and raised DRAM quality

Centralized and simplified processes accelerated data science projects

HPE Ezmeral Marketplace—fast install & deploy of open-source apps
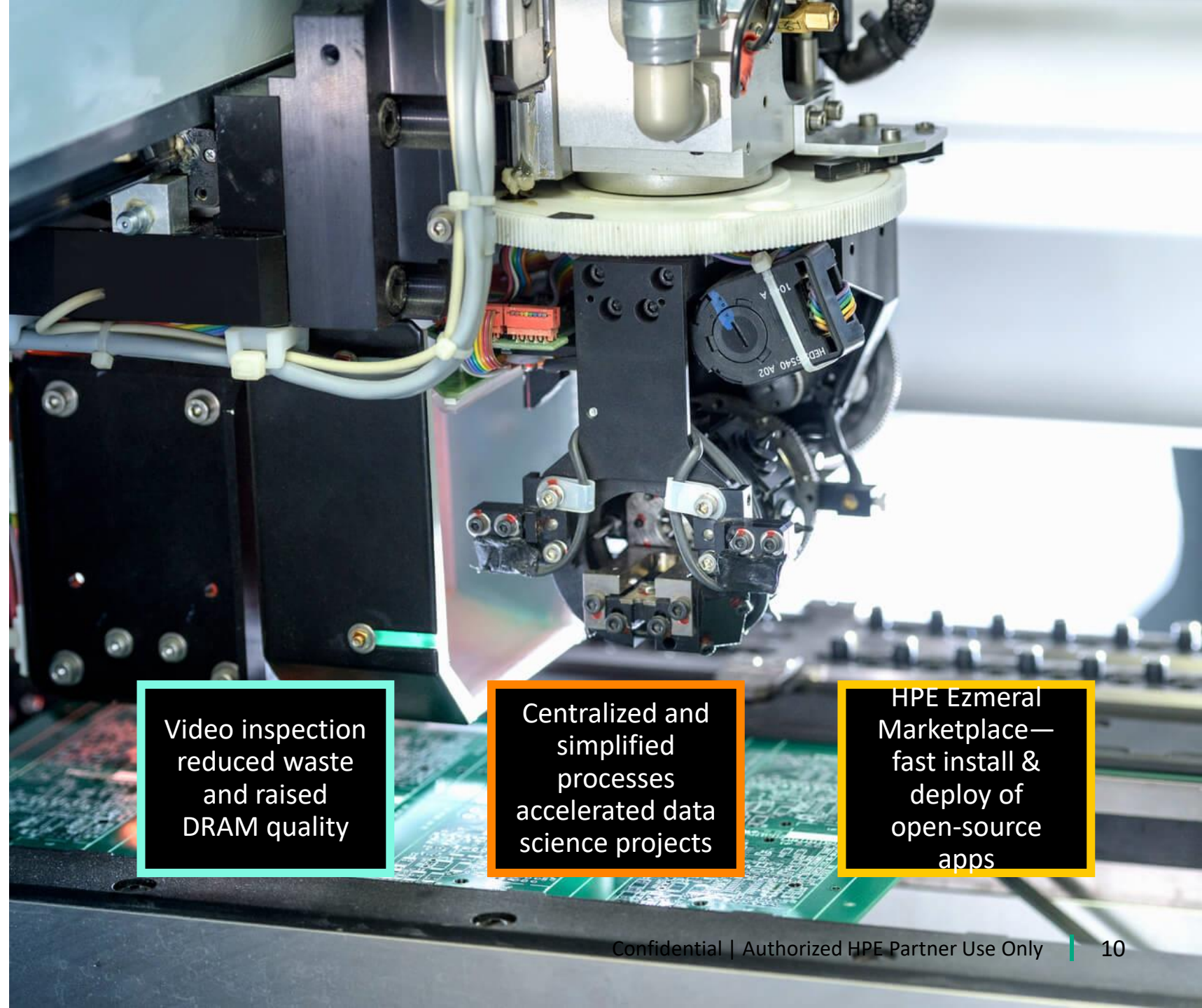
零風險的單一數據服務平台
cloud operational experience
for all workloads, from edge to cloud

Today's workloads demand a new data platform that offers:

雲體驗
AI智能管理與維運
that is AI driven for simpler storage and data management

彈性擴充與
多元數據服務
eliminates silos with a flexible architecture, that serves all data types and maximizes efficiency

混合雲
數據保護和備援服務
seamlessly integrated, without needing point solutions

儲存雲管理平台 提供單一入口及各式儲存服務

Store.
Manage.
Protect.

Welcome to Data Services Cloud Console

備份&復原
Backup and Recovery
Automated protection with rapid recovery and cost efficient long term retention.
Launch

區塊儲存
Block Storage
Simple and easy to provision, protect, and manage block storage that meets your application needs.
Launch

VM 資源效能分析
CloudPhysics
Quickly analyzes your data center infrastructure to reveal cost and performance optimizations.
Launch ⧉

儲存資源服務
Data Ops Manager
Simplify storage management at scale with fleet-wide management and monitoring.
Launch

災難備援
Disaster Recovery
Continuous data protection for Disaster Recovery and data mobility.
Launch

檔案儲存
File Storage
File-based storage accessed through standard file serving protocols.
Launch

超融合服務
HCI
Global lifecycle management of HCI infrastructure and virtualization resources.
Launch

安裝和設定
Setup Service
Simplify new storage systems setup at scale with fleet-wide configuration.
Launch

Intuitive cloud experience on prem

Unified management across the data lifecycle

One-stop edge to cloud management

Store.
Manage.
Protect.

- 資料保護4-3-2-1
- 雲地備份/資料備援
- 服務異地和
  雲端啟動服務
- 即時惡意勒索病毒
  加密 警示
- 數據安全方舟計畫
  Cyber Resilient Vault

HPE GreenLake for
Backup and Recovery

Unified SaaS backup service for your on-prem and cloud workloads
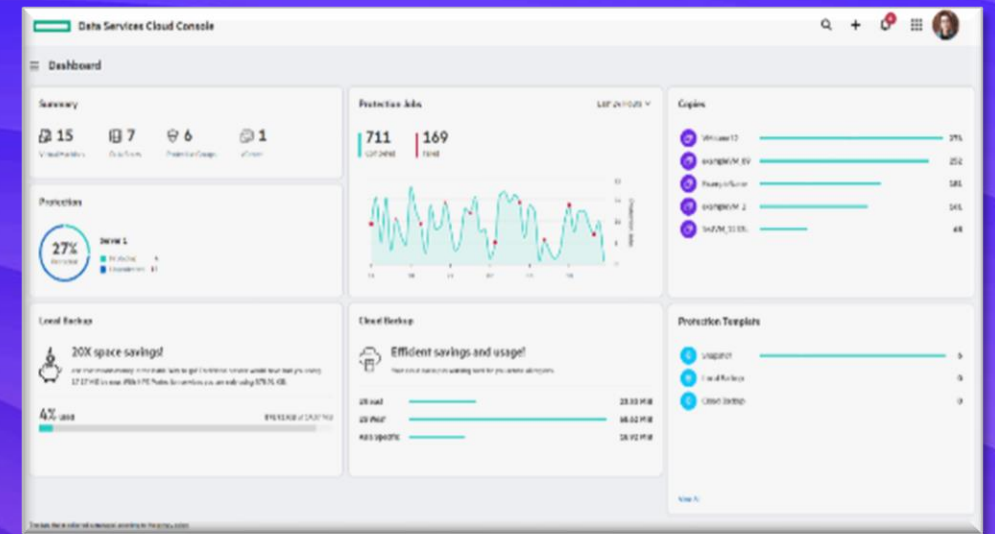
HPE GreenLake for
Disaster Recovery

Unlocking the fastest recovery experience in one simple platform—with unlimited scale

HPE 永續目標計畫
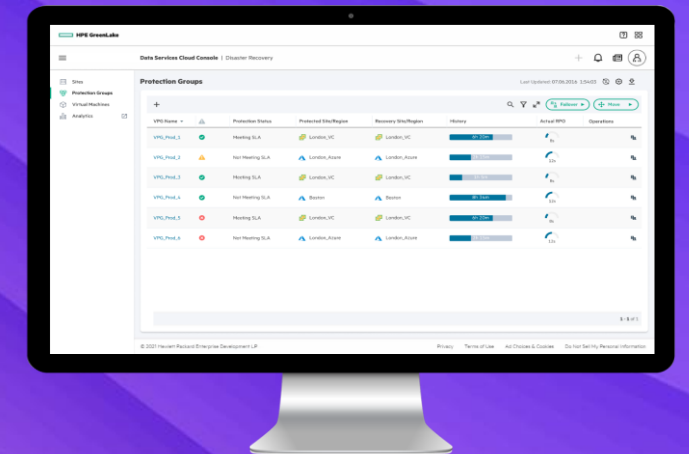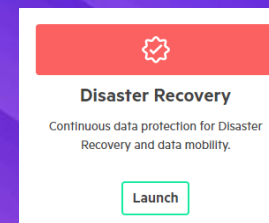
The advantages we seek for you are the same as what we seek for ourselves

Commitment to be a net-zero enterprise across our entire value chain by 2040

70%

reduction in our own operations by 2030

42%

reduction of the use of sold products, upstream transportation and distribution, and direct supply chain emissions by 2030

90%

reduction of our entire global footprint by 2040

HPE 榮獲全球永續領導認證
道瓊永續 , MSCI, S&P Global

Industry leader
in sustainability practices

End-to-end
sustainable IT strategy

Global expertise
and partner ecosystem

Member of
Dow Jones
Sustainability Indices
Powered by the S&P Global CSA
96th percentile, 2022

KNOWTHECHAIN
#1 ranking, 2022 & 2020

MSCI
ESG RATINGS | AAA

| CCC | B | BB | BBB | A | AA | AAA |

DEI BEST PLACE TO WORK FOR
DISABILITY INCLUSION 2022
100% DISABILITY EQUALITY INDEX

CHRB
Corporate Human
Rights Benchmark
#1 ranking for global
ICT companies, 2022

2022 **WORLD'S MOST**
ETHICAL
COMPANIES®
WWW.ETHISPHERE.COM

BEST
PLACES TO WORK
2022 for LGBTQ+ Equality
100% CORPORATE EQUALITY INDEX

Sustainability Award
Silver Class 2022
S&P Global

CDP
DISCLOSURE INSIGHT ACTION
A LIST
2022
WATER

POINTS OF LIGHT
THE CIVIC
50

SUSTAINALYTICS

GLOBAL100 2023
THE WORLD'S MOST SUSTAINABLE CORPORATIONS

=
Bloomberg
Gender-Equality
Index
2022

PLATINUM Top 1%
2022
ecovadis
Sustainability
Rating

AMERICA'S MOST
JUST
COMPANIES
CNBC 2023

SUSTAINABLE IT : IT 設備回收再造 循環經濟 節能省碳

Deliver transparent reporting on the impact of sustainable IT asset management strategies

HPE Circular Economy Report

Operational Efficiency And Visibility

Full IT Asset Lifecycle Management

Plan, fund, procure, utilize and retire tech in a globally consistent way

HPE Accelerated Migration Services

Circular economy can be hosted in
HPE GreenLake

Overcome budget limitations, supply chain constraints and extend the useful life of assets

HPE Certified Pre-Owned Services

Drive Circularity

Sustainable Transformation

Maximize capacity and extract value of your multi-gen IT infrastructure

HPE Asset Upcycling Services

HPE benefits from its own workload-centric approach – HPE IT example[1]

Workloads

- Reduced Applications from >2,000 to 700
- Consolidated SAP Systems

Equipment

- Moved from old equipment to new equipment

Data Center Facility

- Moved from several old data centers to 2 efficient co-lo facilities

Results:
80%+ Reduction In Carbon Emissions

Estimated Breakdown

■ workloads ■ equipment ■ facilities
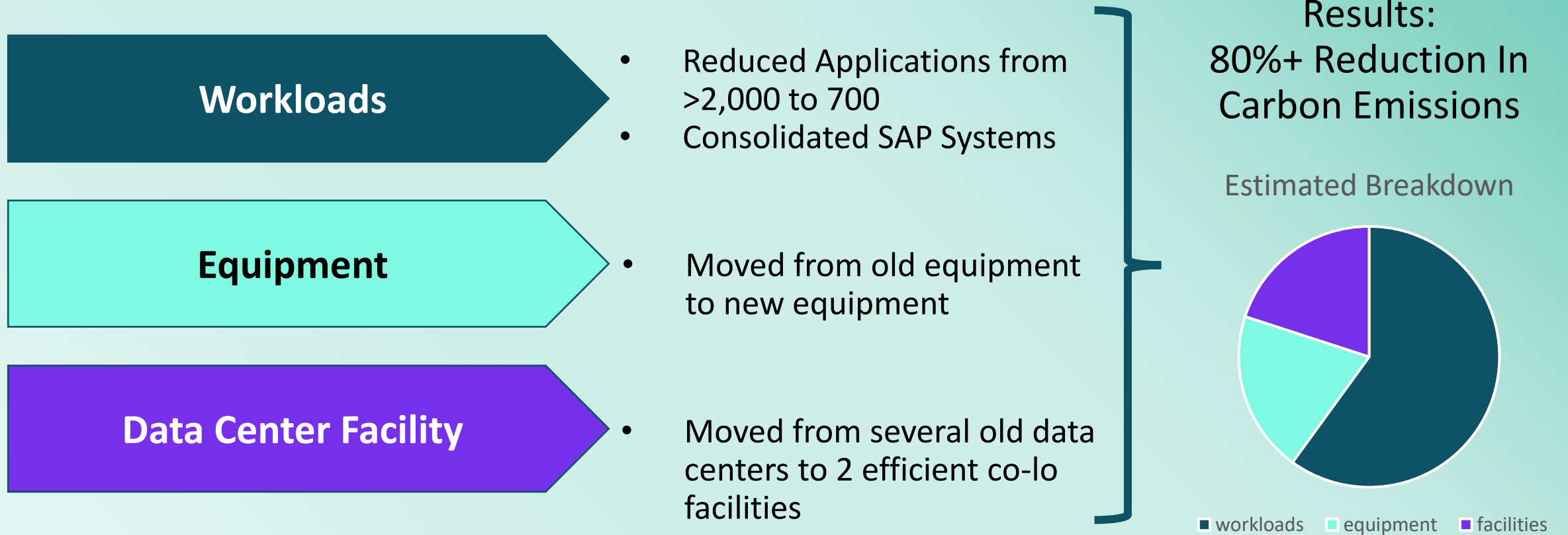
創新永續儀表板
Sustainability Dashboard via HPE GreenLake

operating model

Operating experience

能源電力使用 kWh

碳排放量 CO_2

電力成本 Costs

Usage Telemetry

IT Assets

Recommendations

Aiding carbon footprint reduction

Analysis · Insights · Reports

全方位IT永續服務
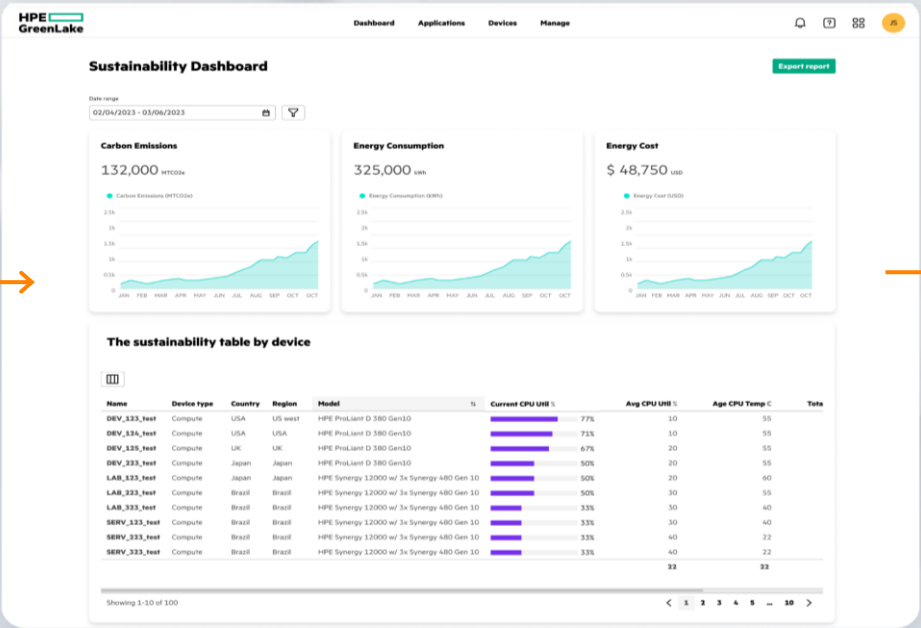
Challenges

Outcomes

Perceived value

Carbon awareness

Competing priorities

Regulatory awareness

Where to start?

Vendor mgmt.

Optimization policies

Sustainable decommission

Sustainable consumption

Asset procurement

KPI's & Metrics

Communications

Strategy

Emissions monitoring

Transformation (6 R's)

Carbon footprint assessment

Discovery

Sustainable cert.

Energy & carbon reporting

Usage monitoring

Water usage

Energy efficiency

Trade-off analysis

Energy workshop

Project sustainability dashboard

GreenLake Central

GreenLake

POC enablement

DC consolidation

Certified pre-owned

Virtual warehouse

Asset upcycling

Workload & data balanced efficiency

Workload efficiency

Utilization improvements

Equipment efficiency

Energy efficiency

Energy source resiliency

Shared vision

Start here

Strategy workshop

Workload Right Mix Advisor

Sustainable Data Center Services

HPE GreenLake

HPE Financial Services

Outcomes
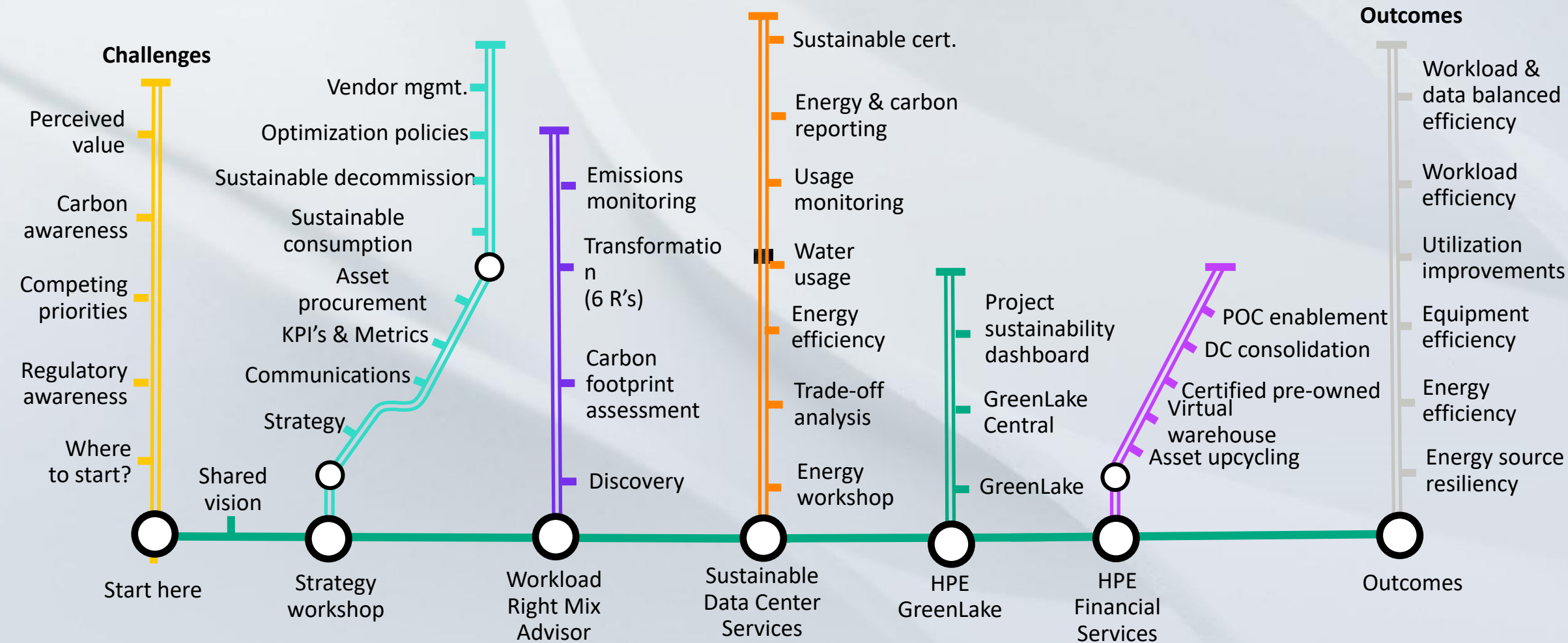
HPE GreenLake 雲服務 協助企業達成永續和數位轉型目標

Sustainability as a catalyst

HPE GreenLake
edge-to-cloud platform

IT 即服務
設備服務化 管理雲端化
資訊服務 隨選隨用
節能省碳 循環經濟
IT永續服務

Sustainable transformation

Holistic framework
Advisory services, design expertise and proven methods to speed your journey

Operational efficiency and visibility

Sustainable innovation
Innovative solutions to reduce energy consumption, carbon footprint – and optimize utilization

Full asset lifecycle management

Circular economy
Use assets longer, consolidate, upcycle assets – and free up trapped value to self-fund your transformation

Thank you