



Increase Scale and Efficiency with Simplified Networks

Re-architecting networks for AI-ready connectivity

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PSOSP-1866

CISCO *Live!*





Agenda

- AI changes network connectivity
- Building blocks for AI connectivity
- Cisco Agile Services Networking
 - Portfolio innovations
 - Customer outcomes
- Evolving the Internet and AI ecosystem

Cisco powers how people and technology work together across the physical and digital worlds

AI-ready data centers

Transform data centers to power AI workloads anywhere

Future-proofed workplaces

Modernize everywhere people work and serve customers

Secure global connectivity

Digital resilience

Keep your organization secure, reliable, and performing across the entire digital footprint

Accelerated by Cisco AI

AI is re-shaping network connectivity

2022

ChatGPT released

2024

65% of organizations
regularly use generative AI

2027

62% of total data will be
processed at the edge

2030

120% CAGR increase in
AI-enriched network traffic



Opportunities to monetize AI connectivity



We need to re-architect networks for AI-ready connectivity

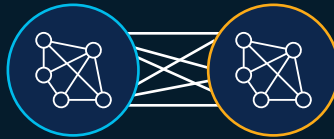
Flexible access

Increased data generation and consumption



Distributed functionality

Network investment closer to end-user demand to create new customer experiences

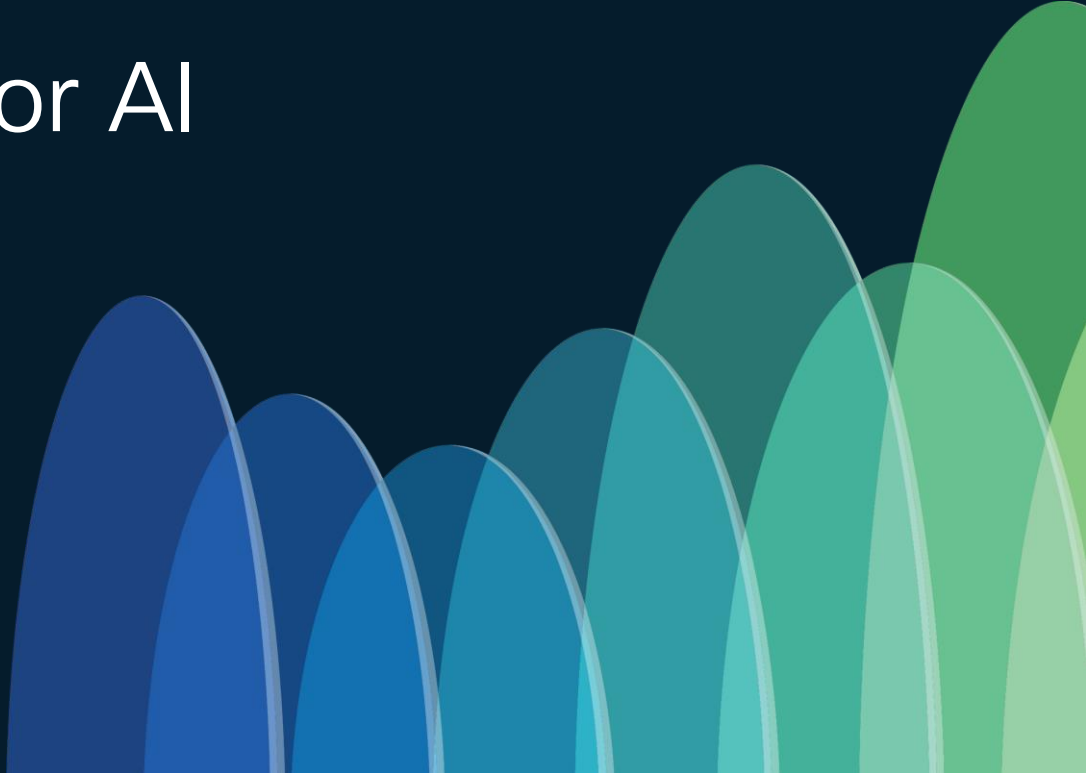


Data center connectivity

AI-training and inference workloads distributed between data centers



Building blocks for AI connectivity



Building blocks for AI connectivity



Simple

Reduce cost and increase efficiency with a converged infrastructure for flexible service delivery



Resilient

Assure experiences and mitigate risk with AI-powered automation, observability and security



Intelligent

Monetize network and services capabilities from an architecture optimized for intelligent service delivery



Simplify networking for AI connectivity

Accelerate deployment, improve efficiency, increase flexibility

Flexibly deliver services from locations closer to end-user demand



Service optimization

End-to-end service convergence and network slicing

Reduce architecture complexity and cost



IP and optical convergence

Routing platform for network and layer convergence

Simplify networks with systems built from a unified silicon architecture

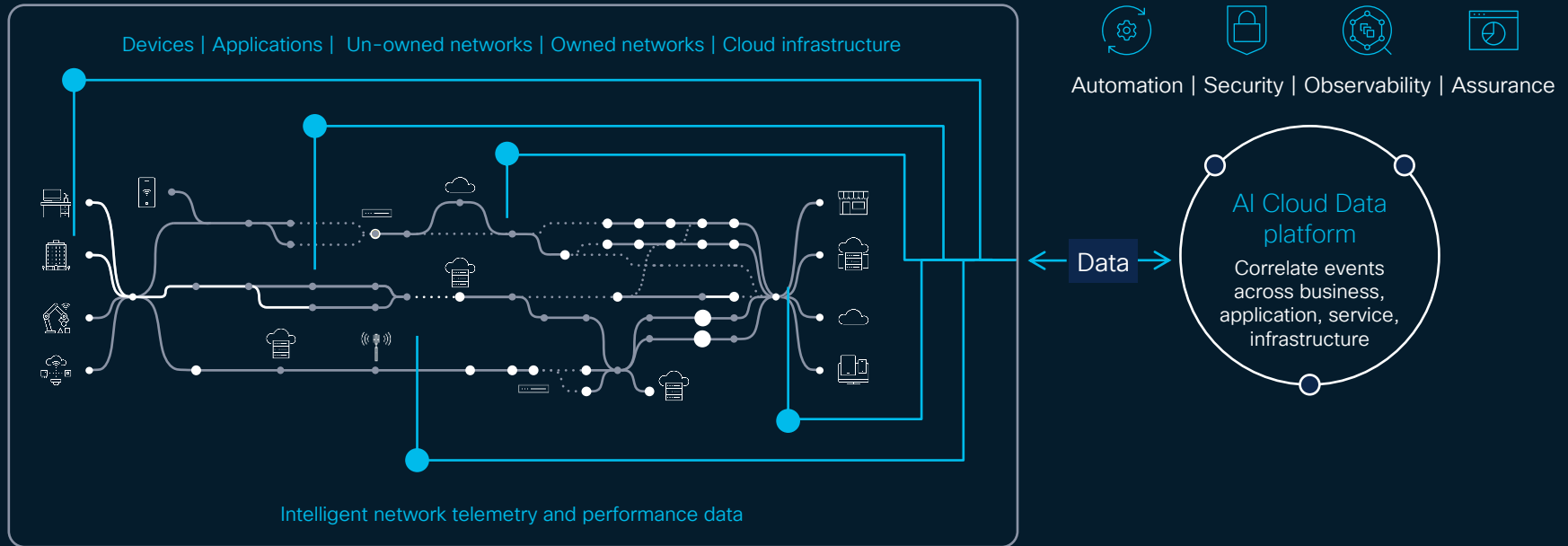


Programmable silicon

Consistent experience and capabilities across devices

Assure experiences with resilient networking and services

End-to-end visibility, intelligence and closed-loop operations



Intelligent service delivery with intent-based networking

Monetize network and service capabilities



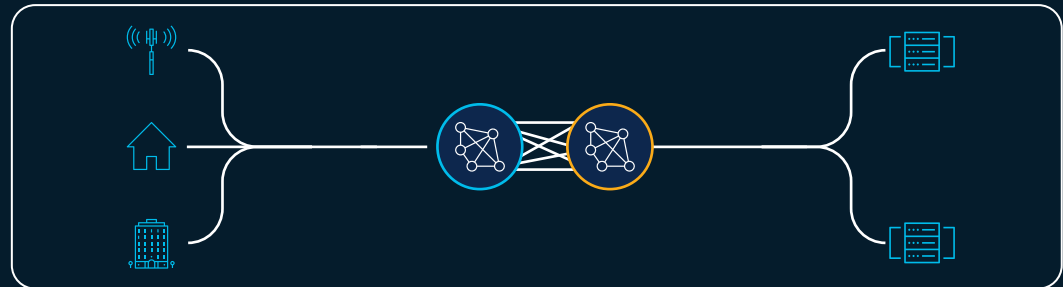
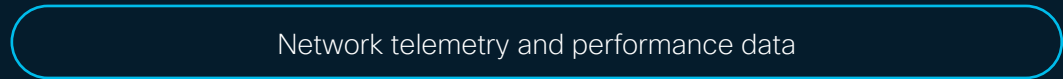
Price and cost optimization for service delivery



Differentiated SLAs consumed as a service



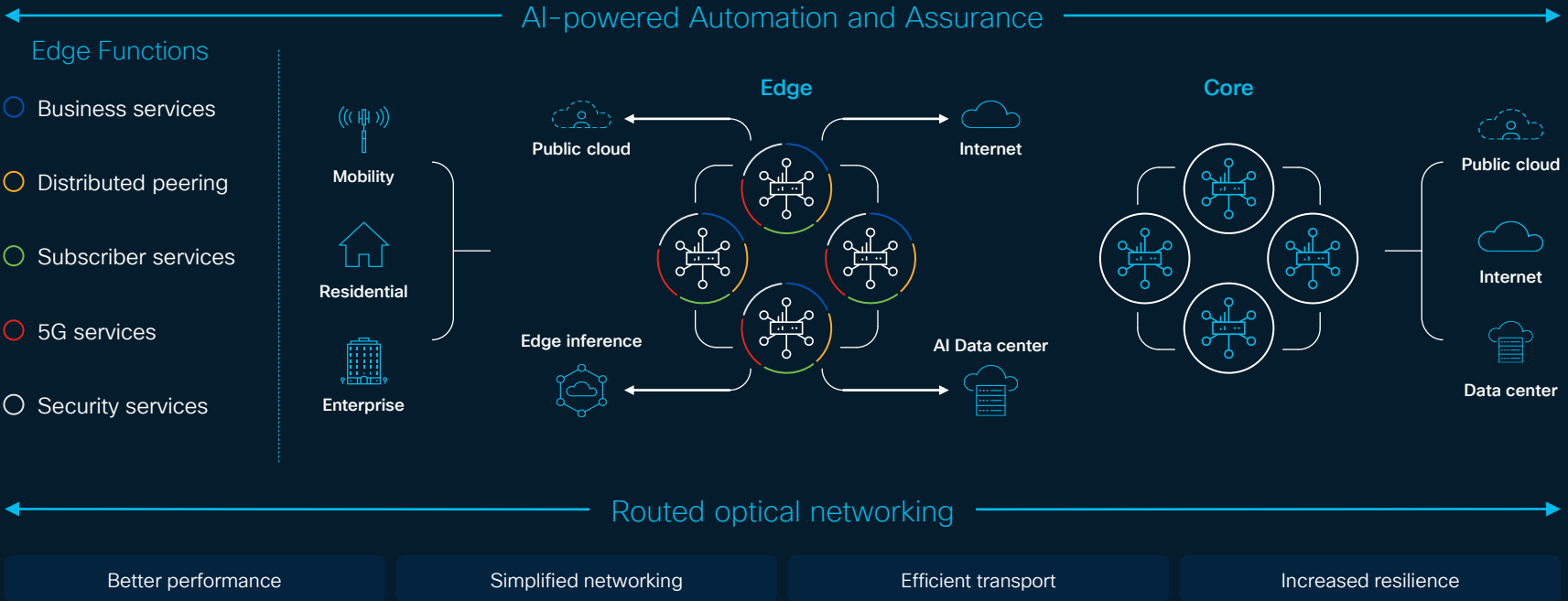
Program network characteristics based on business intent



Building an Agile Services Networking architecture

Introducing Cisco Agile Services Networking

A network architecture for AI connectivity that enables service providers to monetize the delivery of assured services and networking



Portfolio innovations to power AI connectivity



Routing infrastructure



IP / optical convergence



Network programmability



splunk
a CISCO company

Observability and insight

1

Cisco 8000 Cisco Silicon One

Unparalleled performance, TCO and operational simplicity

2

Cisco Routed Optical Networking

Dramatic cost and energy savings with coherent pluggable optics

3

Cisco Crosswork Network Automation

SLA differentiation and policy control across DC, access, metro, backbone and cloud

4

Cisco Provider Connectivity Assurance

Real time visibility and insights for proactive and predictive experience assurance

Cisco Silicon One

Scalable and programmable solutions for metro and access networks
Consistent control, sustainability, security, and manageability from the silicon level



One architecture



High capacity and scale



Service convergence



Optimal network design



Fully shared packet buffer



Flexible interfaces



Traffic management and load balancing



Comprehensive security



Programmable services



Deep visibility and analytics

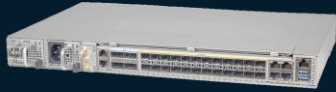


Cisco Routing Platforms for Access and Edge

Consistent capabilities across devices and network architecture

Converged Access

Silicon One A100



8011-4G24Y4H-I
>1T 1RU



8011-32Y8I2H2FH
>800G 1RU

Services scale and feature set for access and aggregation: Class C Timing, MACsec and IPsec encryption, and QoS features

Distributed Edge

Silicon One K100



8712-MOD-M
6.4T 2RU



8404-SYS
4.8T 4RU

Combines the efficiency and simplicity of a fixed single processor system with redundancy and interface diversity from different MPAs

Cisco Coherent Pluggable Optics

Extend Routed Optical Networking to access, metro, long-haul, and sub-sea with QSFP28 100GZR, 400G ULH, 800ZR/ZR+, and 1.2T CIM 8 coherent optics

Increased efficiency

reduced cost, power, and space per 100G

Maximize port utilization

Flexible interfaces from 100G to 800G



Robust interoperability

fully compliant to ZR/ZR+ standards

High quality & reliability

proven high-volume manufacturing in silicon



DCI



Metro



Regional



Ultra Long Haul

Cisco Crosswork Network Automation

AI-enabled operations across service and device lifecycle



AI-powered capacity
planning and forecasting



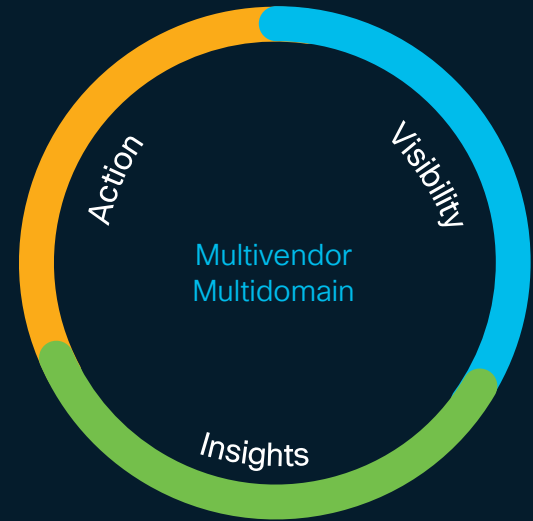
Intent-based provisioning
and health monitoring



Multi-layer, multi-vendor
management and operations



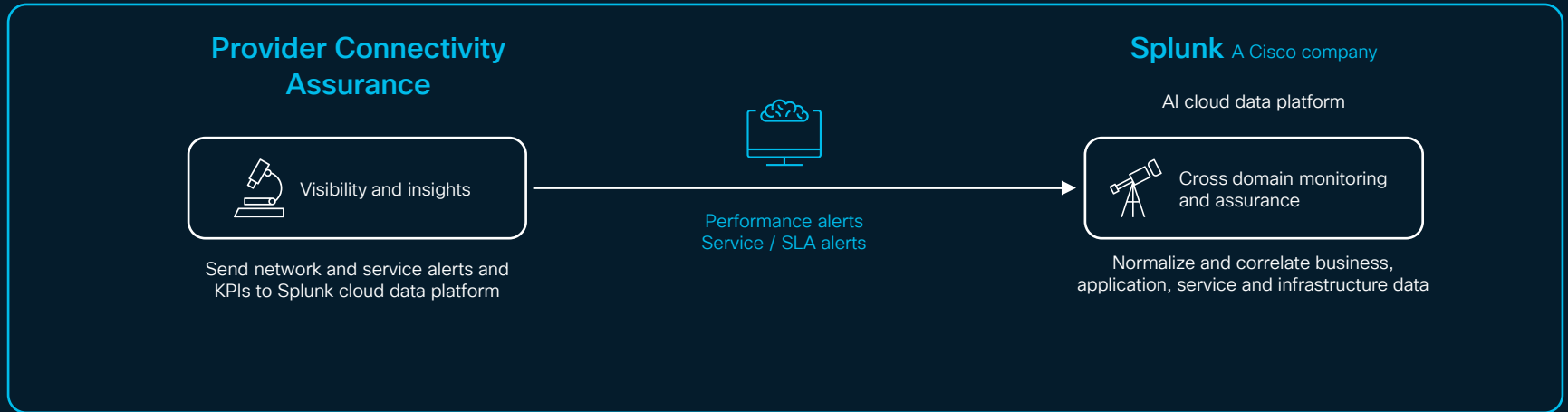
Dynamic infrastructure
management



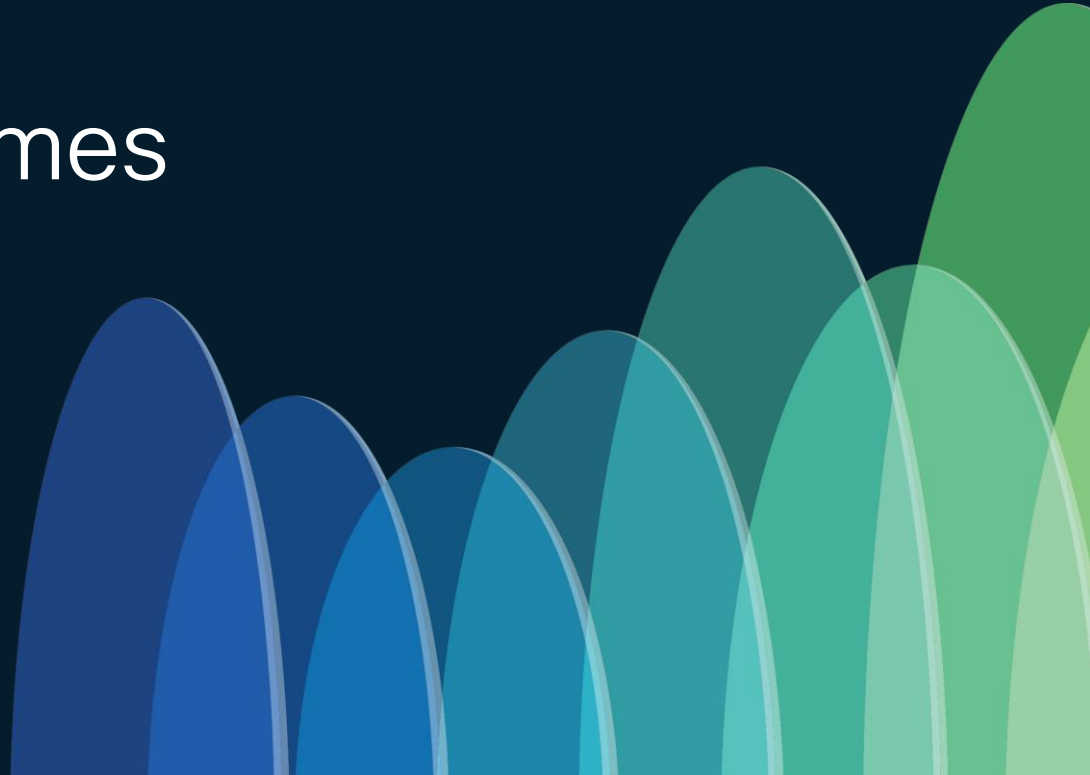
Cisco Provider Connectivity Assurance

Real-time alerts and cross-domain monitoring with Splunk

- ✓ Simplify operations with a unified view of customer experience
- ✓ Identify, prioritize and predict customer-impacting events
- ✓ Drive automated decisions to accelerate resolution



Customer outcomes



Swisscom
reduces power
consumption

90%
by converging
and simplifying
networking



Challenges

- Complex and fragmented network infrastructure
- Reduce power consumption
- Improve network reliability and streamline operations



Solutions

- Cisco Silicon One
- Cisco 8000
- Cisco Optics
- Cisco Customer Experience

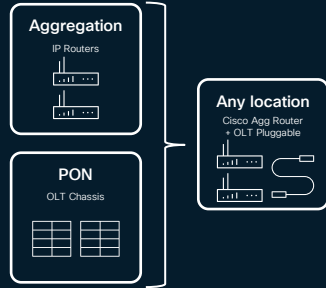


Results

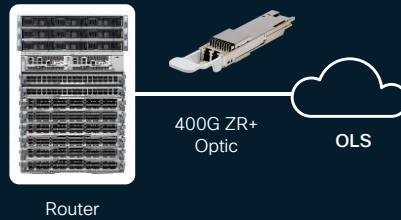
- Simplified and converged network design
- 40% lower Opex and 90% less power consumption
- Improved network availability and reliability

Outcomes powered by Agile Services Networking

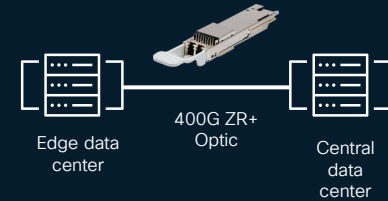
Converged Access



Agile Metro



Agile DCI



Arelion
(formerly Telia Carrier)

76% OPEX savings
64% CAPEX savings

Bell

76% OPEX savings

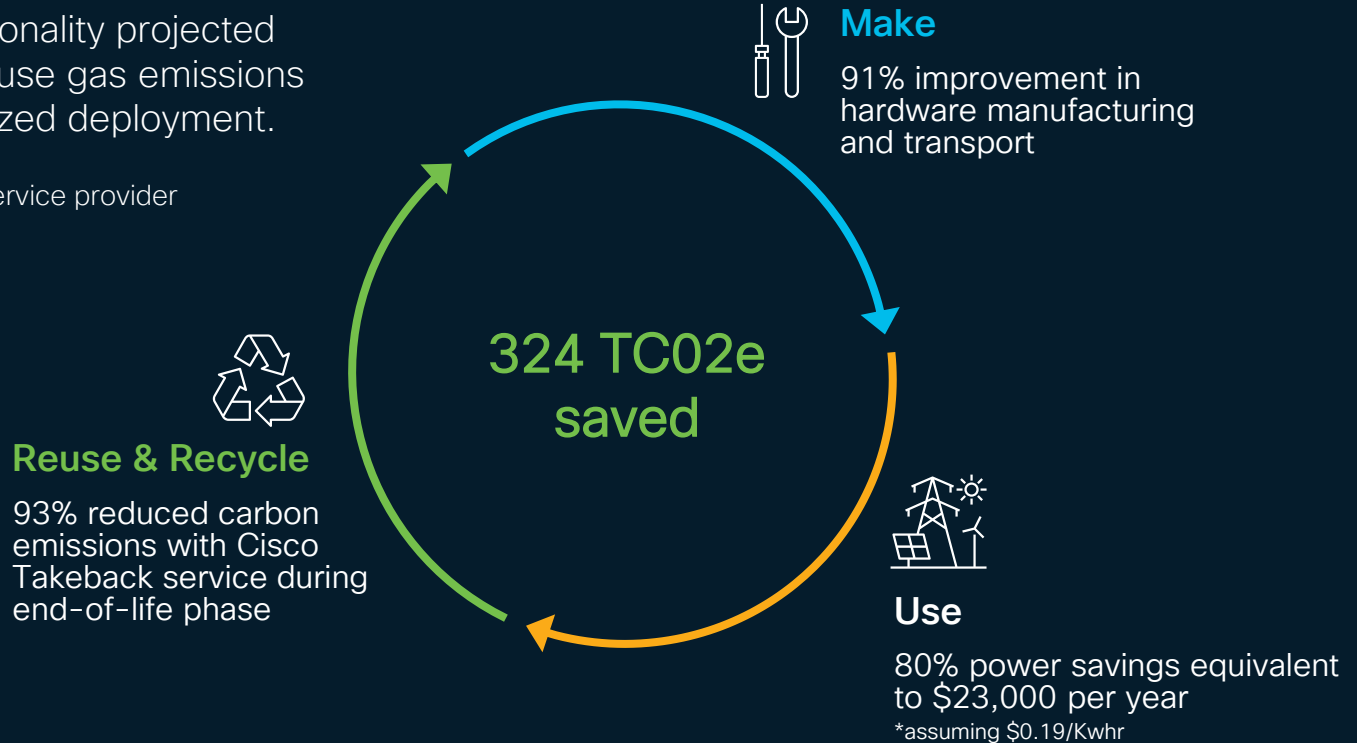
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50% OPEX savings
67% CAPEX savings

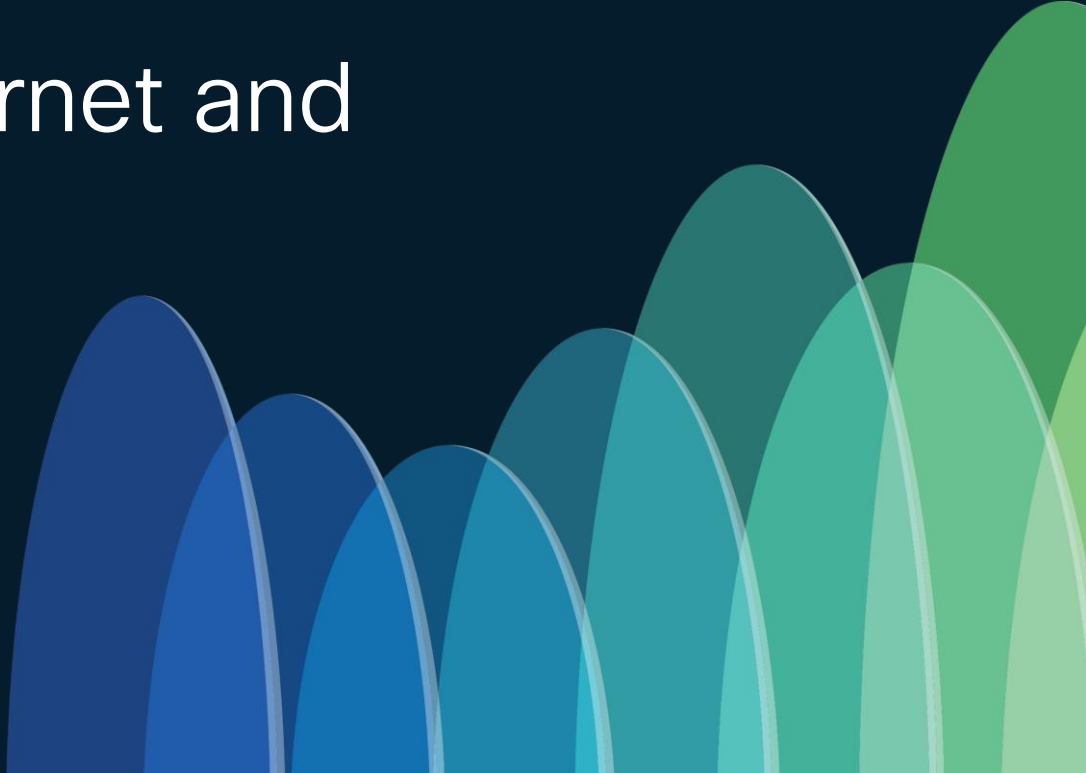
Advancing sustainability goals

Distributed edge functionality projected reductions in green house gas emissions compared to a centralized deployment.

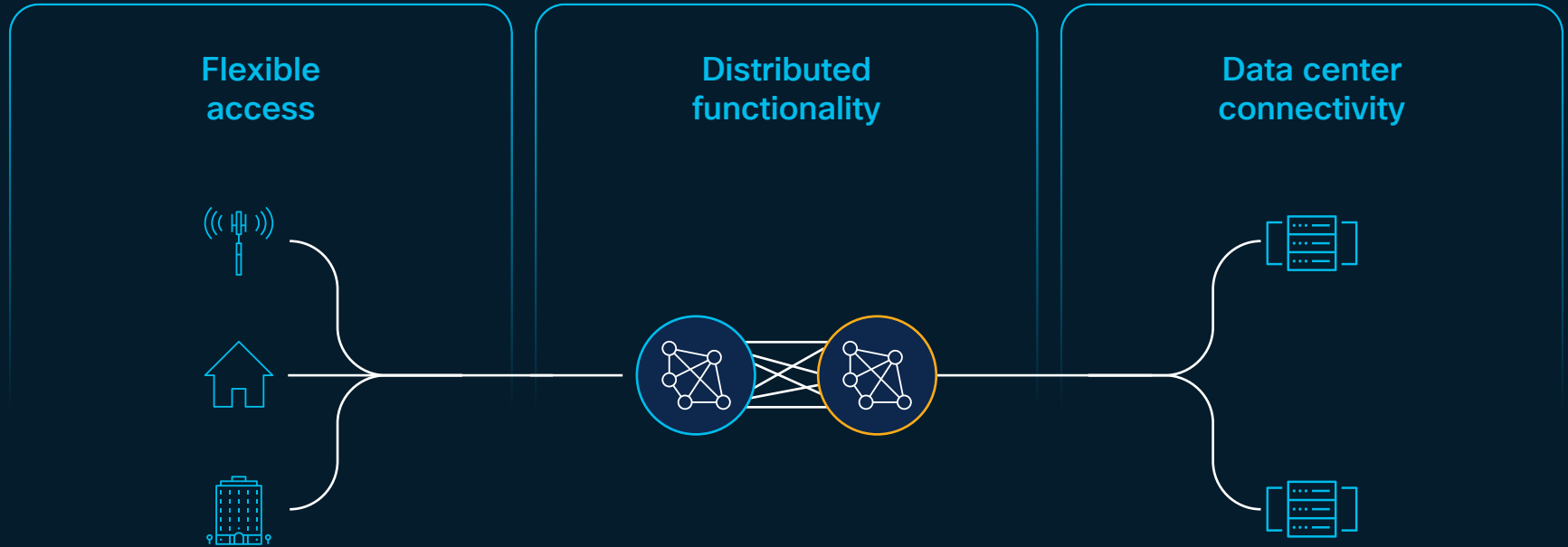
Based on a Tier 1 European service provider



Evolving the Internet and AI ecosystem



Evolving the Internet and AI ecosystem



Cisco Agile Services Networking



Simple

Save money

Reduce cost and increase efficiency with a converged infrastructure for flexible service delivery



Resilient

Protect customer experiences

Assure experiences and mitigate risk with AI-powered automation, observability and security



Intelligent

Make money

Monetize network and services capabilities from an architecture optimized for intelligent service delivery

Cisco innovations

Unified silicon architecture, optics, software, automation, security, data / intelligence platform

Only Cisco unifies networking, security,
and data to power AI-ready connectivity.



Webex App

Questions?

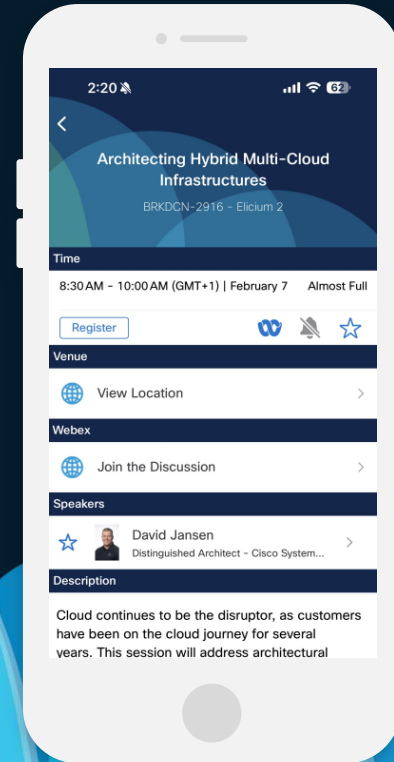
Use the Webex app to chat with the speaker after the session

How

- 1 Find this session in the Cisco Events mobile app
- 2 Click “Join the Discussion”
- 3 Install the Webex app or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 28, 2025.

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Contact me: yschreib@cisco.com



Thank you

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GO BEYOND

A series of overlapping, vertically-oriented ovals in various shades of blue, ranging from light to dark, positioned on the right side of the image.