# Ethernet services

## Colt Technology Services

http://www.colt.net/ethernet

colt

smarter / faster / further

The information delivery
platform for European business

# Slide pack usage instructions

These slides are a compilation of product and technical information. Please include only the slides that are appropriate for your presentation. The slides are organized as follows:
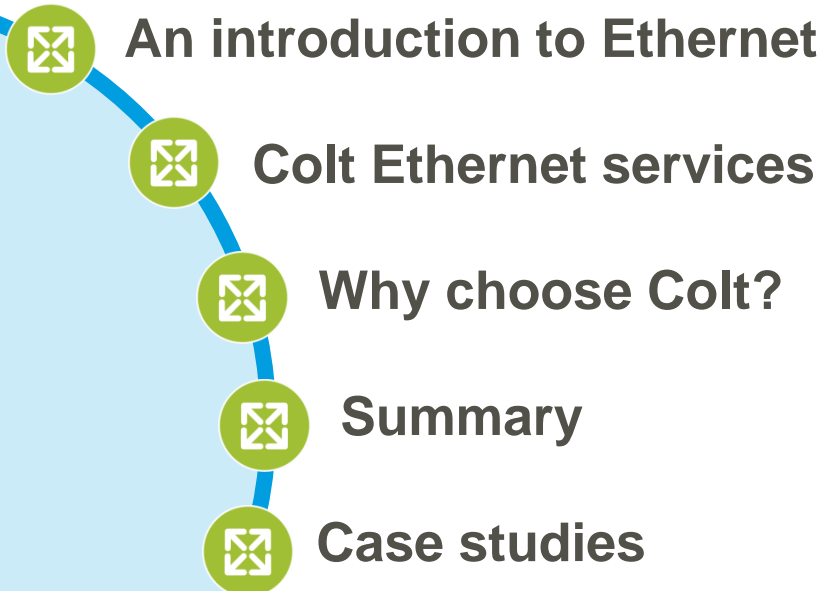
Product information

- An Introduction to Ethernet

- Colt Ethernet Services

- Why Choose Colt?

- Summary

- Case Studies

Technical information

- Technical overview

- Ethernet over SDH

- Ethernet over MSP

- Off Net Ethernet using the Demarcation Device
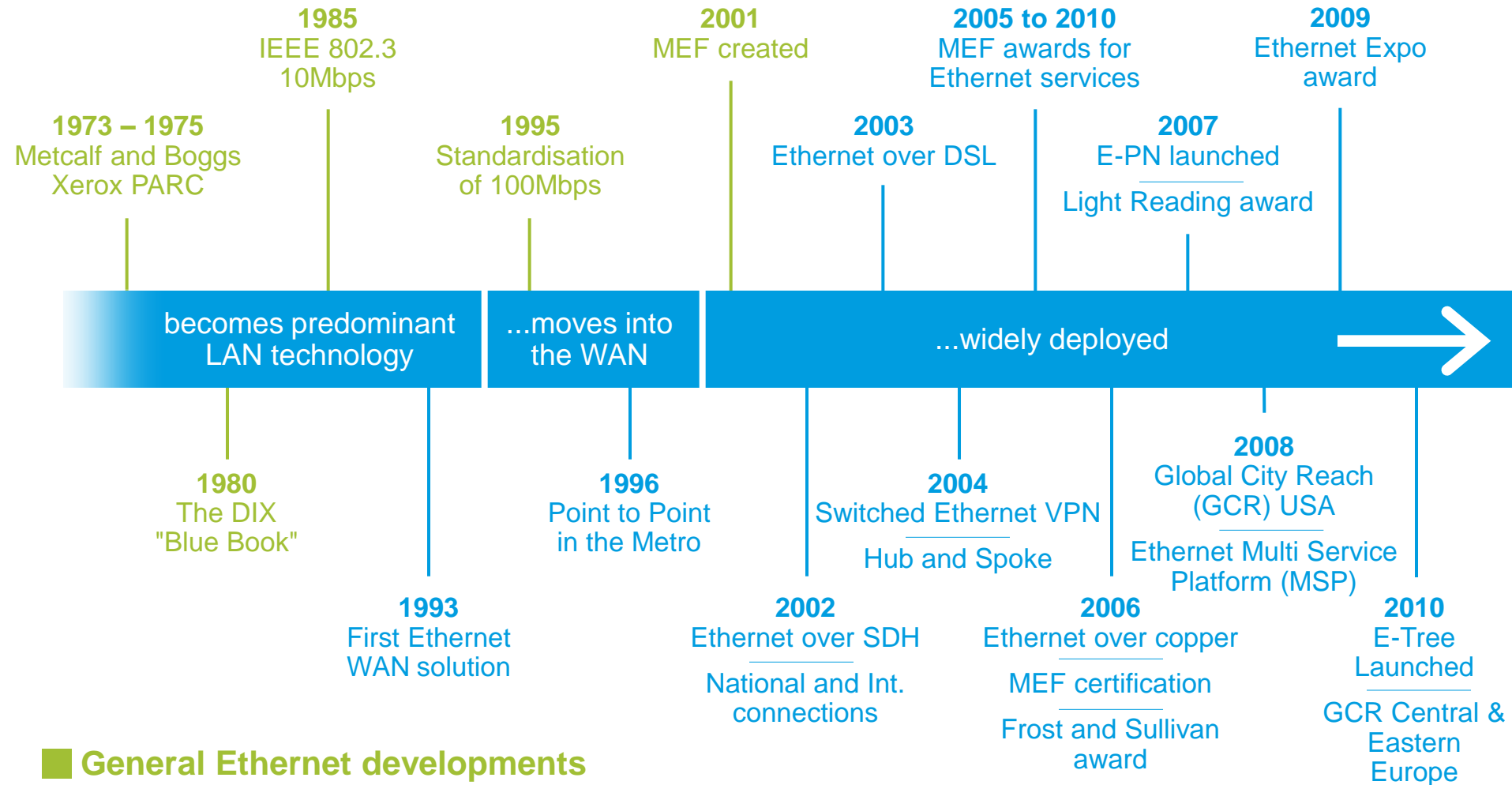
- Support for the business case for Ethernet WAN

colt
smarter / faster / further

# Agenda

- An introduction to Ethernet
- Colt Ethernet services
- Why choose Colt?
- Summary
- Case studies

colt
smarter / faster / further

# The evolution of Ethernet

**1985**
IEEE 802.3
10Mbps

**2001**
MEF created

**2005 to 2010**
MEF awards for
Ethernet services

**2009**
Ethernet Expo
award

**1973 – 1975**
Metcalf and Boggs
Xerox PARC

**1995**
Standardisation
of 100Mbps

**2003**
Ethernet over DSL

**2007**
E-PN launched

Light Reading award

| becomes predominant LAN technology | ...moves into the WAN | ...widely deployed | → |

**1980**
The DIX
"Blue Book"

**1996**
Point to Point
in the Metro

**2004**
Switched Ethernet VPN

Hub and Spoke

**2008**
Global City Reach
(GCR) USA

Ethernet Multi Service
Platform (MSP)

**1993**
First Ethernet
WAN solution

**2002**
Ethernet over SDH

National and Int.
connections

**2006**
Ethernet over copper

MEF certification

Frost and Sullivan
award

**2010**
E-Tree
Launched

GCR Central &
Eastern
Europe

■ **General Ethernet developments**
■ **COLT specific milestones**

colt
smarter / faster / further

# Why Ethernet?

## Cost

## Flexibility

**1**

**2**

## Simplification

**3**
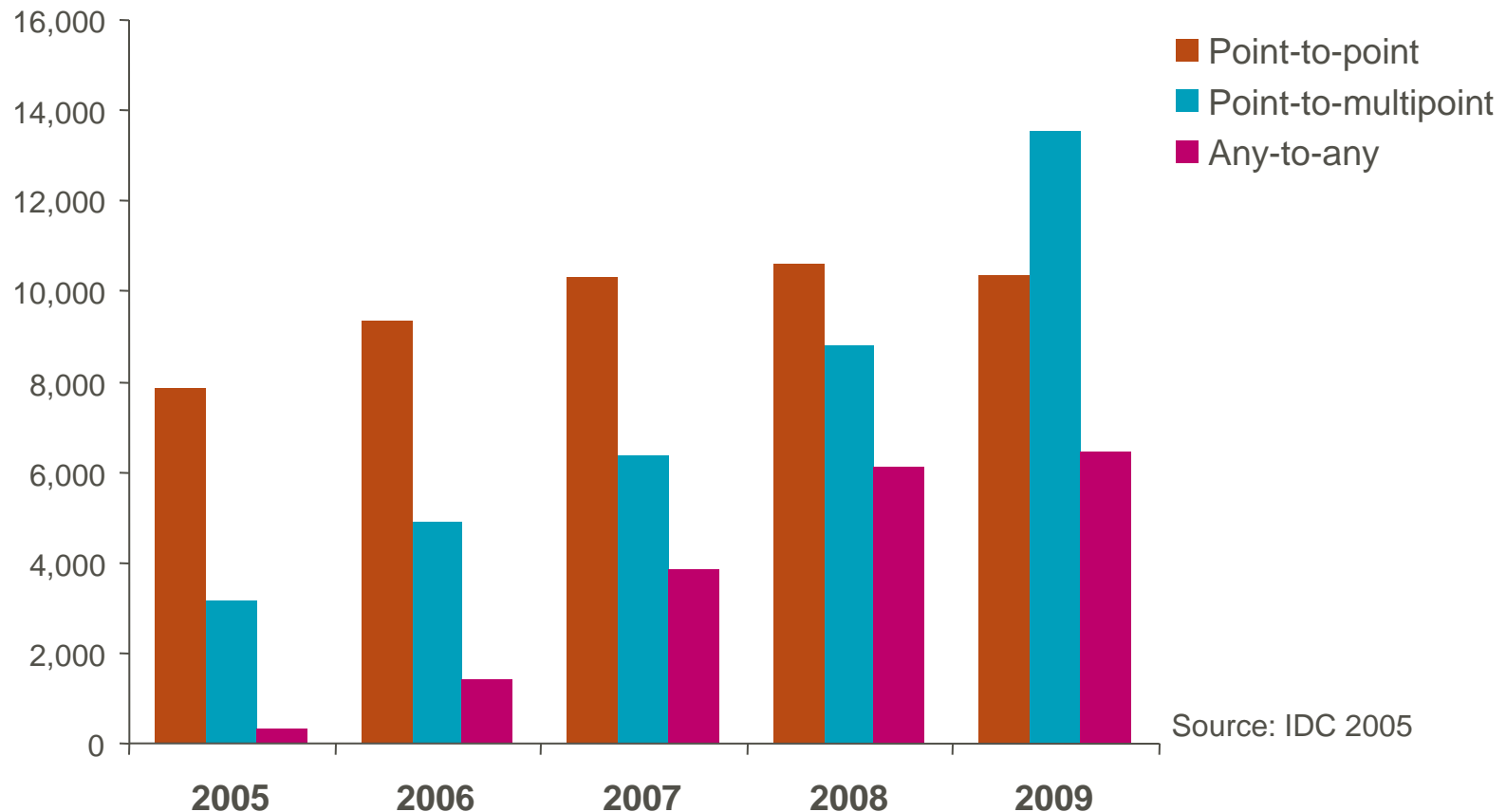
More flexible than leased lines-granular bandwidth

Bandwidth on-demand

Rapid deployment of new sites and distributed applications

Rapid moves and changes

Pay only for the bandwidth you need

Typically less expensive than ATM or Frame Relay

Ethernet equipment costs less

One technology across your IT infrastructure

Seamless interface

One supplier and a single end-to-end SLA

colt
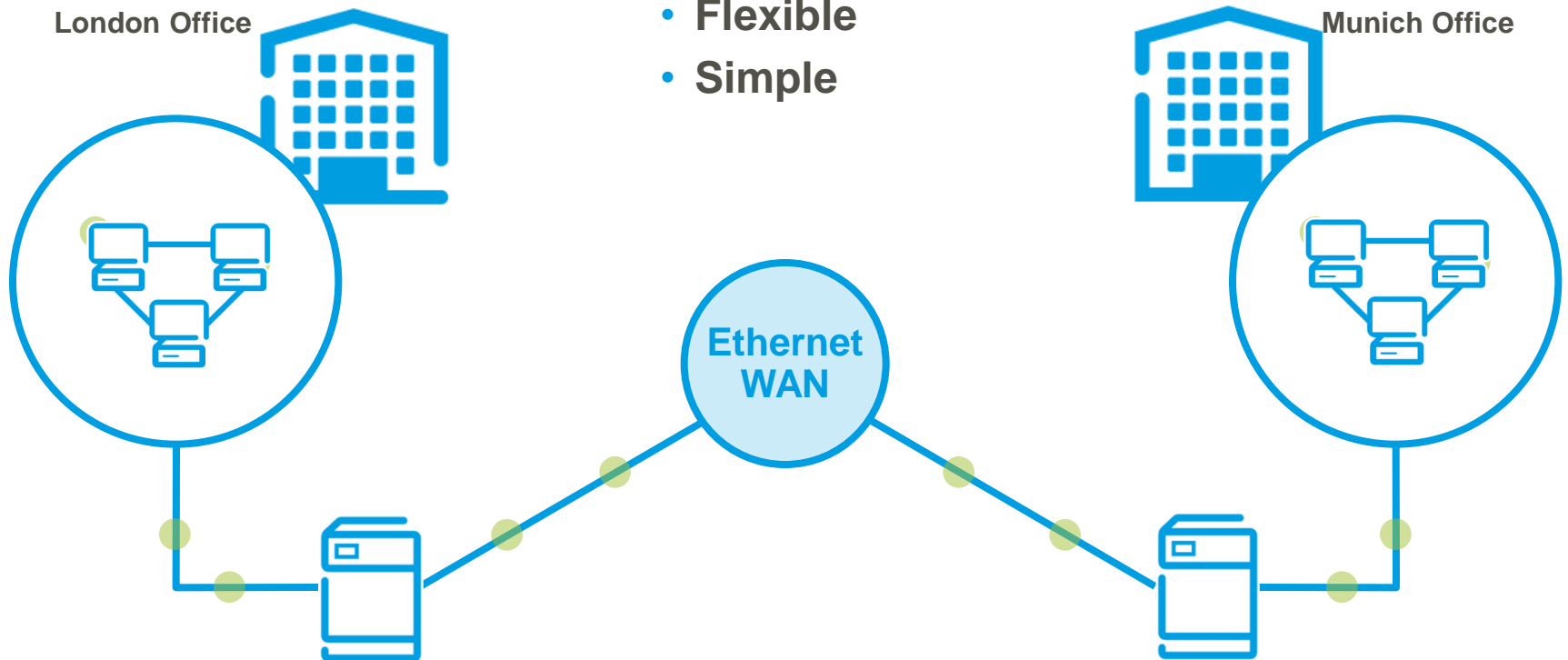smarter / faster / further

# The WAN bottleneck

- **High cost**
- **Inflexible**
- **Complex**
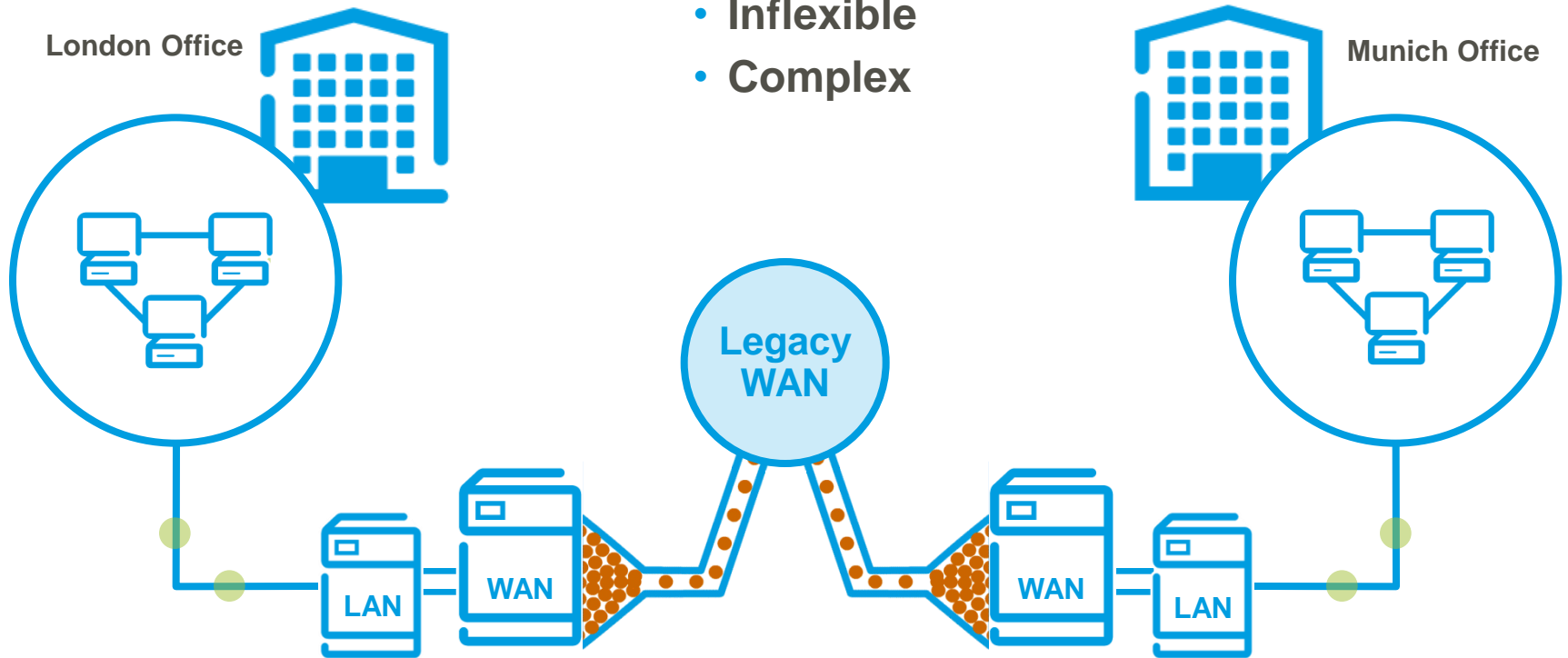
# Ethernet for the WAN

- **Lower cost**
- **Flexible**
- **Simple**

**London Office**

**Munich Office**

**Ethernet WAN**

colt
smarter / faster / further

# Ethernet compared to leased lines

| | **Ethernet** | **Leased Lines** |
|---|---|---|
| Bandwidth | 2Mbps-10Gbps | 64Kbps-622Mbps |
| Equipment upgrades | Typically 10Mbps, 100Mbps, 1Gbps and 10Gbps | Typically 2Mbps, 34Mbps, 45Mbps, 155Mbps, 622Mbps |
| Interface | Standard Ethernet interface | Costly TDM interface |
| Topology | Multiple topologies: point-to-point, hub-and-spoke, any-to-any | Point-to-point (multiple point-to-point used for other topologies) |
| Circuit price | Ethernet typically cheaper than leased lines at granular speeds | > |

colt
smarter / faster / further

# Ethernet compared to ATM and Frame Relay

| | Ethernet | ATM/FR |
|---|---|---|
| Bandwidth | 2Mbps-10Gbps | 16Kbps-622Mbps |
| Equipment upgrades | Typically 10Mbps, 100Mbps, 1Gbps and 10Gbps | Typically 2Mbps, 45Mbps and 155Mbps |
| Interface | Standard Ethernet interface | Costly ATM/FR interface |
| Topology | Multiple topologies: point-to-point, hub-and-spoke, any-to-any | Hub-and-spoke/partial mesh |
| Security | Logically separated by VLANs | Logically separated by PVCs |
| Class of Service | Some providers (inc. Colt) | With bandwidth guarantees |
| IT Skills | Make use of standard IT skills | Specialist knowledge required |
| Pricing | Low cost perMbps | Bursty bandwidth |

11

colt
smarter / faster / further

# Ethernet compared to IP VPN

| | Ethernet | IP VPN |
|---|---|---|
| Bandwidth | 2Mbps-10Gbps | 64Kbps-622Mbps |
| Equipment upgrades | Typically 10Mbps, 100Mbps, 1Gbps and 10Gbps | Often uses Ethernet as access technology |
| Topology | Multiple topologies: point-to-point, hub-and-spoke, any-to-any | Any-to-any, hub-and-spoke |
| Security | Logically separated by VLANs | Logically separated by label switch paths (LSPs) |
| Class of Service | Some providers (inc. Colt) | Class of Service |
| Management | Make use of in-house skills | Outsourced network management |
| Pricing | Low cost per Mbps | Save on management costs; higher price for feature-rich solution |
| Protocols | Transparent to Layer 3 protocols | IP only |

colt
smarter / faster / further

# Colt Ethernet Services

http://www.colt.net/ethernet

colt

smarter / faster / further

The information delivery
platform for European business

# The Colt data portfolio

Meeting the needs of the...

|  | Data centre | Major site | Office | Home worker | Mobile worker |
|---|---|---|---|---|---|

**Layer 3**
- Colt IP VPN Corporate
- Colt IP Access
- Colt IP Dial
- Colt Total

**Layer 2**
- Colt ATM/Frame Relay
- Colt Ethernet Services

**Layer 1**
- Colt Link
- Colt Wavelength
- Colt HSS
- Colt SANLink
- Colt Broadcast

colt
smarter / faster / further

# Colt Ethernet service features

| | |
|---|---|
| **Topology** | Point-to-point, hub-and-spoke, any-to-any |
| **Bandwidth** | Granular bandwidth: 2Mbps-10Gbps |
| **Access type** | Fibre, SDH, DSL, EFM |
| **Geographic reach** | Metro, National, International |
| **Interface** | 10/100/1000BASE-T, 1000BASE-SX/LX, 10GBASE-SR/LR/ER |
| **Managed services** | Managed CPE, Unmanaged CPE |
| **Class of Service** | Minimum of 2 |
| **Resilience** | Protected, Gold, Platinum (99.999% availability) |
| **Other** | Multi-port access, transparent services, Online Performance Reporting Link Loss Forwarding, Link Aggregation |

colt
smarter / faster / further

# Which Colt Ethernet service is right for you?

| Product | Colt LANLink Point to Point | Colt LANLink Hub and Spoke | Colt Ethernet Private Network |
|---|---|---|---|
| **Topology** | Point-to-point | Hub-and-spoke | Any-to-any |
| **Bandwidth** | 2Mbps-10Gbps | Hub: 100Mbps/1Gbps, 10Gbps Spoke: 2Mbps-1Gbps | 2Mbps–10Gbps |
| **Scenario** | Replacement for leased lines | Centralised organisations, replacement for ATM/Frame Relay | Decentralised And organisations with significant inter-site traffic |
| **Managed Service** | **Colt managed switches and routers** | | |
| **Scenario** | Proactive management; online performance; managed and unmanaged switches and routers can be combined with any Colt data service | | |

16

colt

smarter / faster / further

# Colt LANLink Point-to-point
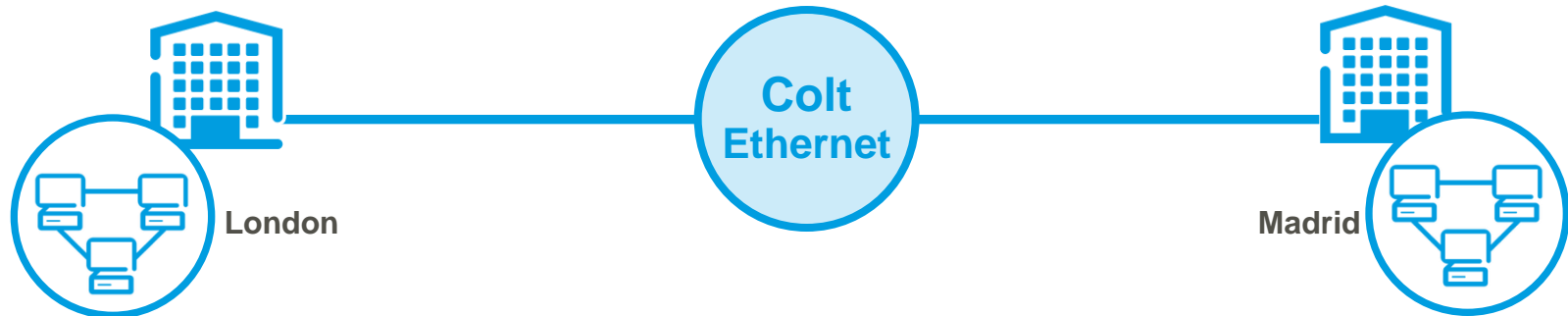


- Speed flexibility

- Metro, National, International

- Alternative to leased lines

# Colt LANLink Hub and Spoke



Hub connection
100Mbps, 1Gbps, 10Gbps

Hub
London HQ

Spoke: Zurich

Spoke: Madrid

Spoke: Frankfurt

Spoke connection
2 to 1Gbps

- VLAN-based

- Alternative to ATM/Frame

colt
smarter / faster / further

# Colt Ethernet Private Network (E-PN)



**Zurich**

**2 to 10Gbps**

**London**

**Madrid**

**Munich**
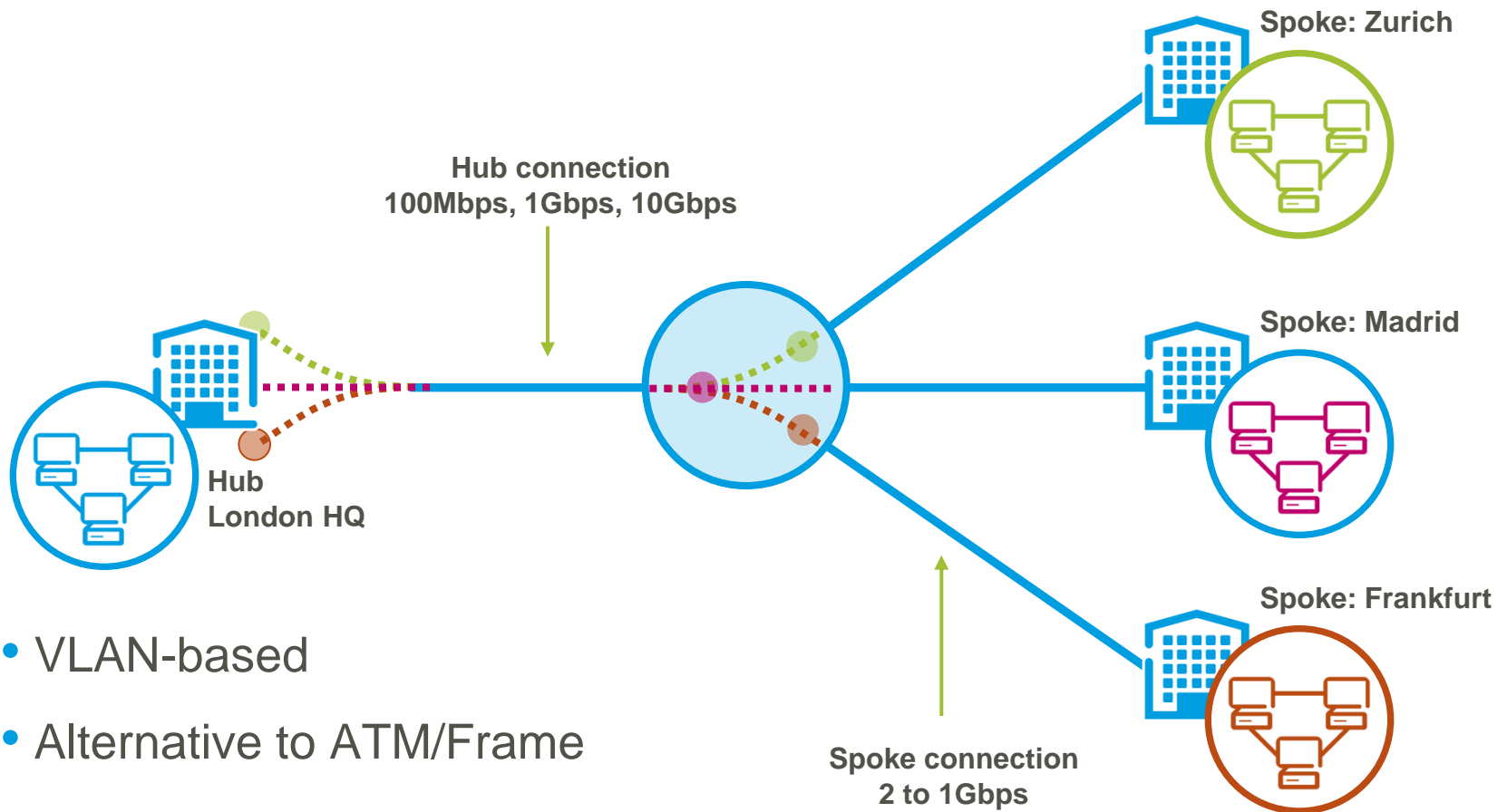
- Switched network
- Any-to-any or one-to-any
- Metro, National and International
- Wide choice of connection speeds
- Class of Service
- Alternative to IP VPN

colt
smarter / faster / further

# Colt CPE Solutions

**Colt LANLink
Point to Point**

**Colt LANLink
Hub and Spoke**

**Colt E-PN**

**Colt CPE Solutions**

- Proactive management

- Online performance reporting

- Managed and unmanaged options

- Available with any Colt data service

colt
smarter / faster / further

# Access mechanisms



Ethernet over Fibre

Off-Net (Ethernet or Leased Lines)

Colt Network

Other Operator

Ethernet over Colt SDSL
and Ethernet in the First Mile (EFM)

Off-Net Ethernet (wDSL)

Ethernet over protected fibre ring

colt
smarter / faster / further
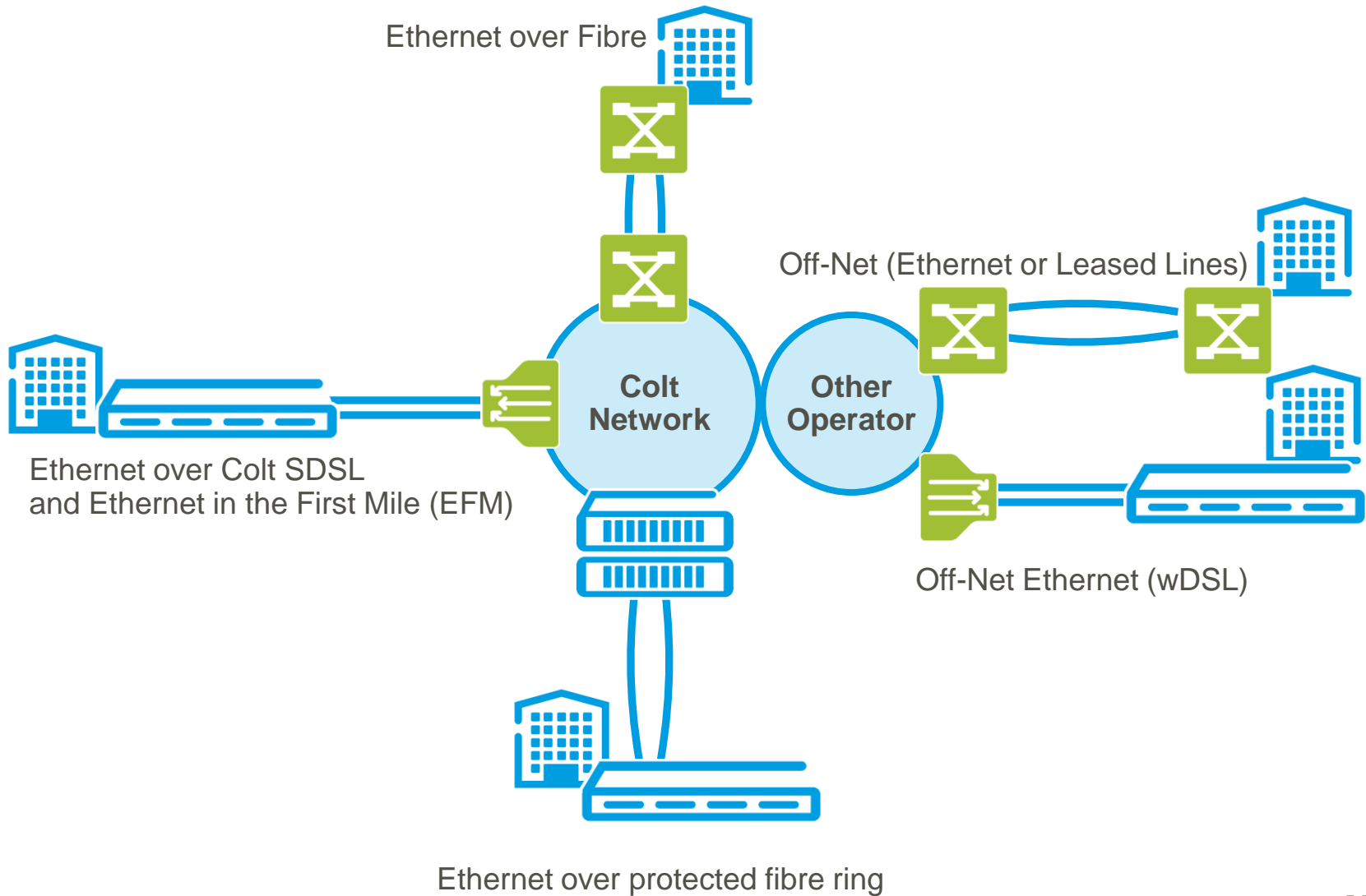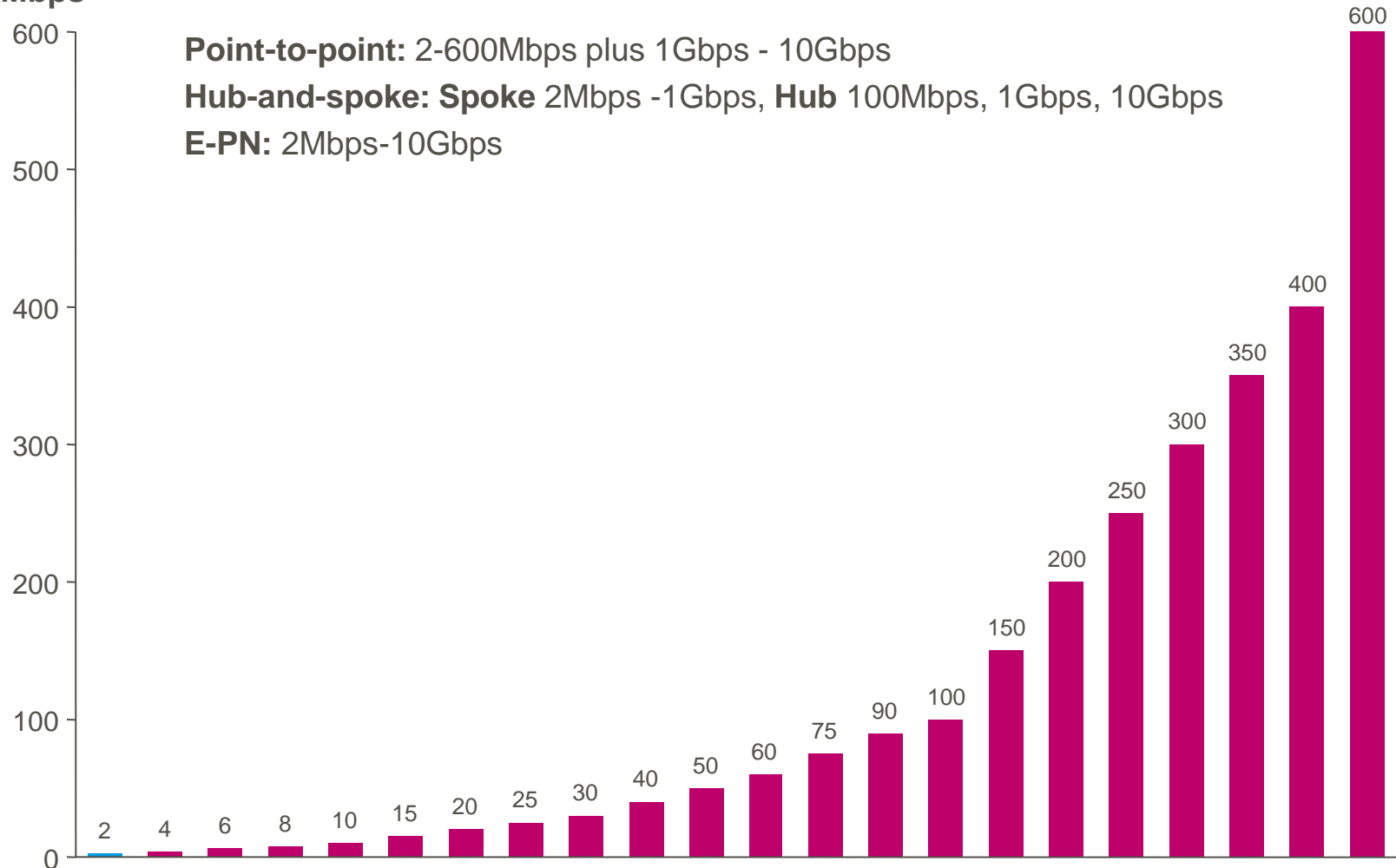
# Class of service (CoS)

- Two or three CoS
- Ensures optimum application performance
- Maximise bandwidth usage

**Colt Ethernet**

P0
P1
P0
P1
P0
P0

| P0 | P0 | P0 | P0 | P1 | P1 |
|----|----|----|----|----|----|

colt
smarter / faster / further
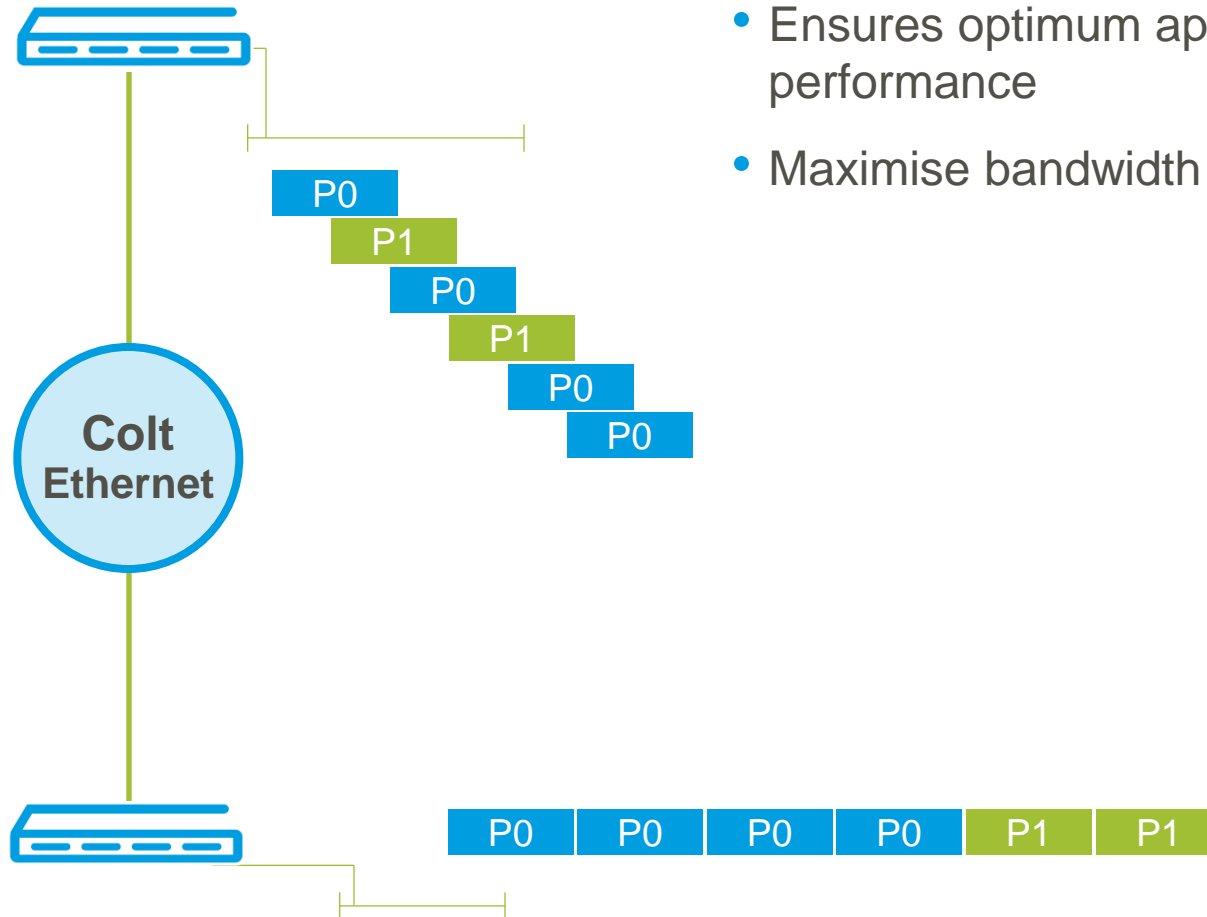
# Multi-port access
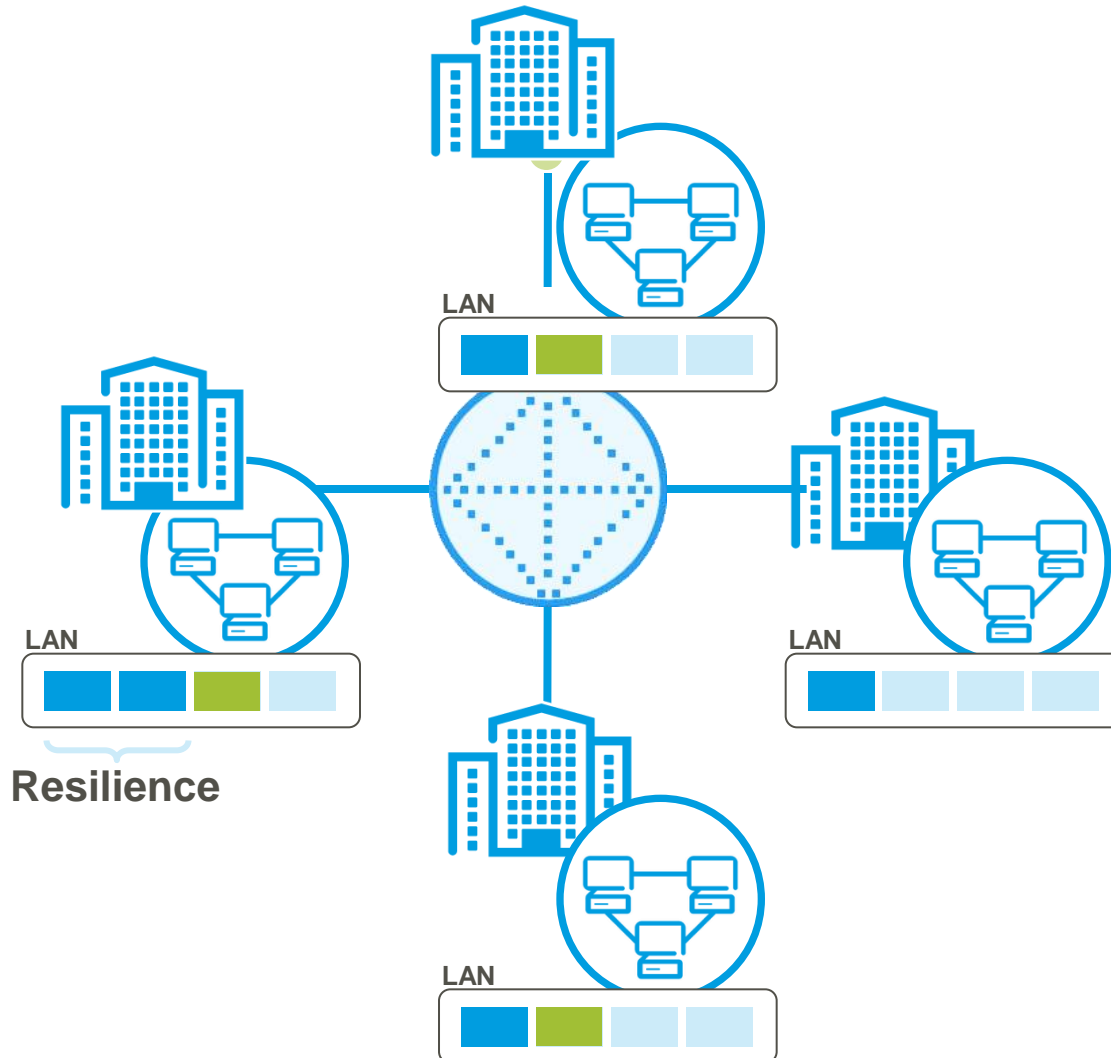


- Resilience
- Topology flexibility

2-1Gbps per site. Speeds greater than 100Mbps have a maximum of 2 ports

# Resilience

**Three Resilience Options:**

- Protected Service-99.95% availability
  - Using Ethernet over MSP or Ethernet over SDH, benefits from inherent platform resilience with < 50ms automatic rerouting

- Gold Resilience-99.99% availability
  - Dual CPE and dual presentation

- Platinum Resilience-99.999% availability
  - Dual CPE on separate rings, dual presentation

colt

smarter / faster / further

# Other Features

- Link Loss Forwarding

  - signals link failure to customer access port

- Link Aggregation (LAG)

  - provides port resilience at access CPE

- Online Performance Reporting

  - online portal to view service performance

  - reports on throughput, latency, jitter, frame loss

colt
smarter / faster / further

# Ethernet value propositions

| Cost | Save up to 30% (TCO) when compared to other network solutions | > |
|---|---|---|
| Agility | Become able to respond rapidly to change such as mergers, relocation or server consolidation | > |
| Performance | Enable your business applications to run more efficiently and become better at meeting customer needs | > |
| Security | Keep your data secure and meet compliance regulations | > |
| Resilience | Enhance the resilience of your network | > |

colt
smarter / faster / further

# The Ethernet roadmap

100Gbps bandwidth

Bandwidth or VLAN on demand

Customer portal

Next generation DSL

Roll out of Ethernet NNI

colt
smarter / faster / further

# Colt future focus

Feature Enhancements (to hub-and-spoke and Off-Net)

Multi-service platform (MSP)

10Gbps services across Europe

Online ordering

Extended reach (up to 20Mbps) using EFM

Next generation DSL

Global reach capability (USA, Eastern Europe, Asia)

Seamless interworking between all access types

Standardised Ethernet NNIs (network to network interfaces)

colt
smarter / faster / further

# Why choose Colt?

[http://www.colt.net/ethernet](http://www.colt.net/ethernet)

colt
smarter / faster / further

The information delivery
platform for European business

# Why choose Colt

| | |
|---|---|
| **Coverage** | ...the most extended Ethernet coverage in Europe |
| **Single Provider** | ...a standard service, SLA and price across Europe |
| **Experience** | ...strong experience with Top 100 Fortune banks |
| **Topology** | ...point-to-point, hub-and-spoke, and any-to-any |
| **Management** | ...manage mission-critical applications through CoS |
| **Simplify** | ...interworking with legacy services |

colt

smarter / faster / further

# COLT's Ethernet value proposition

**Virtual campus**

**Server consolidation**

**Off-site backup**

**Colt**
**Ethernet**

**Business continuity**

**Utility computing**

colt
smarter / faster / further
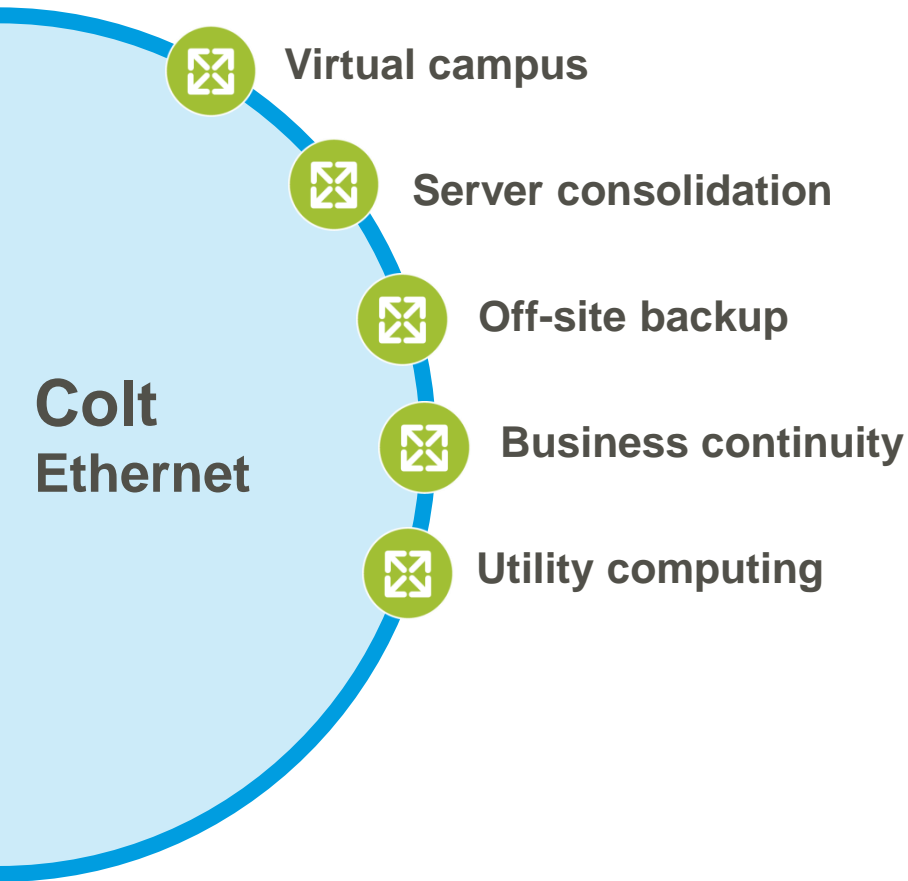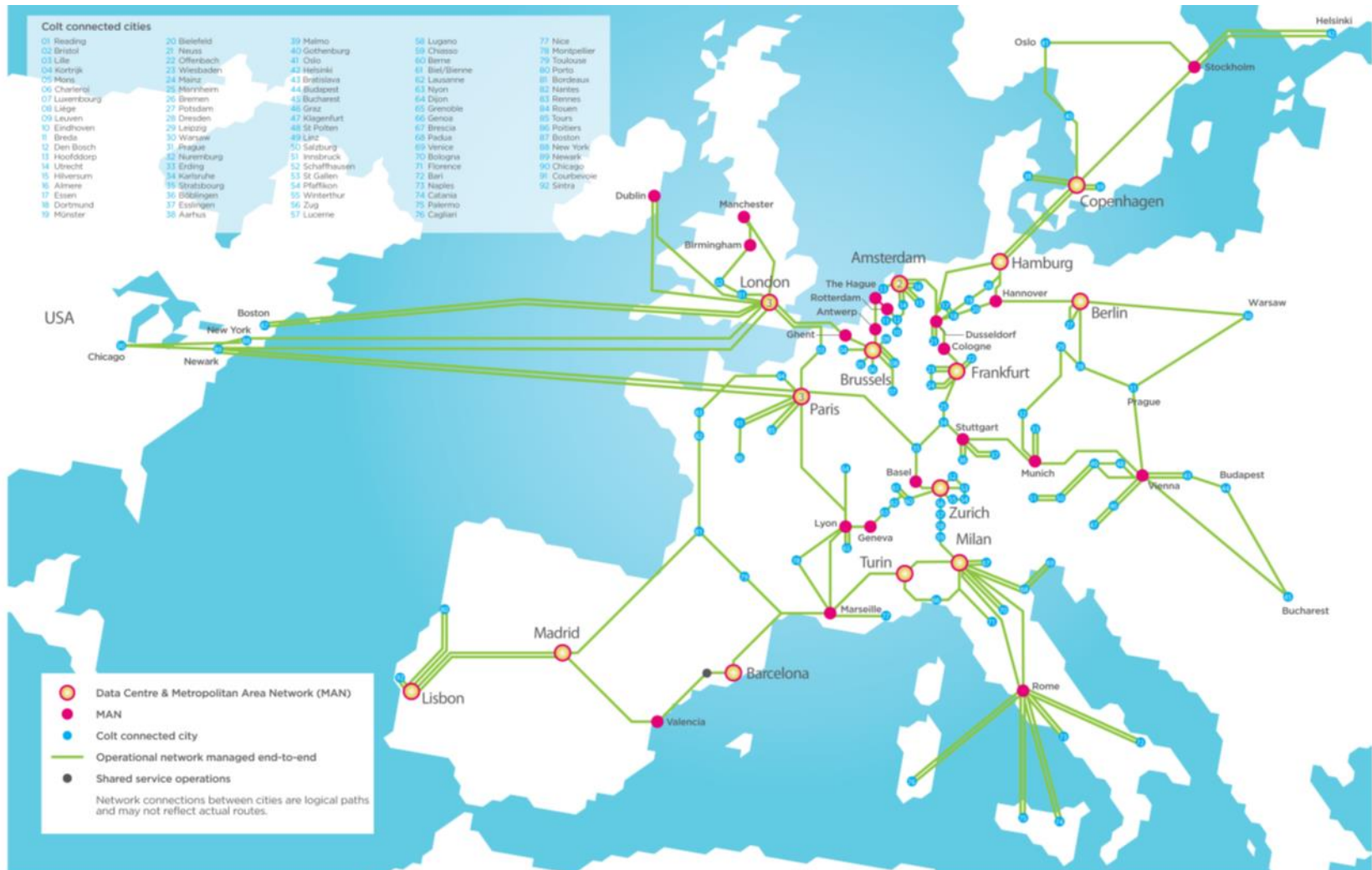
# Colt network reach

# Colt network reach

- 50,000 customers across all industry sectors

- Metropolitan area networks (MANs) in 39 cities

- Linked by our own European network

- Over 43,000km of fibre across 22 countries

- 27,000Km Transatlantic and US network

- Over 120 accredited partners deliver further reach

colt
smarter / faster / further

# Leading the way

Colt launches Ethernet over SDH and extends portfolio to include international connections

Colt launches Ethernet point-to-point service in the Metro

Colt introduces Ethernet over copper

MEF9

MEF14

1996     2002     2003     2004     2005     2006     2007     2008

Colt introduces Ethernet over DSL

Colt joined the MEF

Colt launches hub-and-spoke service
The first European any-to-any Ethernet VPN

35

**colt**
smarter / faster / further

# Award-winning services



Service Provider of the Year
Best Business Ethernet Service

2001-2004 WCA for Best Customer Care

Service Provider of the Year
Best Service Portfolio

Service Provider of the Year
Best Business Ethernet Service

2005 WCA for Best Regional Operator

2006 WCA for Best Brand

Strongest Ethernet product portfolio

Best Regional Operator

Service Provider of the Year – Best Product Portfolio

International Optical Service Innovation

Regional Service Provider of the Year

Best Marketing

Best Carrier Ethernet Business Application x 2

2004  2005  2006  2007  2008  2009  2010  2011  2012

colt
smarter / faster / further

# Fast Track

**Fast Track – Expedite service delivery for On-Net sites**

- Available for all On-Net sites for all Colt services in all Colt countries

- Available for new opportunities/orders and existing orders

- Customers can request an installation date (prior to the standard lead time). If this cannot be met, Colt proposes the fastest possible installation date based on technical feasibility. The customer can accept or reject the proposed date

- Multi-site services are considered on a site-by-site basis

colt
smarter / faster / further

# Summary

[http://www.colt.net/ethernet](http://www.colt.net/ethernet)

colt

smarter / faster / further

The information delivery
platform for European business

# Benefits to your business

- Ethernet is a simple, flexible and cost-effective solution for wide area networking

- High speeds ensure your business applications work efficiently

- Broad range of value added features with up to 99.999% availability

- Available across Europe and beyond by a variety of access mechanisms including network partners

- A complete portfolio of Colt award winning Ethernet services

- Choose a provider committed to Ethernet for more than a decade

colt
smarter / faster / further

# Case studies

http://www.colt.net/ethernet

colt

smarter / faster / further

The information delivery
platform for European business

# Danske bank

*"The network infrastructure is one of the bastions of the bank's IT platform. This element is invisible to the employees, but it has to be there at all times, delivering the right capacity."*

Tom Søderholm
Network Manager, Danske Bank

**Danske Bank**

| | |
|---|---|
| **Customer requirement** | High speed resilient connection |
| **Number of sites** | Two-located in Denmark |
| **Customer applications** | Financials, video, VoIP |
| **Colt solution** | Colt LanLink 1Gbps Point-to-point, fully resilient |
| **Why Colt?** | SLAs, resiliency and cost-effective solution |

colt
smarter / faster / further

# principal-it

*"The solution provides fast, reliable access between sites, and enables us to add new sites simply and quickly. Colt have shown they understand what we are trying to achieve as a business"*

Pete Grey
Director, principal-it

| Customer requirement | High-speed and scalable network |
|---|---|
| Number of sites | 20 – located in the UK |
| Customer applications | IT applications |
| Colt solution | Colt LanLink Hub and Spoke |
| Why Colt? | Network coverage, technical knowledge, cost effectiveness |

colt
smarter / faster / further
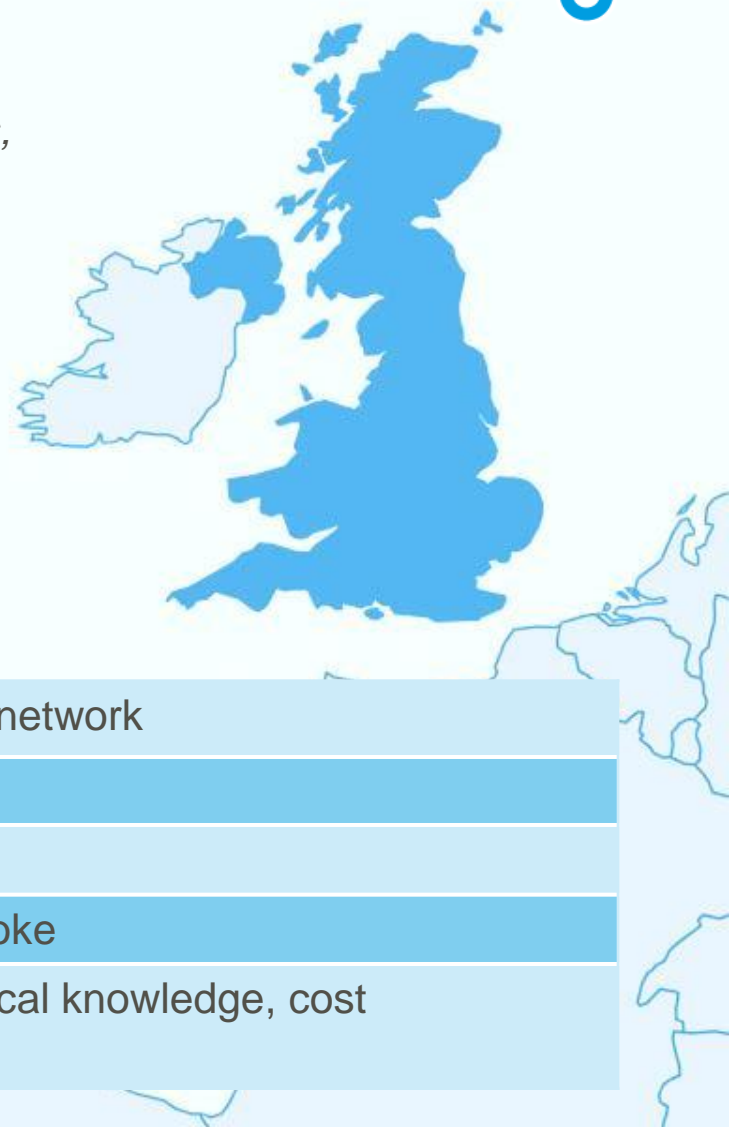
# Globelynx Ltd.

*"We were impressed by the results of the tests that we carried out recently, from one of our customer sites, using Colt's MSP technology. This will certainly form the basis of our imminent plans to roll out the broadcast camera network beyond London to customers across Europe."*

David FitzGerald,
Managing Director, Globelynx Ltd.

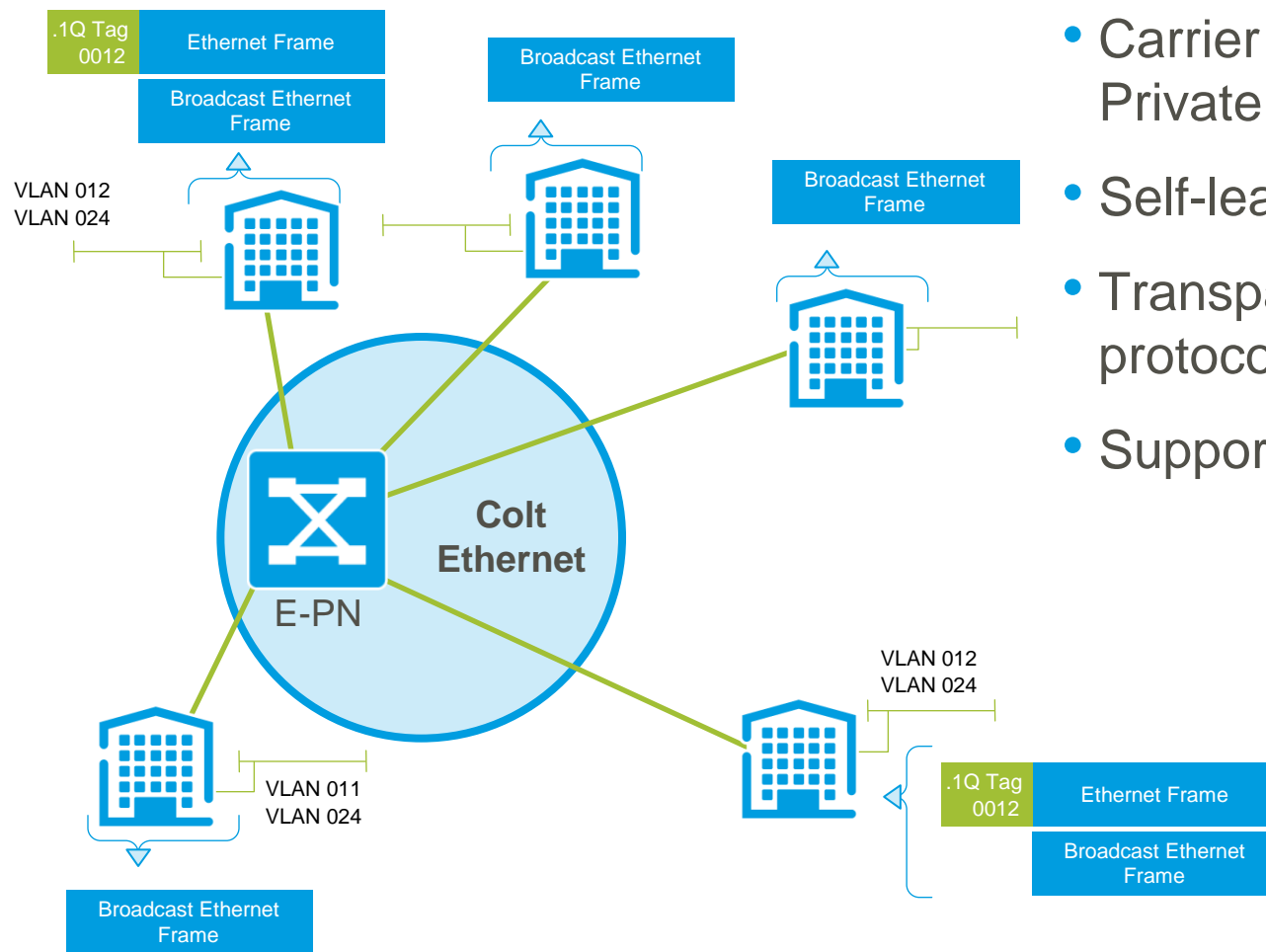| | |
|---|---|
| **Customer requirement** | Low latency resilient connection |
| **Number of sites** | Throughout Europe, trial in London |
| **Customer applications** | Live video feed |
| **Colt solution** | Colt LANLink, 10Mbps point-to-point, fully resilient |
| **Why Colt?** | High performance solution with low latency and jitter based on Colt MSP |

colt
smarter / faster / further

# Technical overview

[http://www.colt.net/ethernet](http://www.colt.net/ethernet)

colt

smarter / faster / further

The information delivery
platform for European business

# Ethernet Private Network



.1Q Tag 0012 | Ethernet Frame

Broadcast Ethernet Frame

VLAN 012
VLAN 024

Broadcast Ethernet Frame

Broadcast Ethernet Frame

**Colt Ethernet**

E-PN

VLAN 012
VLAN 024

VLAN 011
VLAN 024

Broadcast Ethernet Frame

.1Q Tag 0012 | Ethernet Frame

Broadcast Ethernet Frame

- Carrier Class Ethernet Private Network
- Self-learning technology
- Transparent to LAN protocols
- Supports CoS

**E-PN switches frames based upon destination MAC address.**

colt
smarter / faster / further

# Hub and Spoke by comparison
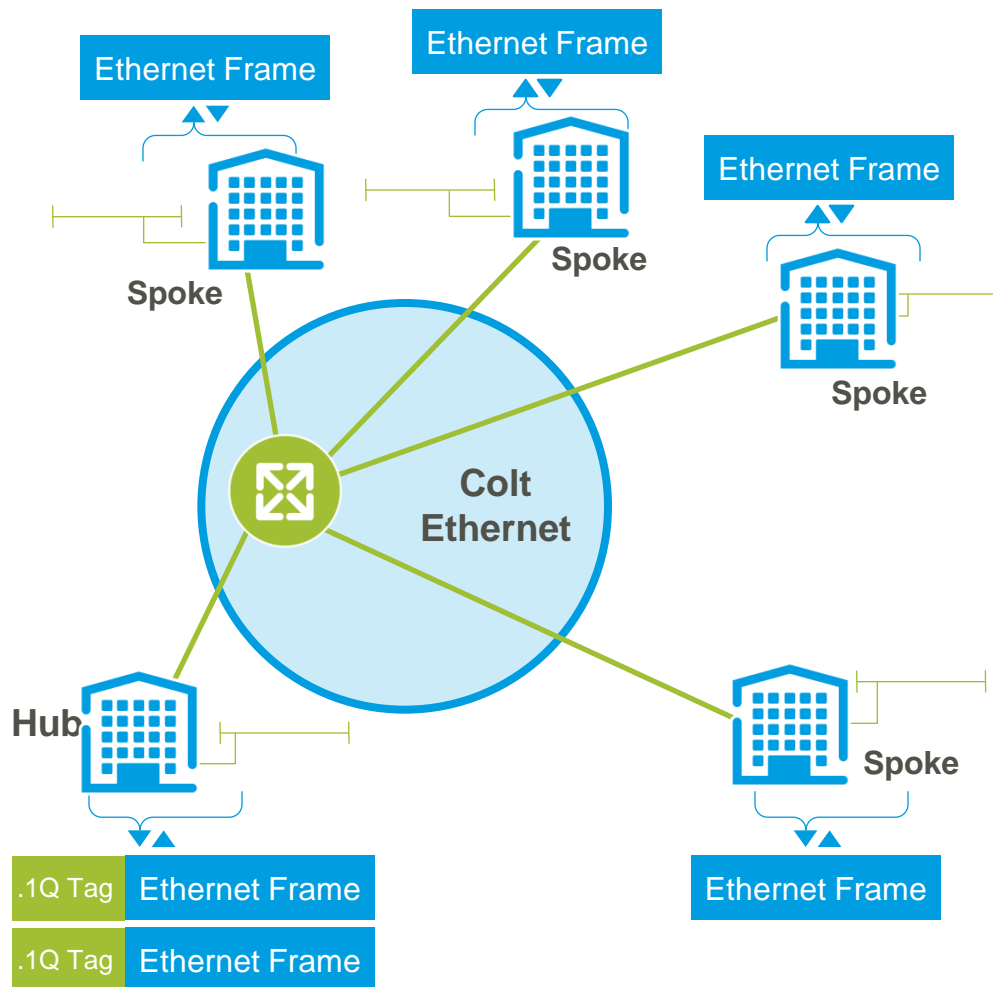


- Each spoke is identified at the hub site by a Colt-configured VLAN ID

- Only tagged accepted at hub

- Only untagged accepted at spoke

colt
smarter / faster / further

# Colt offers the full range of MEF defined services

**Colt Service**

| Colt LANLink Point-to-Point | Colt LANLink Hub and Spoke | Colt E-PN |
|---|---|---|

**MEF definition**

| Ethernet Private Line (EPL) | Ethernet Virtual Private Line (EVPL) | Transparent LAN Service |
|---|---|---|
| Point to point Ethernet Virtual Connection (EVC) | Multiple point to point EVCs, single multiplexed Ethernet UNI | Multipoint to multipoint EVC |

E-Line

E-LAN

colt

smarter / faster / further

# Ethernet over SDH

http://www.colt.net/ethernet

colt

smarter / faster / further

The information delivery
platform for European business

# Generic EoSDH

**Optical Fibre**

**STM-n Line Interface (n=1,4,16,64,256)**

**SDH HO/LO VC Cross Connection**

**TransLAN™
Circuit Pack**

**WAN ports**

ITU-T G.707/783 Virtual Concatenation
ITU-T G.7042 LCAS

ITU-T G.7041 GFP: Ethernet/SDH
Encapsulation, framing, buffering, mapping

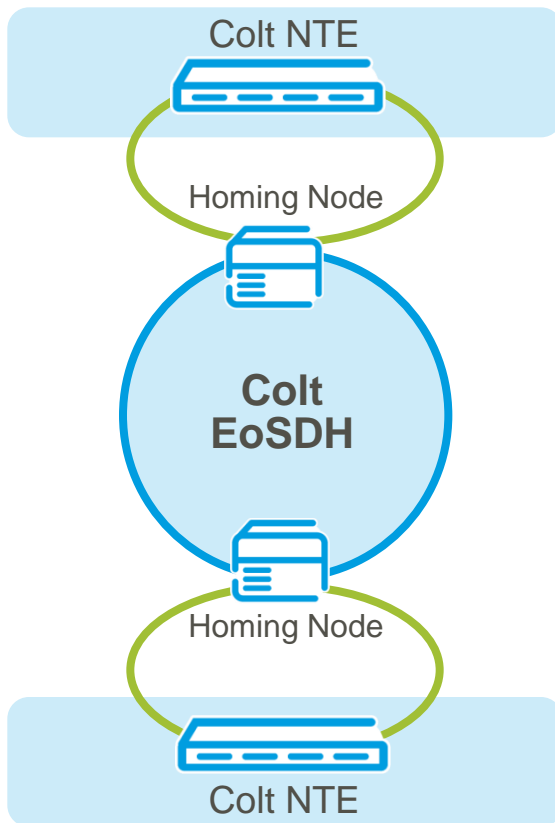Layer 2 Switch
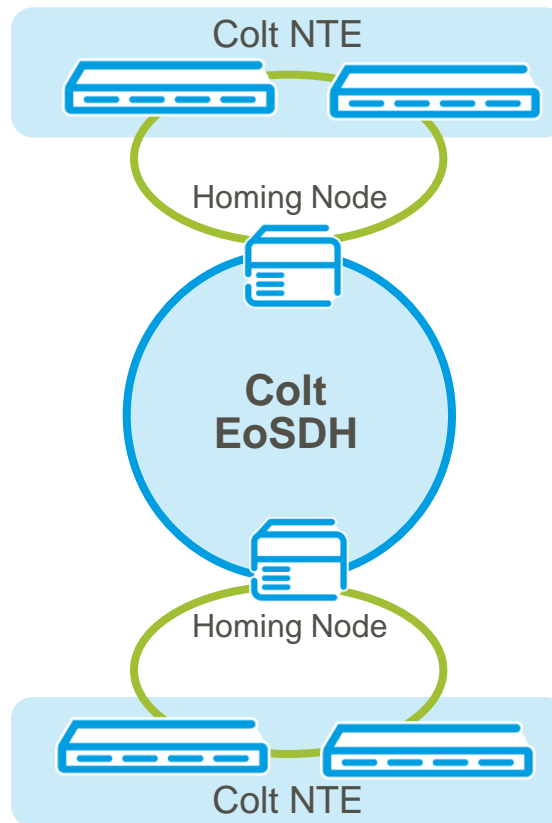
IEEE 802.3 PHY
Auto-negotiation-Pause/Flow control

10/100Base-T or 1000Base-T (X/SX/LX)

colt
smarter / faster / further

# Resilience



**Protected Service 99.95%**

Colt NTE
Homing Node
Colt EoSDH
Homing Node
Colt NTE

**Gold Resilience 99.99%**

Colt NTE
Homing Node
Colt EoSDH
Homing Node
Colt NTE

**Platinum Resilience 99.999%**

Colt NTE
Homing Node
Homing Node
Colt EoSDH
Homing Node
Homing Node
Colt NTE

colt
smarter / faster / further
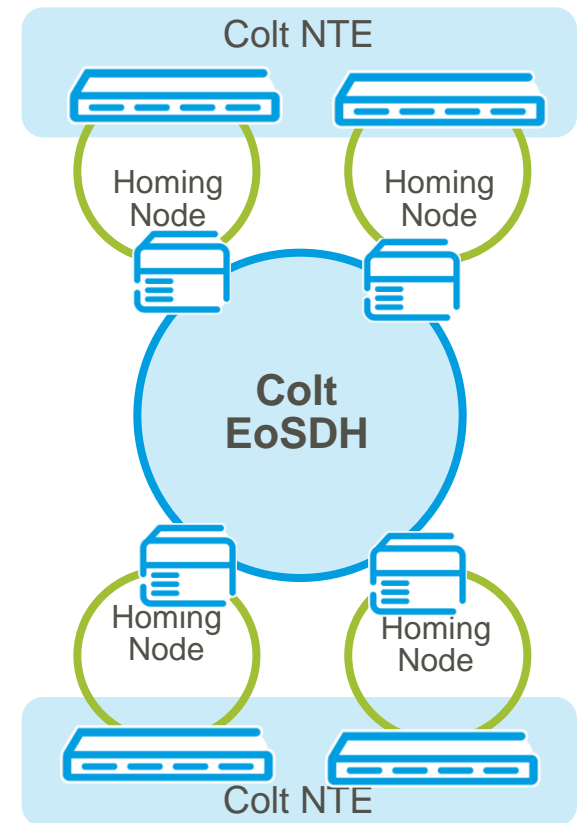
# Resilience options: Protected
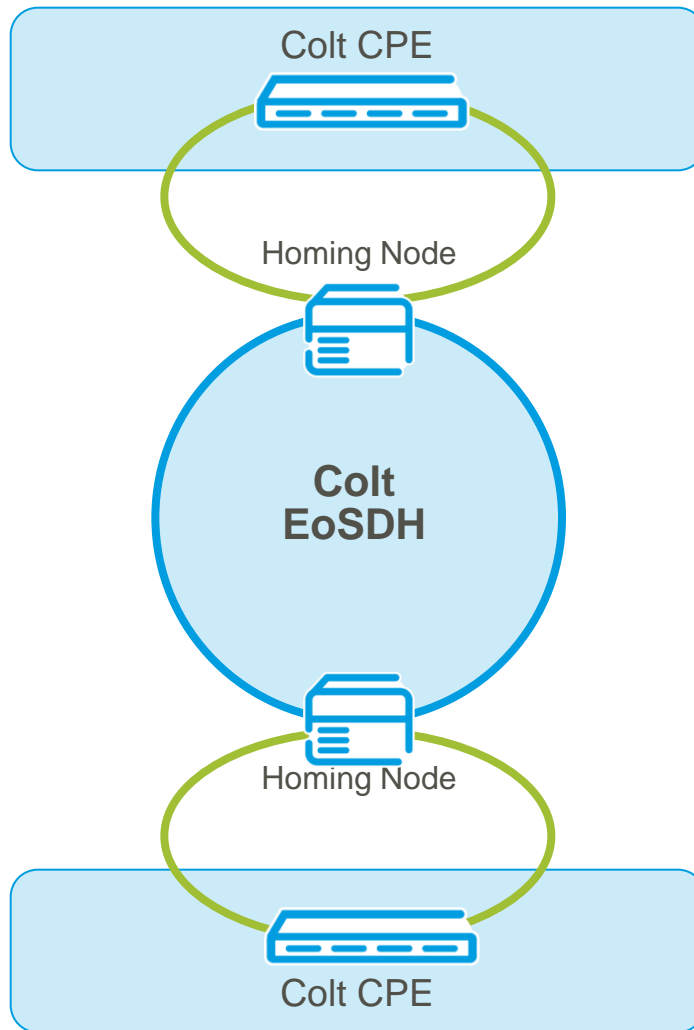


- Single CPE
- Single homing node

# Resilience options: Gold



Colt CPE

Homing Node

**Colt EoSDH**

Homing Node

Colt CPE
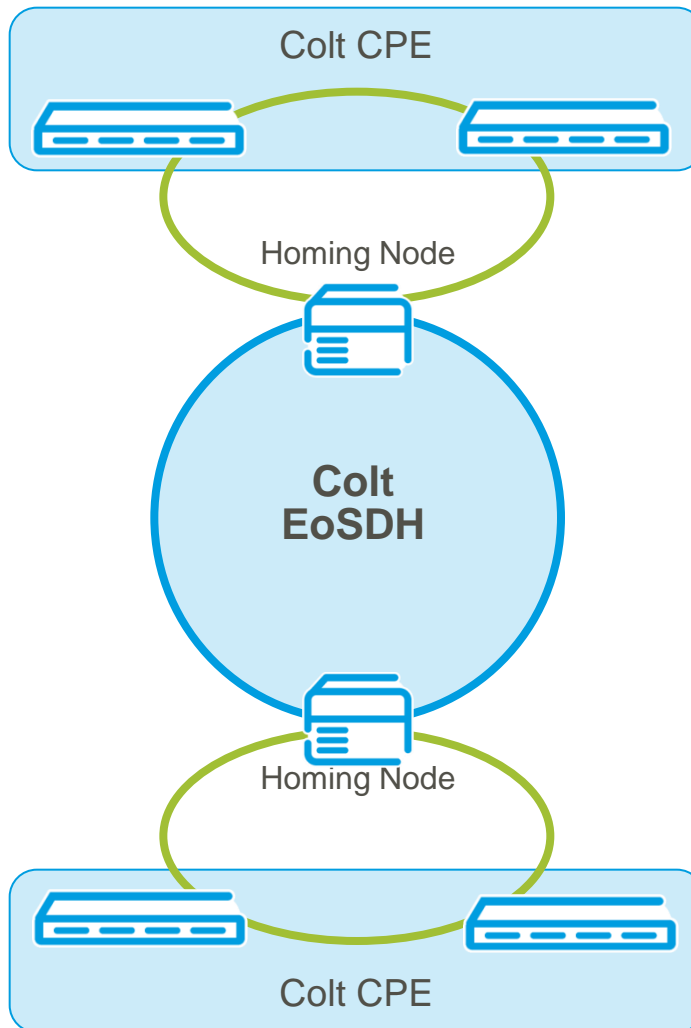
- 99.99% Availability

- Dual CPE

- Dual presentation

- Dual entry (if available)

- Single homing node

colt
smarter / faster / further

# Resilience options: Platinum
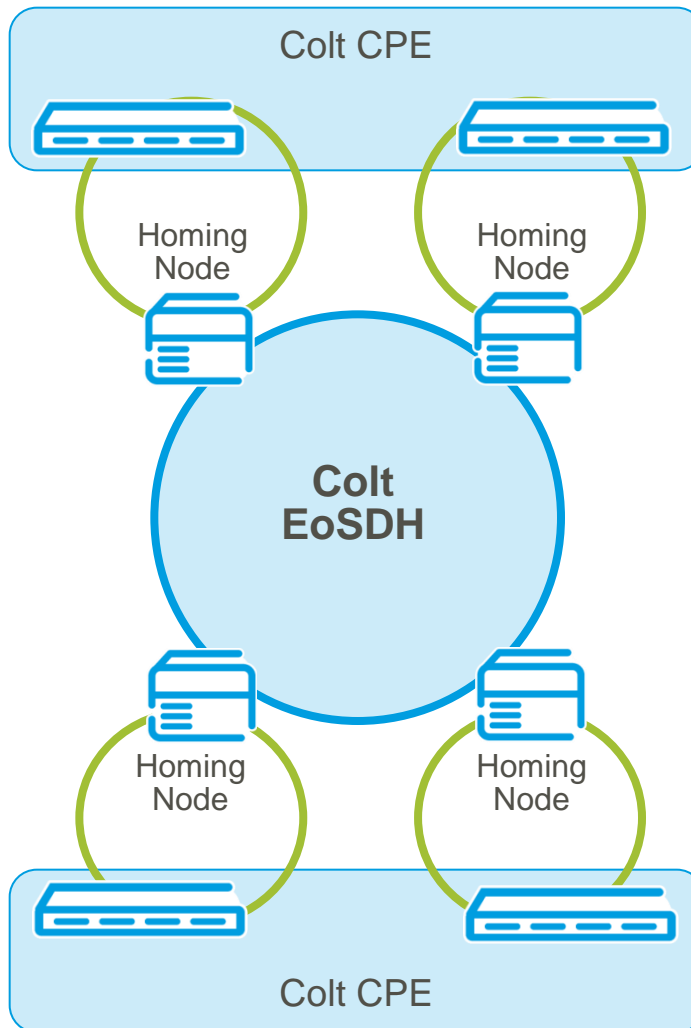


- 99.999% Availability
- Dual CPE
- Dual presentation
- Dual entry (if available)
- Dual homing node
- Dual ring

# Ethernet over MSP

http://www.colt.net/ethernet

colt

smarter / faster / further

**The information delivery platform for European business**

# Immediate benefits for Colt customers?

| Feature | Benefit |
|---------|---------|
| Ethernet delivery, 2Mbps-1Gbps | → Simple and easy to upgrade |
| Single box delivers multiple services | → Less space, less power |
| Dual homing as standard | → Enhanced resilience |
| Lower latency | → Improved application performance |

colt
smarter / faster / further

# The Colt Multi Service Platform

**Customer site**

- Single access box
- Up to 16 ports

- Ethernet transport
- 2Mbps to 1Gbps

**Colt Services and Solutions**

**Ethernet networking**

**IP VPN**

**Internet Access**

**VoIP Services**

**Managed Server**

**Managed Messaging**

**Managed Storage and Backup**

colt
smarter / faster / further
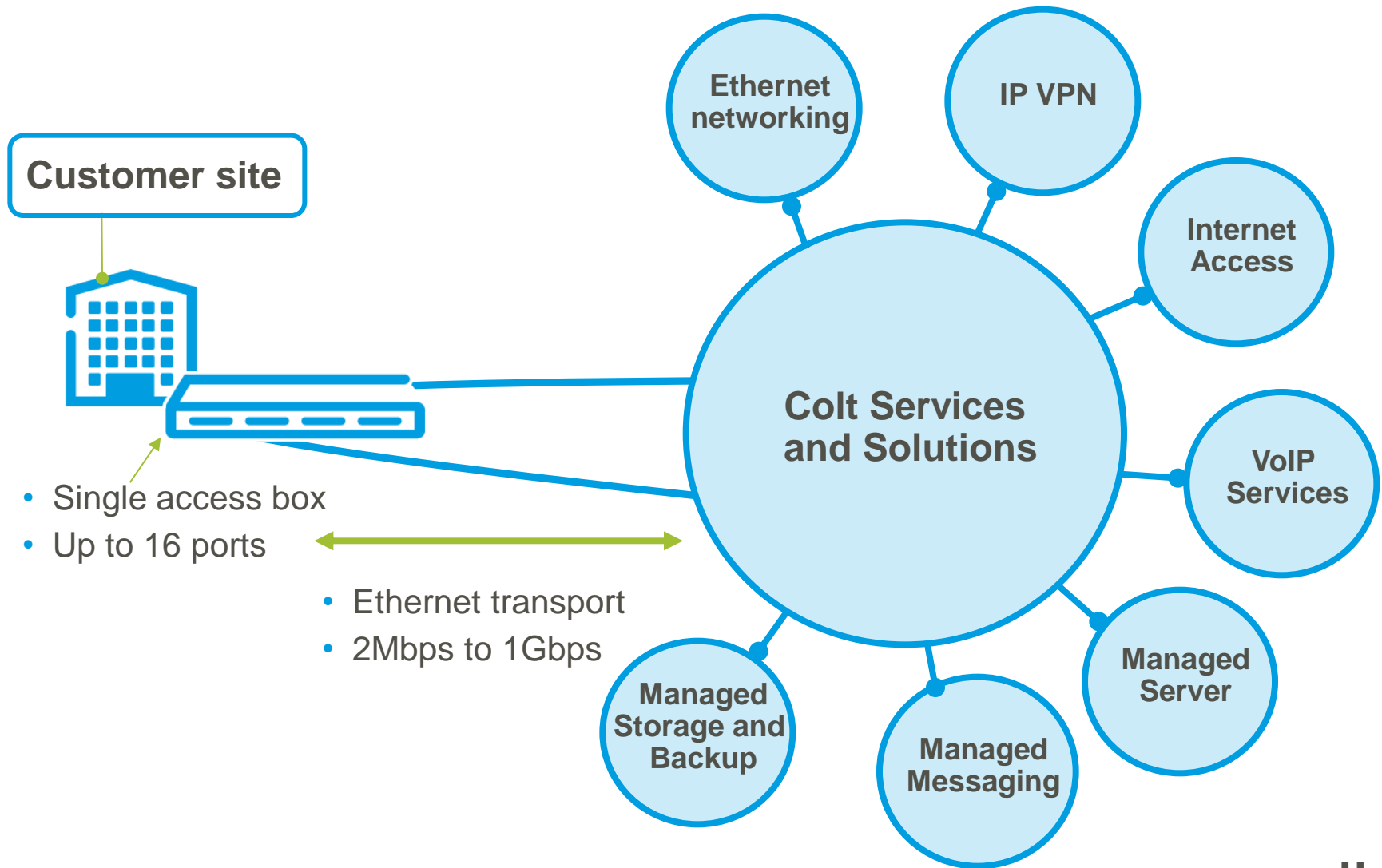
# How it works – Dedicated Network Layers



Customer Sites

Colt Data Centres

Colt IP Network

Public Internet

VoIP Network

Colt MSP

- Ethernet transport network
- Predefined paths
- Fixed Protection
- Low latency

- Separate IP core network
- Router based

colt
smarter / faster / further
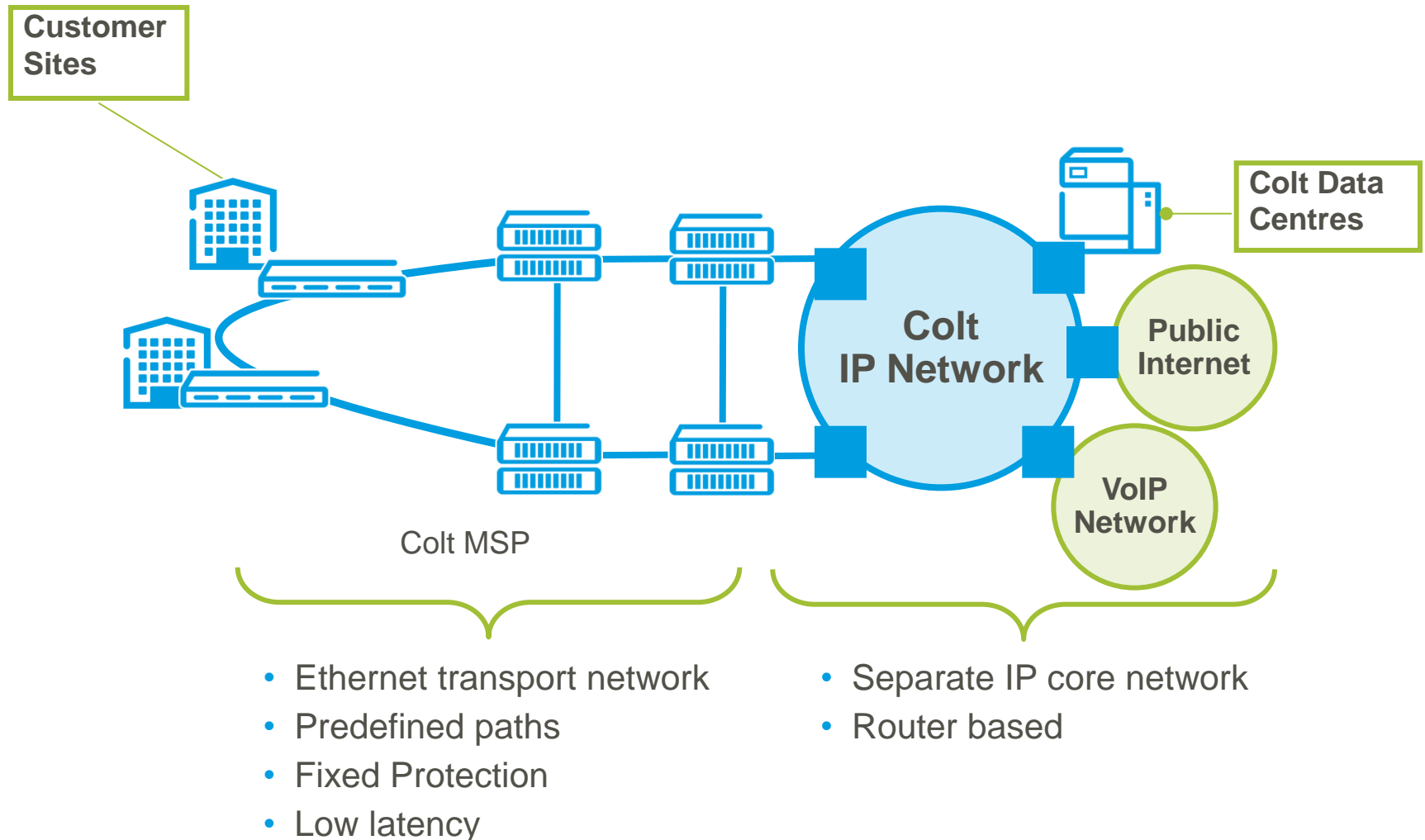
# How it works – Ethernet service

**Customer Sites**

*Ethernet service routed within Layer 2 network*

**Colt Data Centres**

**Colt IP Network**

**Public Internet**

**VoIP Network**

- Ethernet transport network
- Predefined paths
- Fixed Protection
- Low latency

*National/International protected services via 10Gbps Long Distance Network*

**colt**
smarter / faster / further

# How it works – IP Service

Customer Sites

*Layer 3 service routed via Colt IP network*

Colt Data Centres

Colt IP Network

Public Internet

VoIP Network

- Ethernet transport network
- Predefined paths
- Fixed Protection
- Low latency

- Separate IP core network
- Router based

colt
smarter / faster / further

# Resilience options – Ethernet MSP

**Protected Service**
**99.95%**
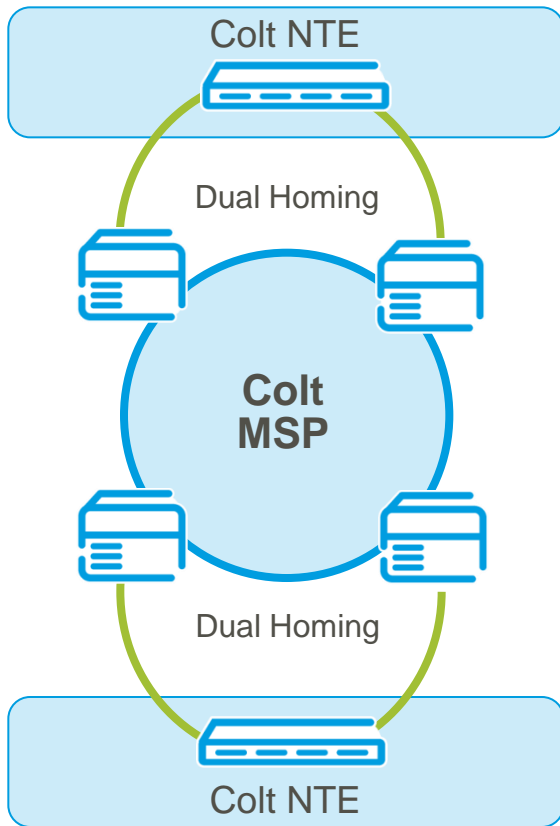
**Gold Resilience**
**99.99%**

**Platinum Resilience**
**99.999%**

Colt NTE

Dual Homing

**Colt
MSP**

Dual Homing

Colt NTE

Colt NTE

**Colt
MSP**

Colt NTE

Colt NTE

**Colt
MSP**

Colt NTE

colt
smarter / faster / further

# MSP Security



Separate transmission paths for each customer

Customer A

Customer B

Customer C

Customer A

Customer B

Customer C
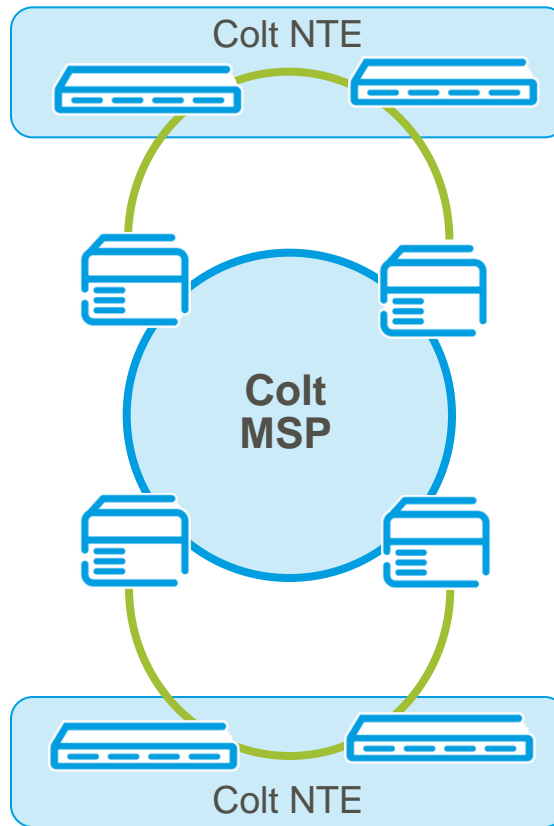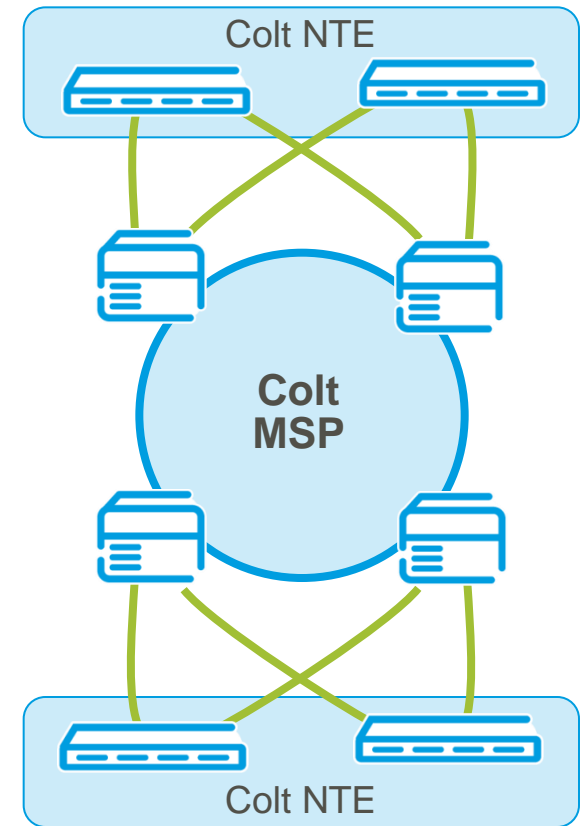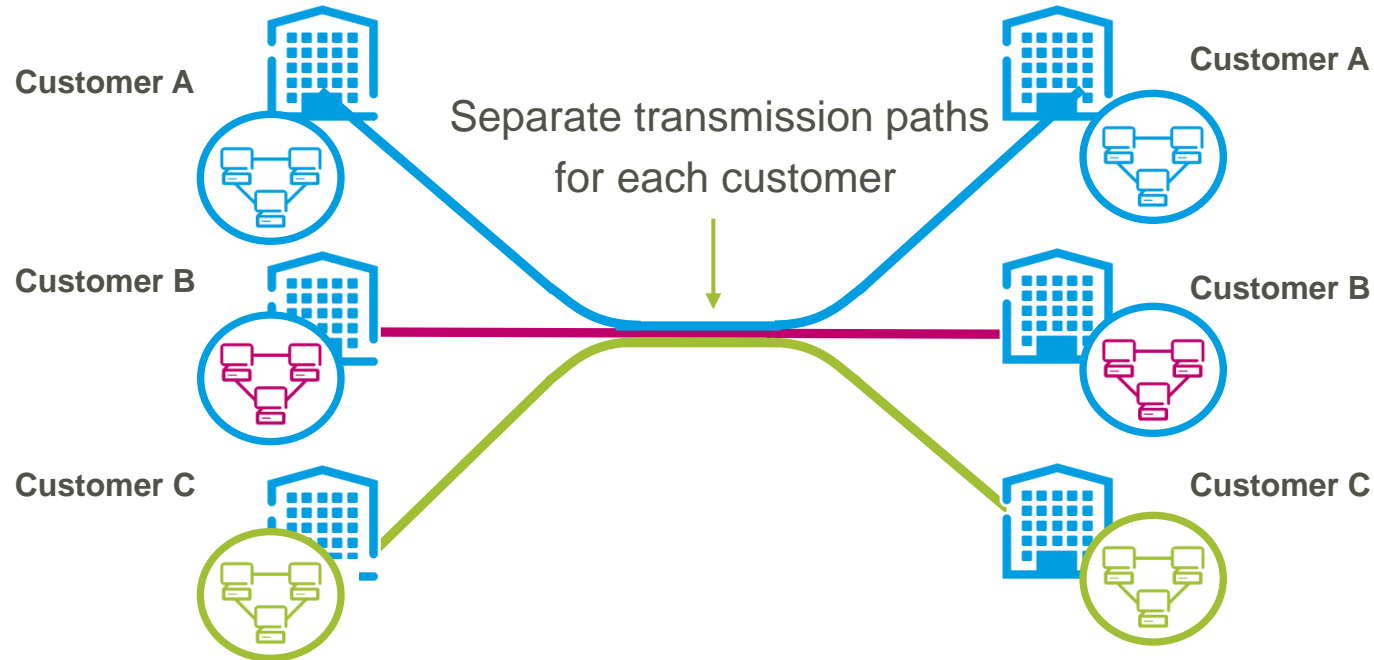
- Static end to end path

- Predetermined worker and protection path

- Full logical separation via Service Provider VLAN and MSP tag

- Point to point services have no switching and no learning of MAC addresses

- Any to any services have full MAC table separation

colt
smarter / faster / further

# 1Gbps and 10Gbps National and International Services

http://www.colt.net/ethernet

colt

smarter / faster / further

*The information delivery platform for European business*
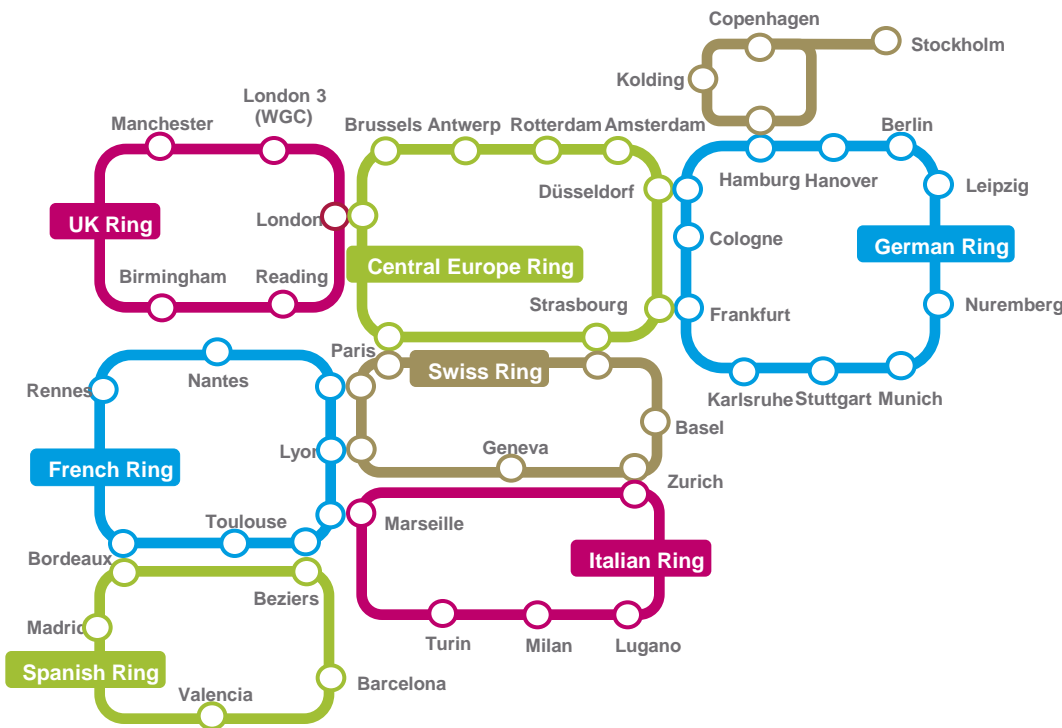
# 1Gbps and 10Gbps Delivery Platform – Colt LDN

1Gbps and 10Gbps Nat/Intl Ethernet services delivered directly over Infinera DWDM layer of Colt Long Distance Network

Copenhagen
Stockholm
Kolding

London 3 (WGC)
Manchester
Brussels Antwerp Rotterdam Amsterdam
Berlin

**UK Ring**
London
Düsseldorf
Hamburg Hanover
Leipzig

Birmingham
Reading
**Central Europe Ring**
Cologne
**German Ring**

Strasbourg
Frankfurt
Nuremberg

Paris
**Swiss Ring**
Rennes
Nantes
Karlsruhe Stuttgart Munich

**French Ring**
Lyon
Geneva
Basel

Toulouse
Zurich

Bordeaux
Marseille
**Italian Ring**

Beziers
Madrid
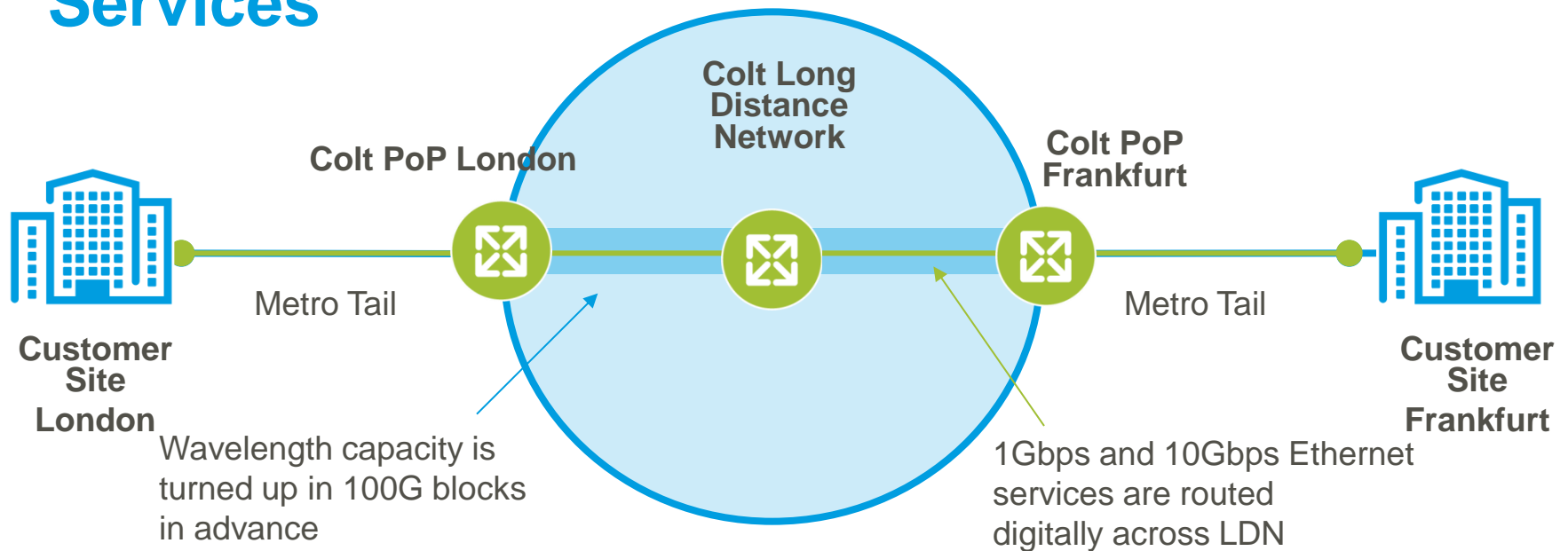**Spanish Ring**
Turin Milan Lugano
Valencia
Barcelona

Wide geographic footprint – available in 41 cities across Europe

Redundant architecture – dual DWDM equipment at each Colt PoP

Path protection available as standard service option

Diverse routing between 2 unprotected services-available on request

colt
smarter / faster / further

# 1Gbps and 10Gbps National and International Services



**Colt Long Distance Network**

**Colt PoP London**

**Colt PoP Frankfurt**

Metro Tail

Metro Tail

**Customer Site London**

**Customer Site Frankfurt**

Wavelength capacity is turned up in 100G blocks in advance

1Gbps and 10Gbps Ethernet services are routed digitally across LDN

## Key Features

- Transparent service – 100% throughput, no restriction on frame size
- Unprotected or path protected service
- Diverse routing available on request
- 10Gbps Ethernet available over active metro tail or extended fibre to Colt PoP
- Roadmap includes 100Gbps Ethernet

colt

smarter / faster / further

# Off Net Ethernet using Demarcation Device

http://www.colt.net/ethernet

colt

smarter / faster / further

The information delivery
platform for European business
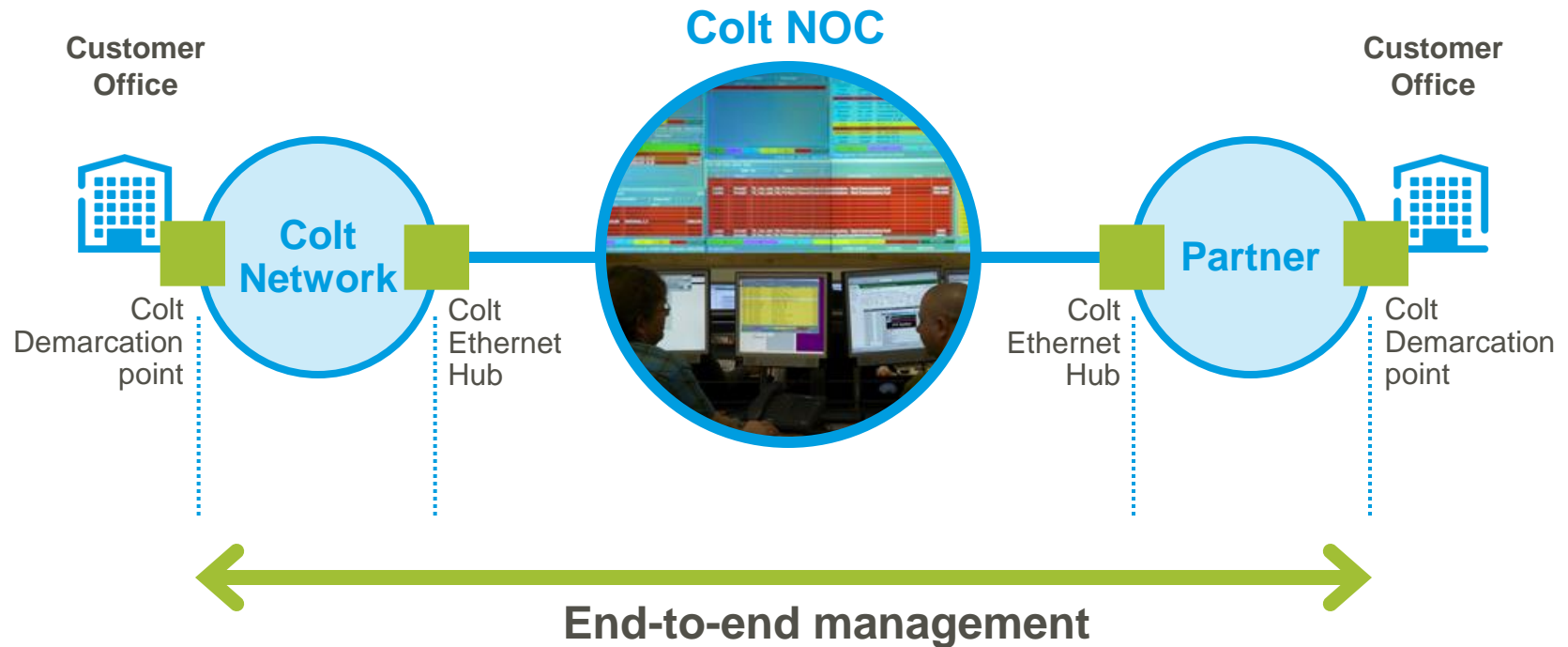
# End-to-end management

Colt now places its own Ethernet Demarcation device on the customer off net site. This enables Colt's NOC to monitor the whole circuit end to end (including the OLO), and conduct testing in a simplified process (no need to co-ordinate with OLO provider)



**Customer Office**

**Colt NOC**

**Customer Office**

**Colt Network**

**Partner**

Colt Demarcation point

Colt Ethernet Hub

Colt Ethernet Hub

Colt Demarcation point

**End-to-end management**

colt
smarter / faster / further

# Ethernet demarcation device Benefits

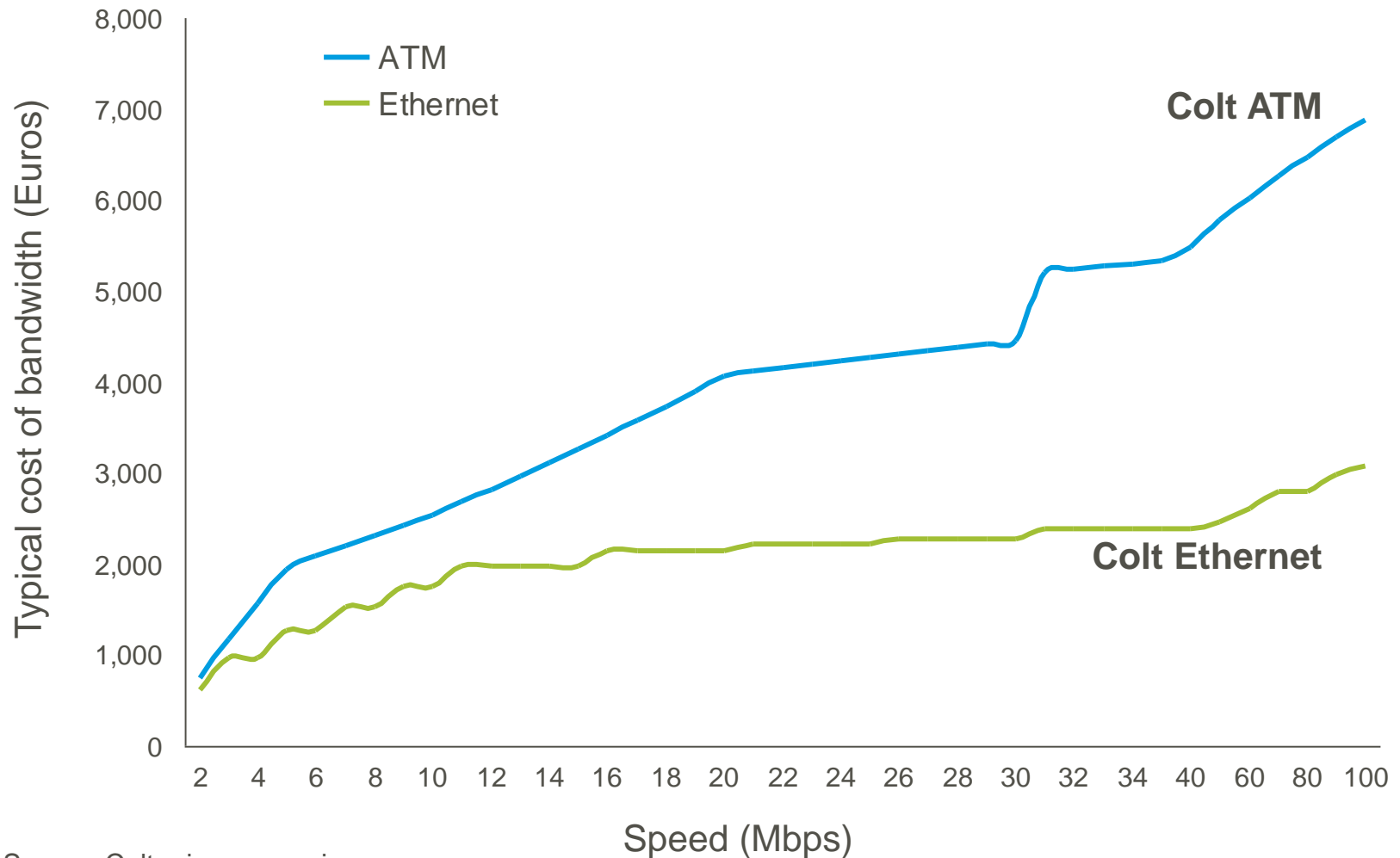| | |
|---|---|
| **Availability** | Provides end-to-end monitoring right up to the customer's equipment using standards-based Ethernet OAM, enabling improvement to service availability |
| **TTR** | Low-level end-to-end diagnostic capabilities drive improved TTR and fault management SLA |
| **Installation** | Improved service delivery SLA with reduced site visits through single-ended commissioning via remote loop-back capability. |
| **Enhanced Features** | Enhanced product features such as support for Infovista* reporting, flexible interface options, Class of Service*, jumbo frame support which can be as standard regardless of on-net/off-net.<br>*These features will be available offered in the near future |
| **Upgrades** | Sophisticated traffic-shaping and rate-limiting capabilities can support service features such as rapid bandwidth upgrade where OLO tail capacity is available. |
| **Access** | Flexible access options – native Ethernet and Fibre but also 'legacy-but-ubiquitous' E1/E3 – these are also the only regulated services in some countries. |

colt
smarter / faster / further

# Support for the business case for Ethernet WAN

http://www.colt.net/ethernet

colt

smarter / faster / further

The information delivery
platform for European business

# Colt Ethernet v Colt ATM prices



Source: Colt price comparison

colt
smarter / faster / further

# Colt Ethernet v Colt Link Prices
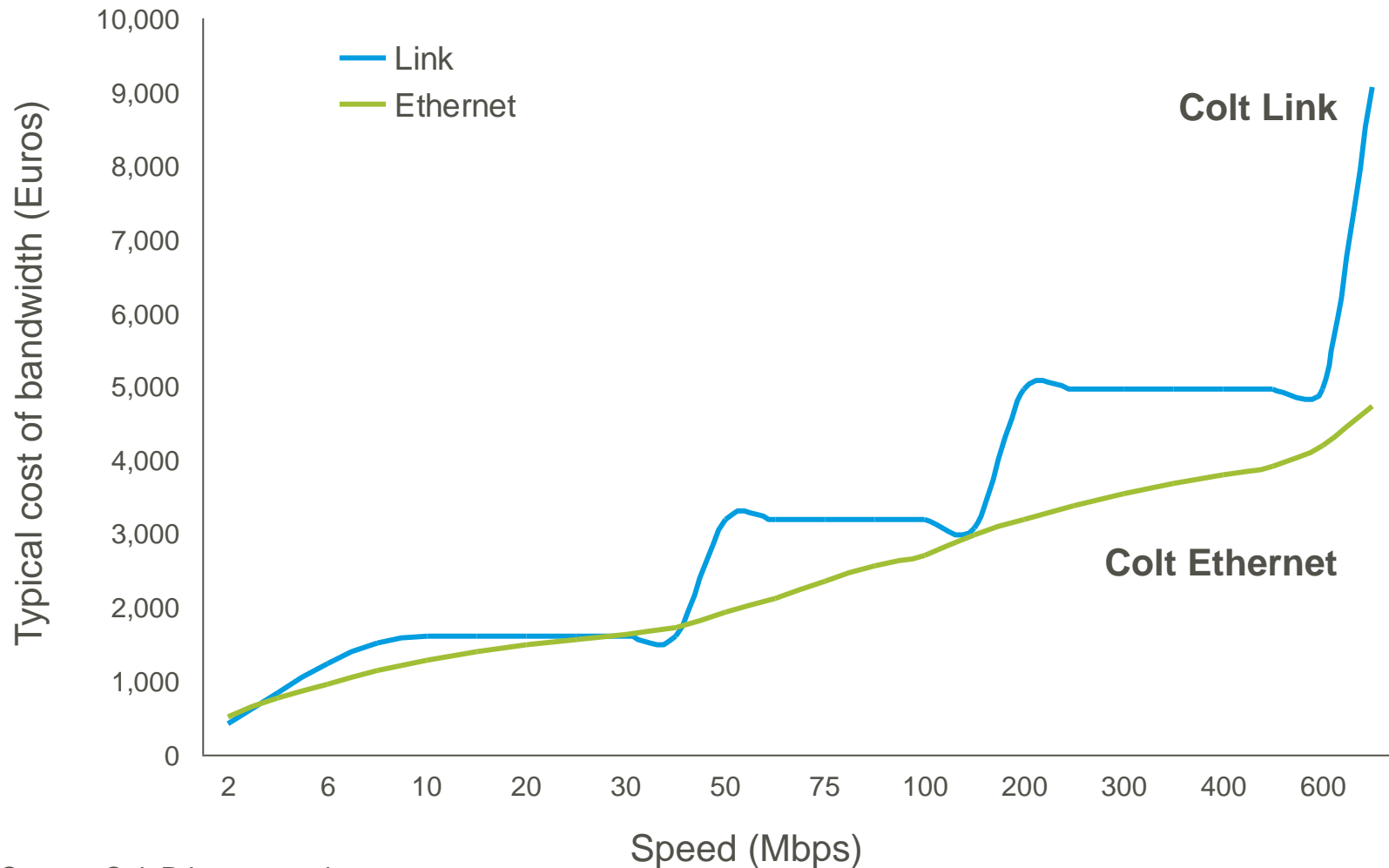


Source: Colt Price comparison

colt
smarter / faster / further

# Thank you

http://www.colt.net/ethernet

**colt**

smarter / faster / further

**The information delivery**
**platform for European business**

# Ethernet value propositions - Cost

**Cost effective:**

- Lower £/MB for bandwidth

- Granularity – pay for what you need

- Fewer routers needed

- Interface cards are cheaper

- Less need for specialist WAN engineers

colt

smarter / faster / further

# Ethernet value propositions - Agility

**Increased agility:**

- Increases in bandwidth delivered remotely (in many cases)

- Simple network structure is easier to manage and make changes

- CoS enables business-critical applications to be prioritised

- Remain in control of your routing; quick and easy to make configuration changes rather than waiting for the service provider to update your routing tables

colt
smarter / faster / further

# Ethernet value propositions - Performance

**Greater performance:**

- High speed with bandwidths of up to 10Gbps available

- A choice of topologies to fit your organisational structure

- Granularity of bandwidth

- Speed of upgrades

- CoS

- VLANs

colt
smarter / faster / further

# Ethernet value propositions - Security

**Enhanced security:**

- Dedicated links are physically separated from the internet

- VLANs to manage servers

- Multi-port access physically separates traffic internally

- Fast connections to data centres

colt
smarter / faster / further

# Ethernet value propositions - Resilience

**More resilience:**

- Less complexity means less potential points of failure

- Multi-port access

- Gold and Platinum SLA options

- Link aggregation at hub site

- Ethernet

colt

smarter / faster / further