Fighting the corporate Immune system
Learning from SD-WAN implementations

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IoT will become pervasive in every Industry

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14B IoT Connections by 2022

Billions of IoT Connections

- 2017: 6
- 2018: 8
- 2019: 9
- 2020: 10
- 2021: 12
- 2022: 14

80% of deployments in 2019 were below 500 devices

■ IoT Connections
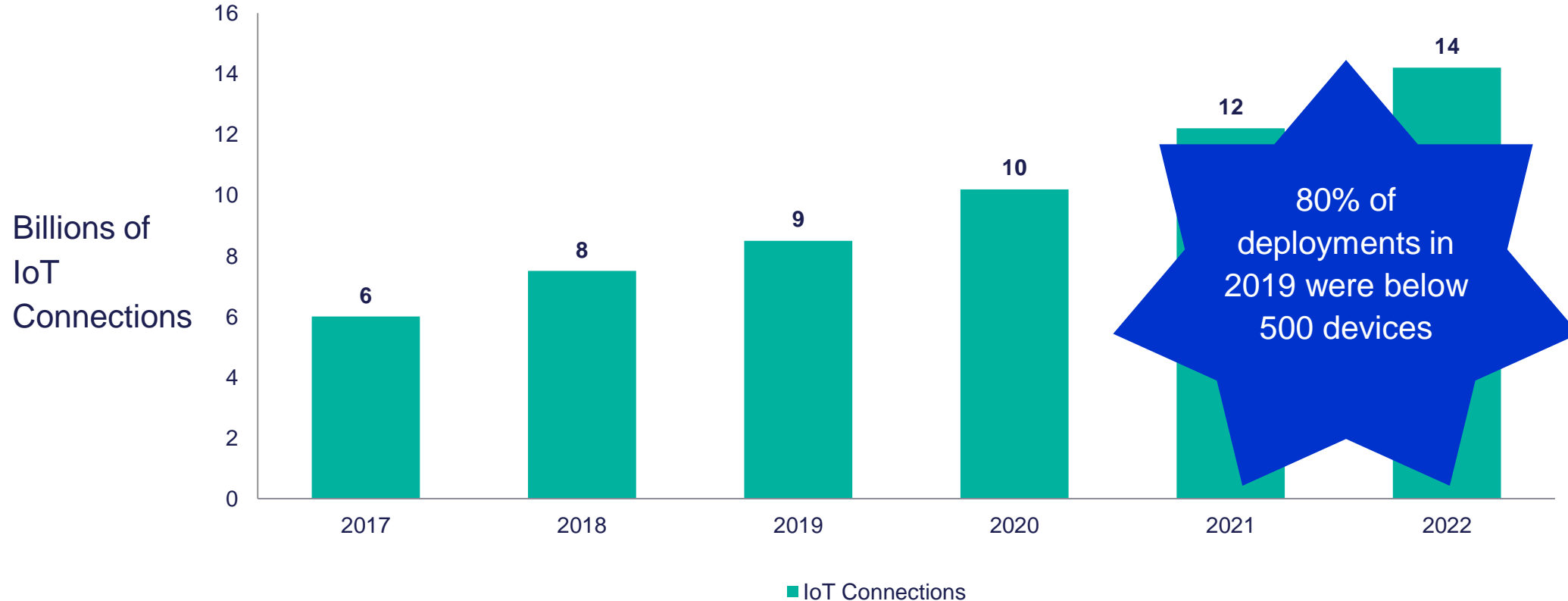
(IDC, 2019)

Enterprise traffic is doubling every three years

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400 EB per Month of IP by 2022

Exabytes
per Month

Year	Global IP Traffic (EB per Month)
2017	122
2018	156
2019	201
2020	254
2021	319
2022	400

60% of mobile data offloaded to IP Networks

■ Global IP Traffic
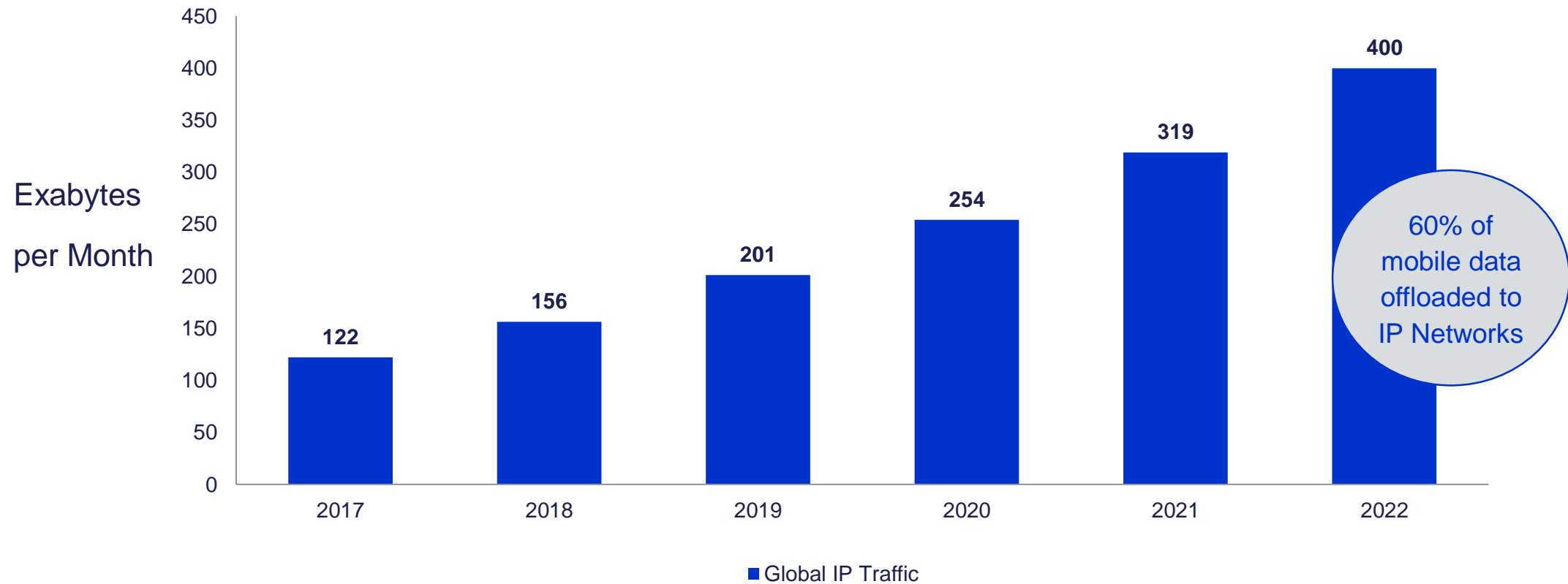
(IDC, 2019)

How do you secure a growing number of end-points?

Hybrid IT environment

Web
Email
Firewall
Data
IoT
Desktop
Cloud
Mobile
Server
Network
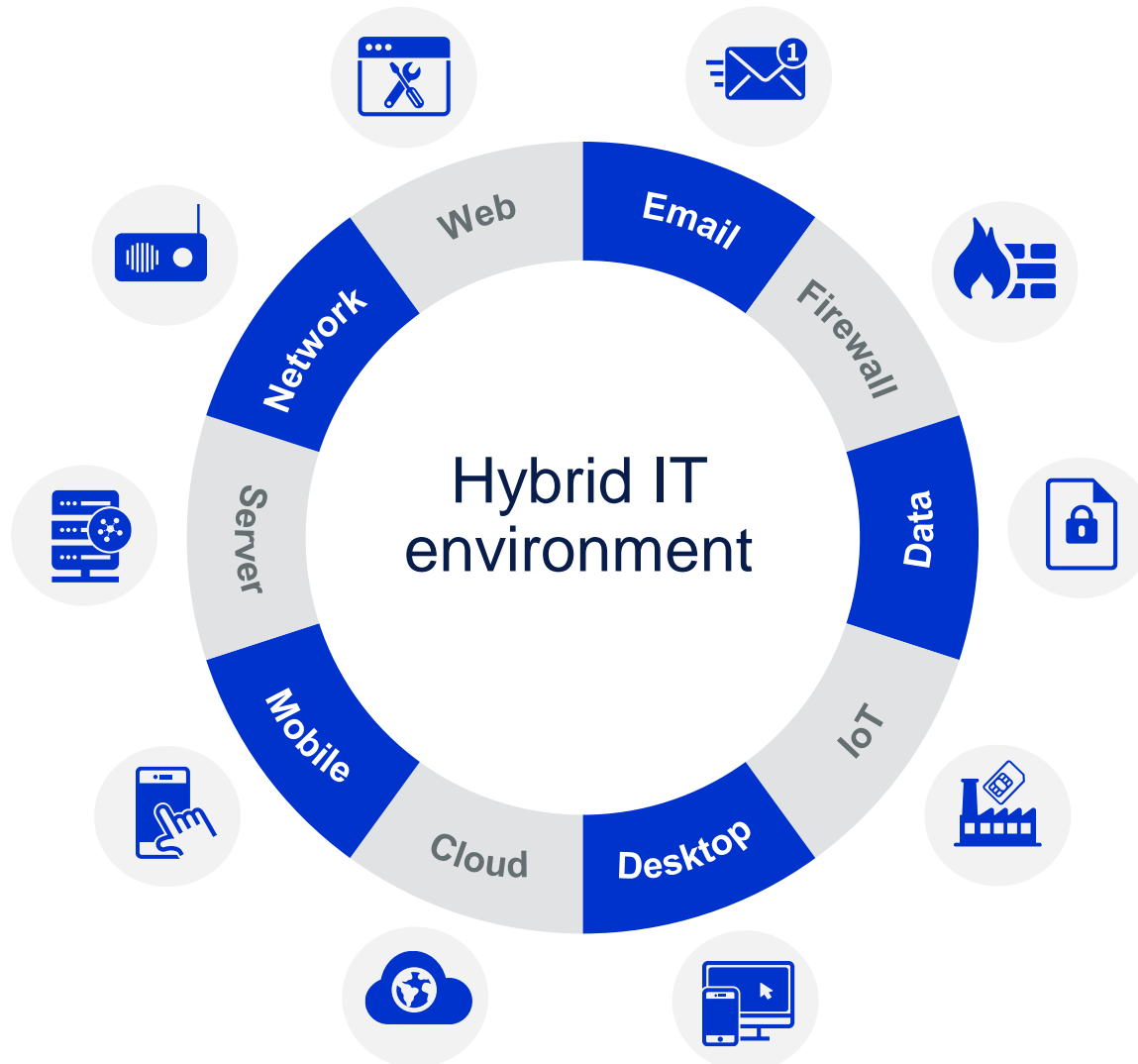
x3 as many
end-points by 2023

(Forbes, 2018)

Organizations are leveraging an average of five clouds

40%
in public cloud by 2020
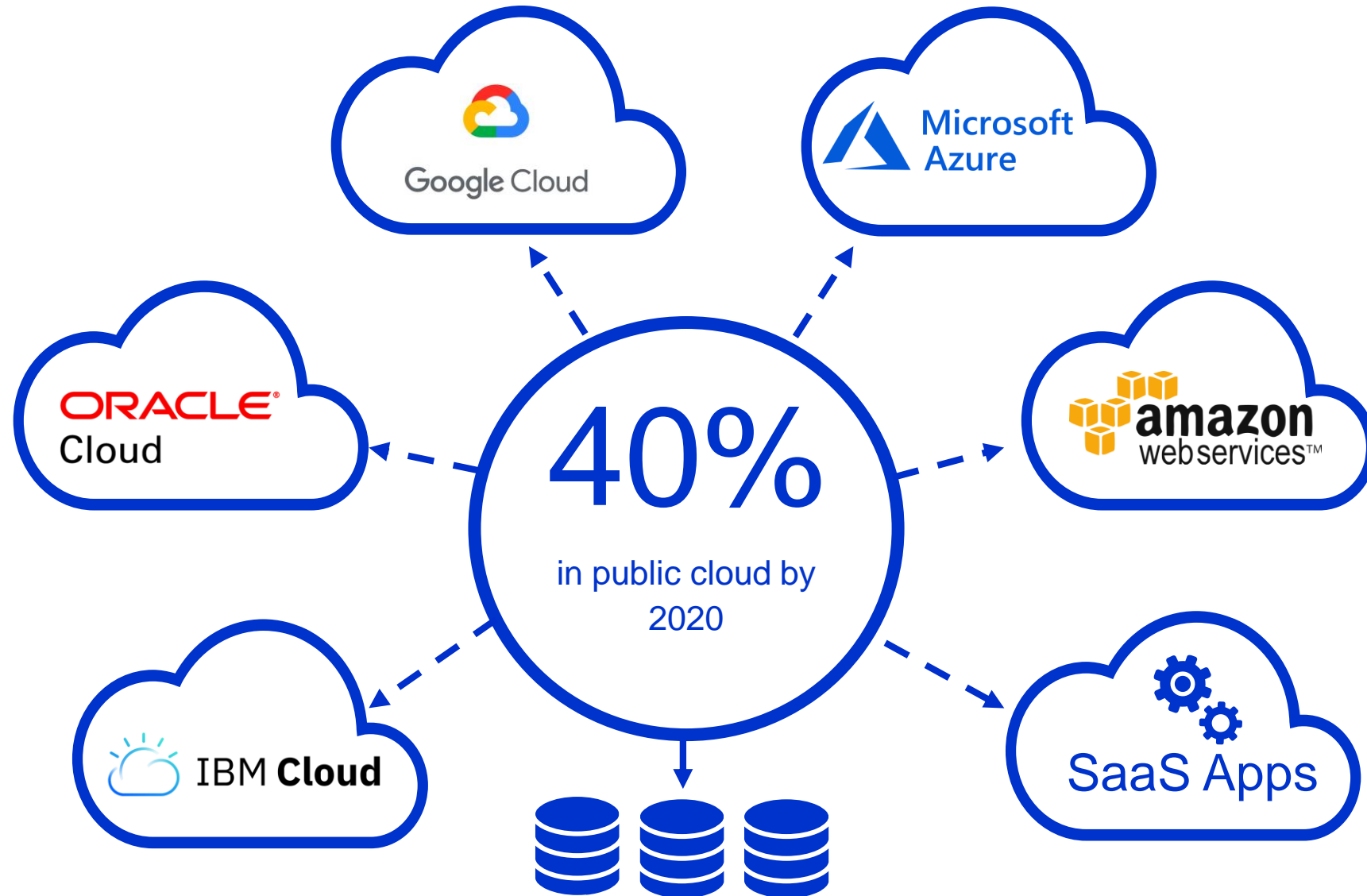
(Logicmonitor, 2019)

Web attacks were the most prevalent in 2019

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Global	Top Attack Type	Top Attack Source
Finance	Web Attacks	United States
Technology	Reconnaissance	China
Business & Professional Services	Web Attacks	United States
Education	Brute Force Attacks	United States
Government	Service-Specific Attacks	United States

x3 number of vulnerabilities since 2016

61% of CIOs see security as biggest challenge to the WAN

(NTT Security, 2019; IDC, 2018)

Granular Application-Driven Security Policy

Granular Internet Breakout By First-packet iQ

Legacy corporate apps

HQ / Hub / Data Center

Custom Apps

Branch

EdgeConnect

CHECK POINT CloudGuard

Customer specified whitelist

Microsoft Teams   8x8

All other web traffic

Office 365 · Google · salesforce · vmware · Azure · workday · Dropbox · amazon web services
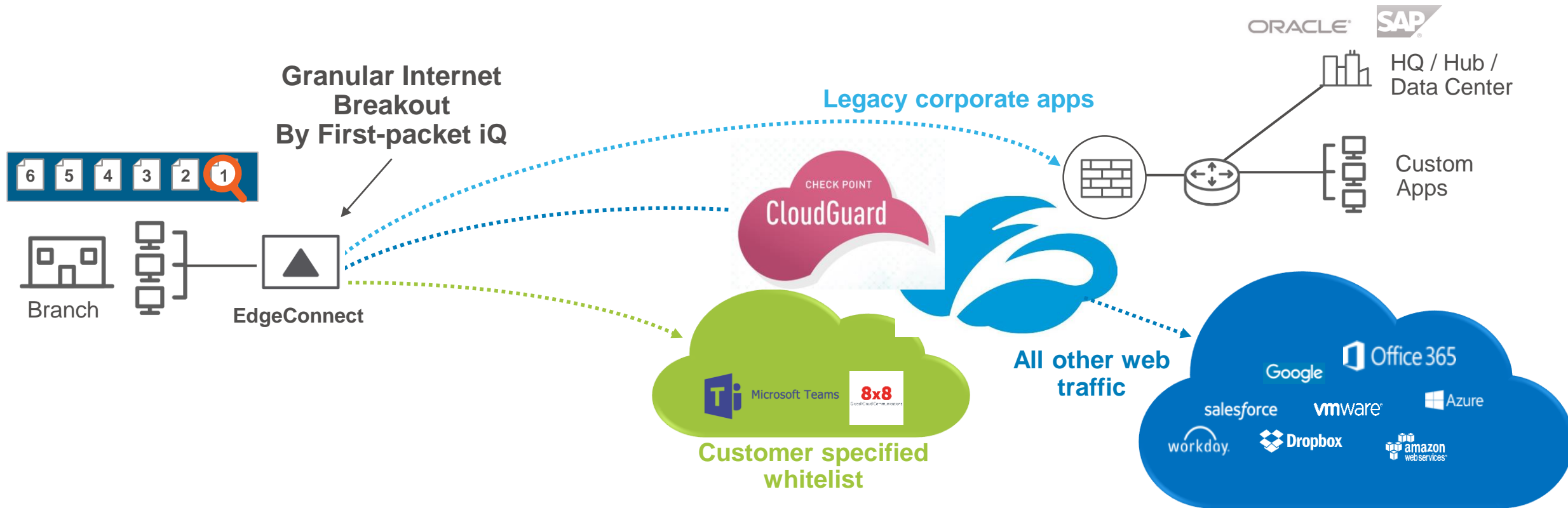
Powers an intelligent WAN Edge | **Steers apps intelligently** | **Improves app performance** | **Saves Capex & Opex**

Why is my WAN not up to speed with the digital world?

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Connectivity by itself is not enough to bring the WAN into the DT era. Network intelligence via business intent overlays is playing a critical role in optimizing the network.

|	
Application Performance	Shifting traffic patterns, diverse application types, dependence on cloud-connectivity, expensive backhauling
Security	Protecting and encrypting decentralized branch office networks, securing traffic destined for the public internet
Automation	The volume of new end-points will inundate WAN capacity, constantly relaying high volumes of data, manual configurations and device-by-device changes
Reporting	Maintaining visibility of growing end-points, devices and multi-cloud environments
Bandwidth Requirements	Unprecedented pressure from growth in cloud, mobility, voice and video traffic

How can SD-WAN help with digital transformation?

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⭐ The WAN needs to be transformative, not restrictive to your cloud-first strategy. The shift to a business-first WAN model.

| Application Performance | Allocate bandwidth, prioritize different kinds of traffic to maintain application performance |

| Intelligent Routing | Balance cost with performance requirements, business-intent application routing, continuous, self learning, outcome oriented |

| Visibility | Visibility of assets, data flows, and security risks in your cloud-based workloads and applications, ensure highest quality of experience, fully automated |

| Security | Rapid detection and response, automatically configure policies, predictive analytics, cooperation with strong technical alliance partners |

| Bandwidth Requirements | Best use of all available network resources (MPLS, broadband, 4G) for higher service availability 10x bandwidth with same budget |

SD-WAN not the solution to all problems – but an important building block

- ✓ May require re-design of underlay network
- ✓ Local internet + MPLS or dual internet (DIA + broadband)
- ✓ Understanding the application landscape
- ✓ Traffic flows and future bandwidth requirements
- ✓ Can MPLS really solve my problems?
- ✓ Security is a key consideration on all counts

What have we learned?

How we see network transformation

- **Business transformation** will not work without considering the network

- **Underlay optimization** is crucial, standardize where possible

- **Bring together sites** into multiple categories for effective management

- **Bring culture** on board and involve people

- **Network connectivity** must fit performance requirements

- **Where** is my traffic heading to?

- **Start small** and understand the issues

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Key

Takeaways

to begin your journey

Network challenges are relevant to the business not just IT

Include the business and communicate challenges

Define the region for your first roll-out

Calculate ROI

Nominate an executive sponsor to streamline your digital transformation

Communicate wins back to the business

Why clients choose NTT

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Flexible Partner

Full-lifecycle managed SD-WAN service incl. customer-owned circuits in 190+ countries

Service excellence

1,200+ professional service engineers with 11,000+ vendor certifications to integrate SD-WAN into your broader ICT infrastructure

Global Footprint

Network, Cloud, UC and DC services coverage in 190+ countries

Secure by Design

Network designed with security in mind – MSS, 10+ GSOCs, broad security portfolio