DATA CENTRE MARKET EUROPE

BroadGroup

Consulting in practice

INTRODUCTION

The Data Centre, hosting and cloud practice has been the main focus of the company since 2002. BroadGroup has now become the leading global research and consultancy group in this area, through three divisions:

- **Consulting**
- **Market Reports**
- **Events**

Consulting Customers include:

6 degrees, ABRY Partners, Accenture, Allen & Overy, Amazon, ANZ National Bank, Apax, Ascendas, Bain, BNP, Booz Allen Hamilton, Brockton Capital, BT, Cannon, Carlyle, Cisco, Commerzbank, Corning, CSF, CTeX, Dataplex, Digiplex, Digital Realty, eBRC, Emerson, Equinix, Ernst & Young, e-shelter, eTeck Trinidad, euNetworks, Fidelity, Fujitsu Siemens, Glebe Asset Management, GMT Partners, Go Daddy, Global Switch, Goldman Sachs, Hewlett Packard, Hitachi, IBM, International Business Wales, Invest in Iceland Agency, IDA Singapore, Injazat, Invest Brisbane, Interxion, Keppel, LDC, Macquarie, McKinsey, Meeza, MDeC, OVH, Peer1, PMBH Investments, Royal Bank of Scotland, Rackspace, RBC, Rothschilds, Revenue Capital Asset Management, Savvis, Scottish Enterprise, Siemens, SilverLake, SingTel, SoftLayer, SPO Partners, STC, Strato, Summit Partners, SunGard, SWERDA, Swisscom, TeleCity, Technical Real Estate, Telehouse, Telstra, T-Systems, Veronis Suhler, Wellcome Trust, Wohl AG

INTRODUCTION: BROADGROUP

Strategic consulting work

- Commercial due diligence - M&A, IPOs, financial analaysis
- Market entry, competitive analysis, market data, vertical opportunities, positioning and strategy
- Emerging markets research and evaluation – recent examples include South Africa, Saudi Arabia, Nigeria, Kenya and Indonesia

Market Reports

Latest versions include

- Europe
- Nordic Markets
- South East Asia

Events

- Datacloud brands
- Finance & Investment Forum

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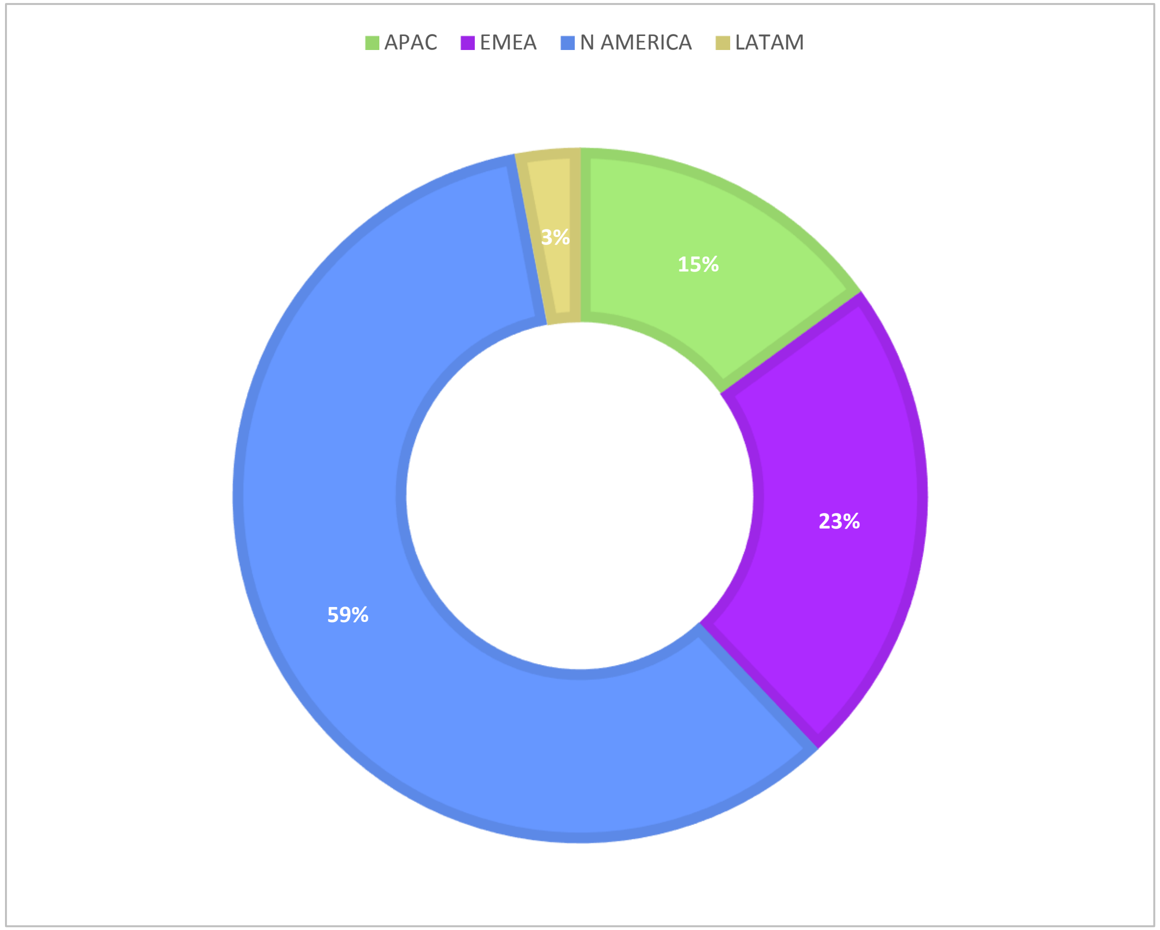
CONTEXT: WHERE ARE DATA CENTRES GLOBALLY?



Market Share Data Centres Global – Source: BroadGroup

CONTEXT: GLOBAL DRIVERS OF DATA CENTRES

Mobile – 4G, growth of mobile data, Internet of Things (IoT US$10-20 trillion market by 2020; wearable devices) 55% of all mobile traffic is video - *Source:KPCB*

Global IP Traffic - will pass a new milestone figure of 2.0 zettabytes per year by 2019 – *Source: Cisco*

Enterprise increased use of outsourcing – does it make sense to build a large, in-house data center? continued outsourcing parts of IT to data centers, re-evaluation of space requirements

Co-location trend - moving from ‘carrier hotel’ to ‘cloud hotel’

Analytics - "Big Data" new vertical growth market (eg Retailers/mobile ad targets)

Content/Media - Eg: Netflix streaming (35% all US internet traffic) and Xfinity (TV) on-demand services

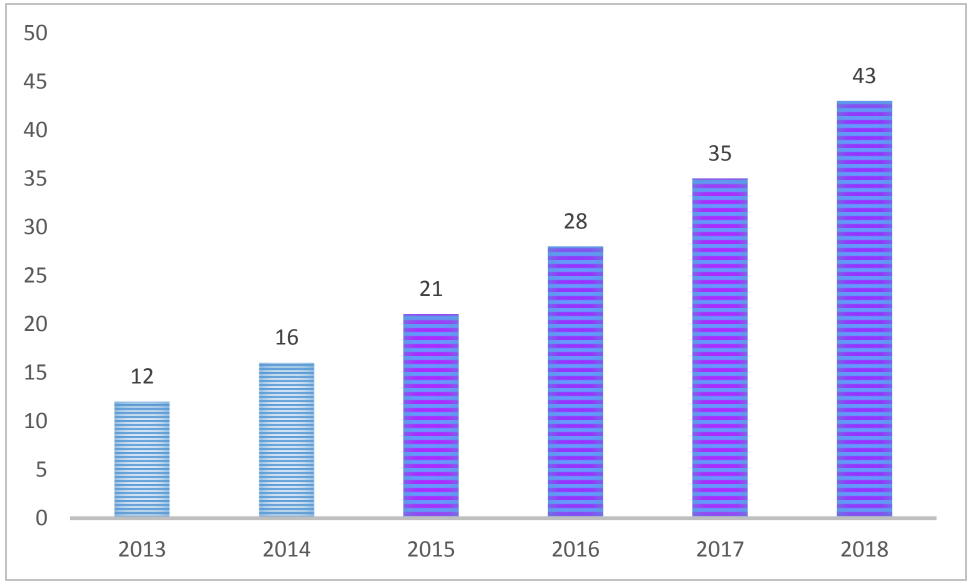
Cloud – now representing significant percentages of revenues in some data center businesses

Internet Giants - achieve scale, efficiency in power and cooling, lower cost base – deployment of “mega-data centers”

Social Media – driving huge storage requirements video/photo/user generated content

CONTEXT: GLOBAL GROWTH OF CLOUD INFRASTRUCTURE & PLATFORM

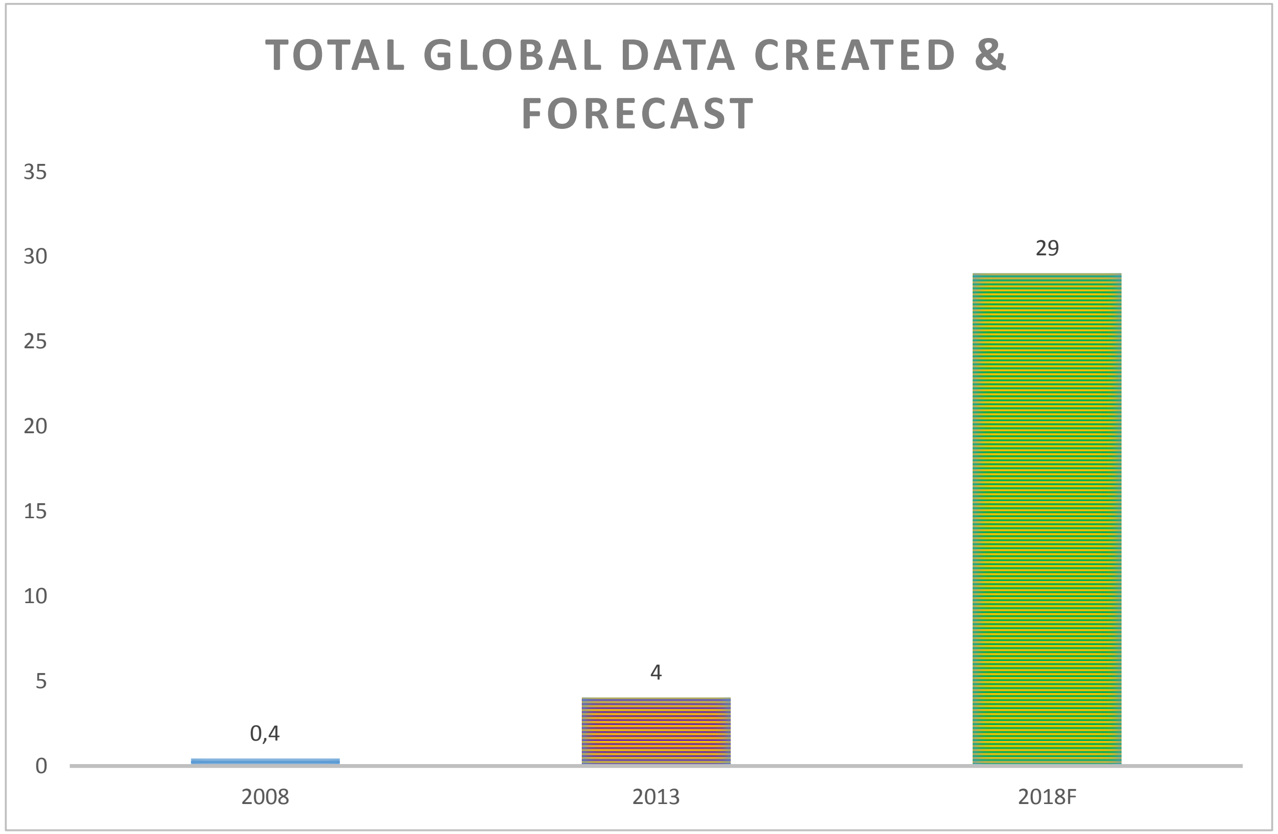
Goldman Sachs is forecasting cloud infrastructure and platform market will grow at a 19.62% CAGR from 2015 to 2018, reaching US$43B market value by 2018



Source: Goldman Sachs Research

GLOBAL DATA GROWTH

29-30 Zettabytes by 2018 forecast

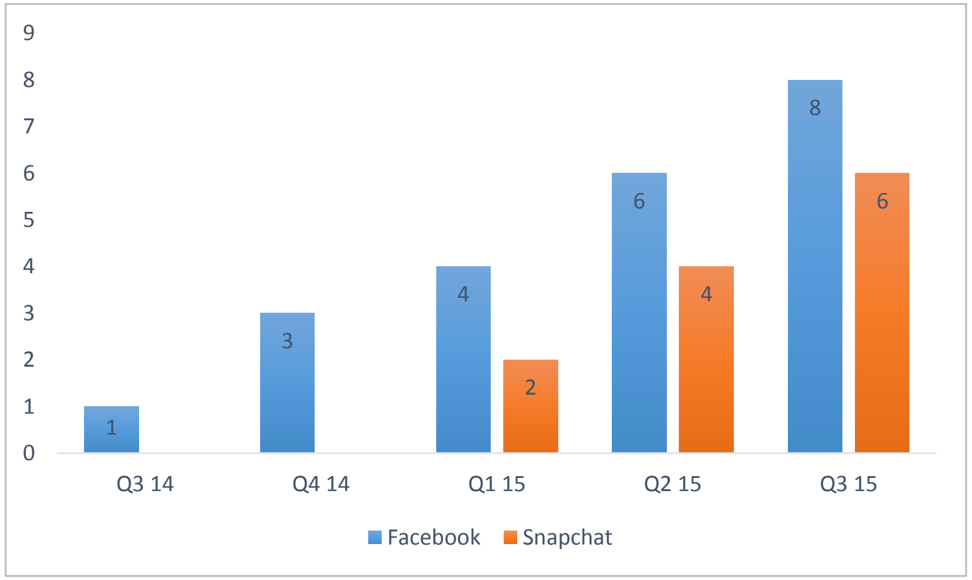


Figures in Zettabytes* - Source: BroadGroup Consulting/industry

*Zettabyte = 10^{21} bytes

GLOBAL DATA GROWTH

Video Views per day on Facebook – Snapchat catching up

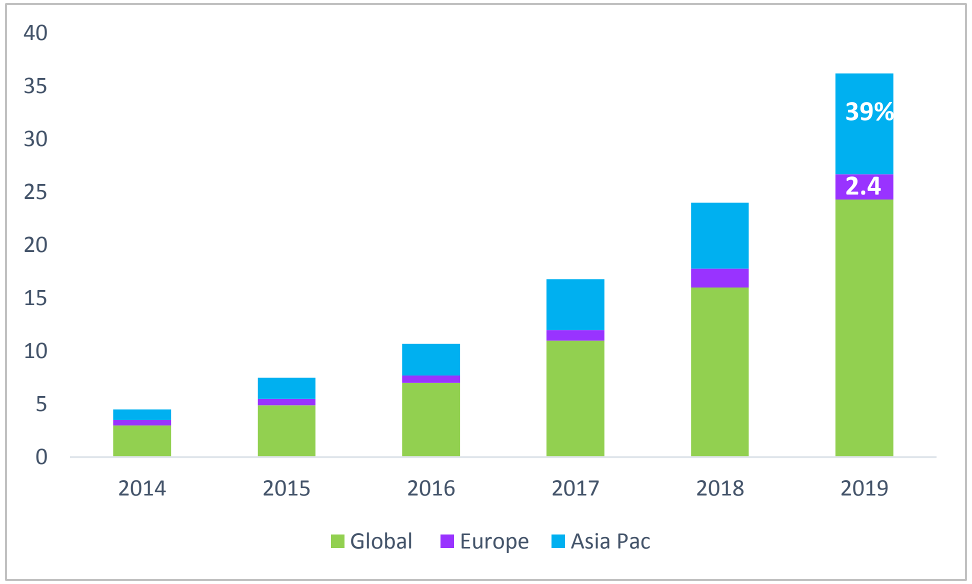


Billions of Video Views per day
Source: Facebook/KPCB

Facebook – 75% via Mobile

GLOBAL MOBILE DATA GROWTH

24.3 Exabytes Globally by 2019 forecast
Mobile data – Europe = 9.9% / Asia Pacific = 39% of Global Mobile Data Traffic by 2019



Source: Cisco Visual Networking Index

*Exabyte = 10^{18} bytes

INCREASED DATA CENTRE OUTSOURCING

Increased complexity in running in-house Data Centre – and recruitment of personnel to manage, sourcing power etc

Large upfront costs to construct – especially high spec facilities

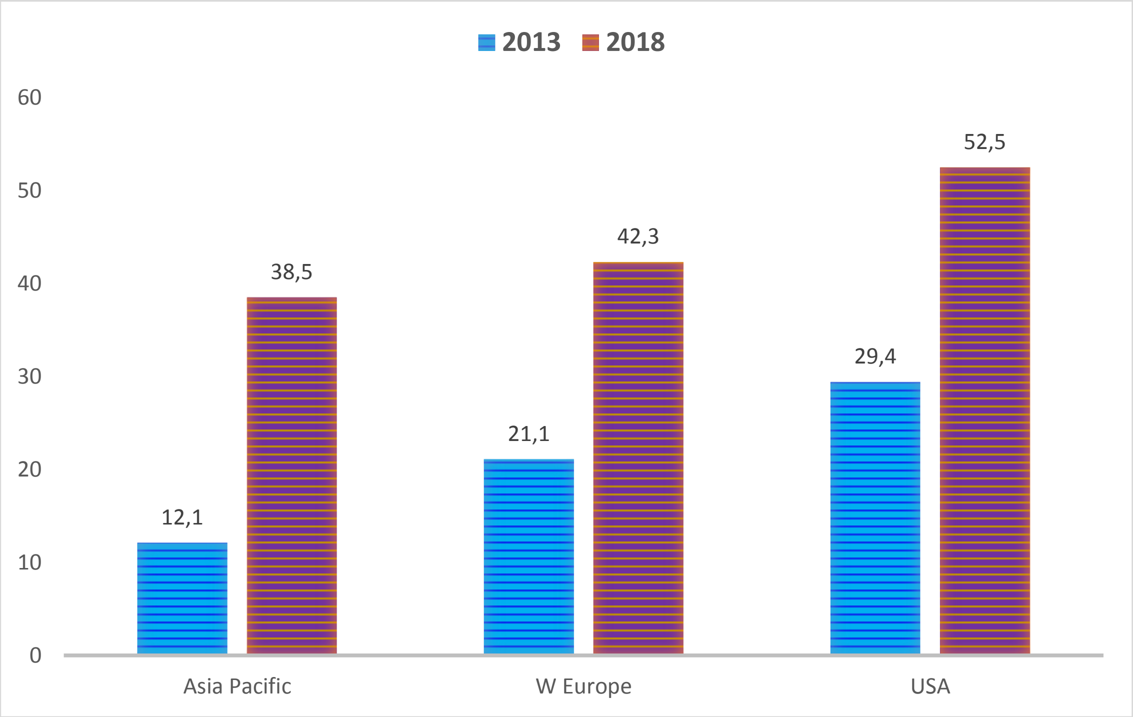
Not a core competency - owning and managing data centres are not core competencies for many organisations – need to focus on business

Organisation needs can change and grow quickly - and third party providers are able to provide flexible, on-demand, agile infrastructure at scale

Growing data centre compliance - and regulatory requirements especially data privacy, environmental legislation

+ Potential in-country growth following EU decision on Safe Harbour

Projected Increase in Outsourcing (%)



Source: BroadGroup Consulting

EUROPE

A group of very different markets

Important not to generalize

- Key business differences
- Wide cultural variation
- Data governance - Switzerland: banking data not to be taken outside country
- Luxembourg – eCommerce companies find attractive due to 3% VAT
- Ireland – seen as gateway to Europe by US firms
- Willingness to outsource – UK companies generally more willing to use 3rd party outsourcing
- Nordic countries – focus on cheap green power
- Growing data centre compliance and regulatory requirements

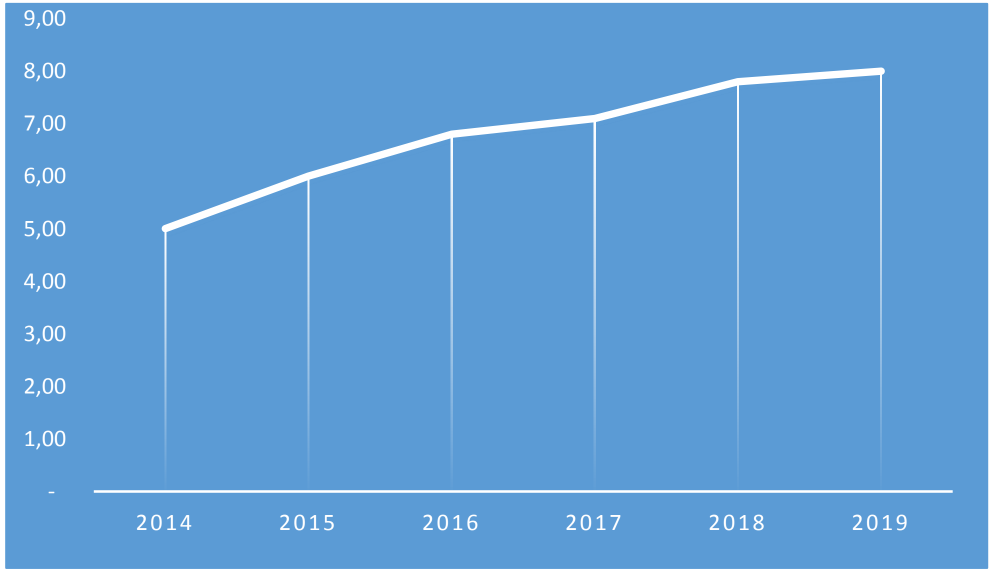
- All these differences have implications for the data centre market

EUROPE: COLOCATION MARKETS

Good market performance: €8 billion revenues by end 2019

Key drivers include:

- Cloud providers –smaller/specialist companies + SaaS providers
- Need for European presence from global (mainly USA) players (local customers, data sovereignty, legal concerns, safe harbour)
- New vertical markets showing growth – such as oil and gas, retailers, pharmaceutical
- More government and related outsourcing
- Development of second tier cities / transition to Tier 1 – eg Dublin?



Source: BroadGroup

BUSINESS MODELS IN EUROPE

Differentiation of different data center service models

	Data centre ownership	Server ownership	Application ownership	Other services
Wholesale	Freehold	Customer	Customer	None
Co-location	Long-term leasehold	Usually customer	Customer	Low-end hardware support
Hosting	Mix leasehold/rent – typically smaller sites	Usually provider	Website, email	Low-end tech support
Low-end managed services	Mix leasehold/rent – typically smaller sites	Provider	Specific areas such as database, storage	Low-end tech support
High-end managed services	Mix leasehold/rent – typically smaller sites	Provider	More customized and mission-critical applications	Professional services
Full outsourcing	Mix leasehold/rent – typically larger sites	Provider	Full suite applications	Taking over staff from user

Majority of European market focused here

Source: BroadGroup Consulting

CHANGES ON EUROPEAN HORIZON: US & ASIAN CAPITAL INFLUX

Market Entry: Internet Giants

amazon

Market Entry Impact:

Amazon **83%** share of the EMEA **public cloud market**

EMEA revenues of US$1.33bn are forecast for 2015

M&A: Consolidation and Investment

EQUINIX → TelecityGroup

Transaction value £2.35b

(Market Cap Telecity: £2.247b/Market Cap Equinix: US$16.52b)

Singapore Technologies Telemedia → VIRTUS Data Centres

Transaction value not reported for 49%

Also taking 74% stake in Tata’s 44 data centres globally

Data competition intensifies

NTT Communications → e-shelter

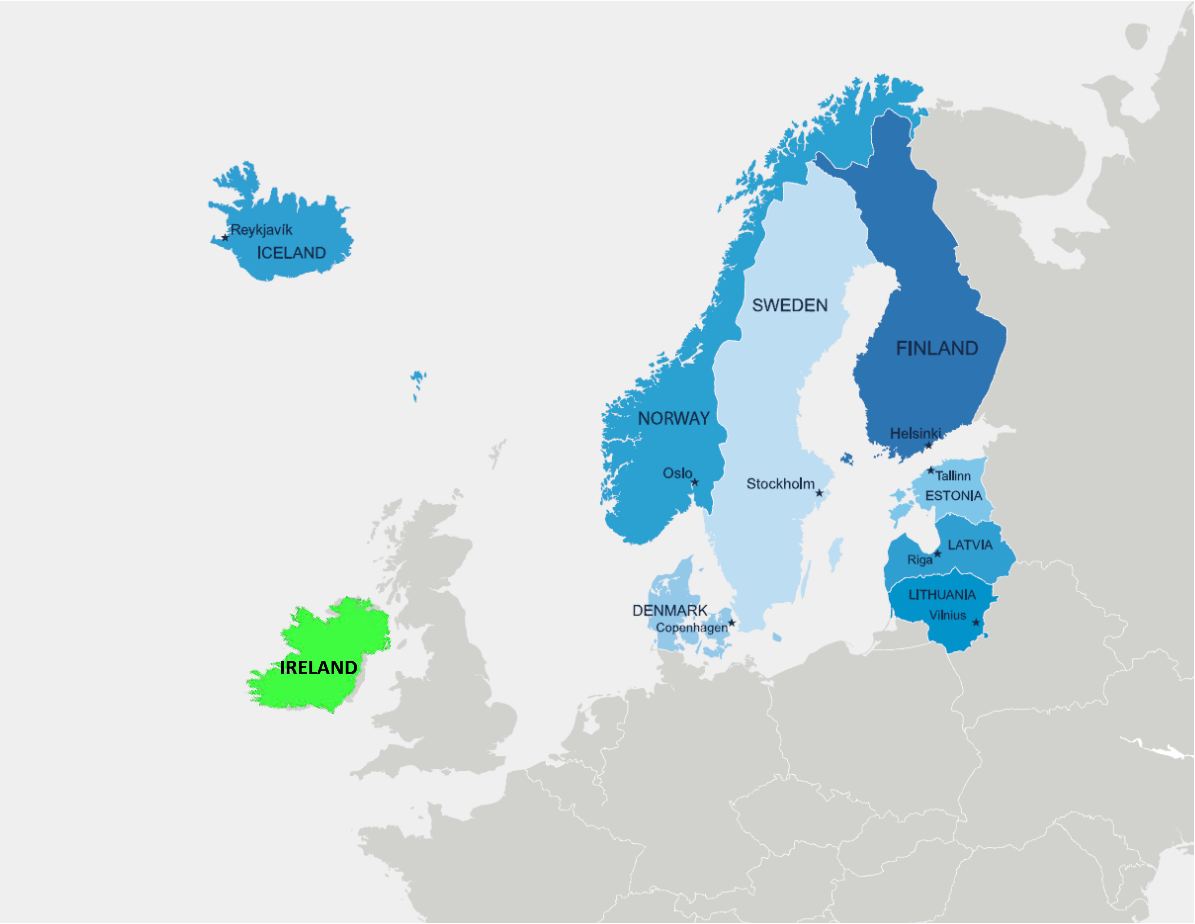
Transaction value US$830m
for 86.7% of company

CHANGES IN EUROPE – RISE OF NORDICS & IRELAND

Internet Giants move into European edge markets

5 Nordic Markets = 9.52% of all Europe (m2)

Ireland = 3.31% of all Europe



New Investments

Apple – Data Centers in Denmark & Ireland
$1.7b investment

Facebook 2
Luleå, North Sweden
11600m2/ 40 MW
2016-17

TeliaSonera
20k m2 data center Finland
30MW (up to 100MW)
$150m
2017

CHANGES ON GLOBAL HORIZON

DISPOSAL (….AND ACQUISITION)

Tata Data Centres
44 data centres acquired in 2013 and last year. It has a presence in the United States, UK and Singapore, besides major Indian cities like New Delhi, Mumbai, Bengaluru, Chennai and Kolkata

Possible sale to Singapore Technologies Telemedia (STT) backed by Temasek Holdings – to buy a 74 per cent stake in the Indian firm is valued at 45 billion rupees/S$964m/US$675.9m

Other buyers included Google, Amazon, Carlyle Group, Blackstone and Bain Capital

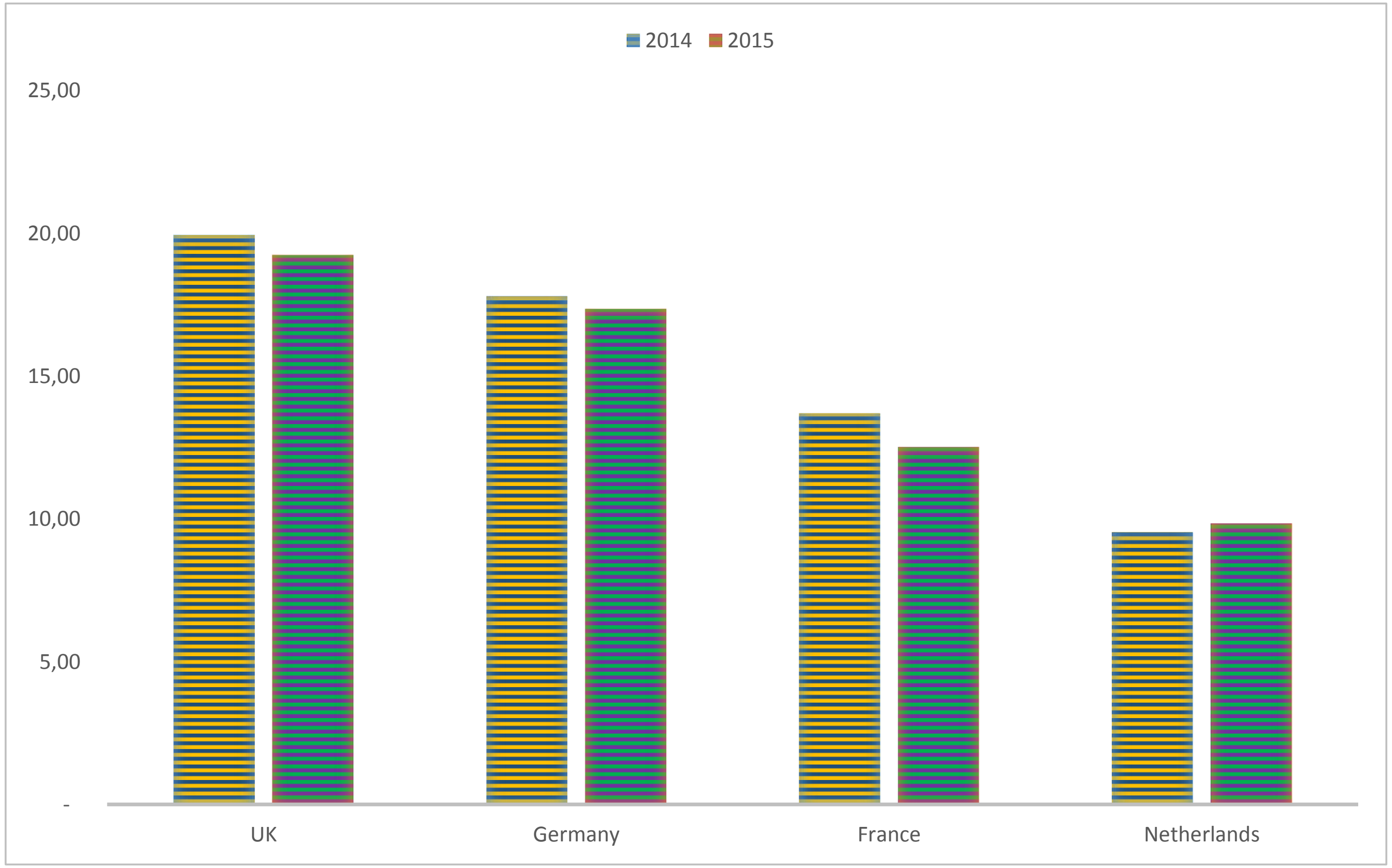
Verizon
Auction of data centres (43 locations) launched – hoping to raise US$2.5b

Centurylink Technologies
Considering sale of data centres (55 data centres in USA/Europe/Asia)

AT&T Inc
Company has been exploring a sale of its data centre assets for some time

MARKET SHARE BY COUNTRY (m2)

4 Key markets control 59% of m2 space in Europe at end 2015

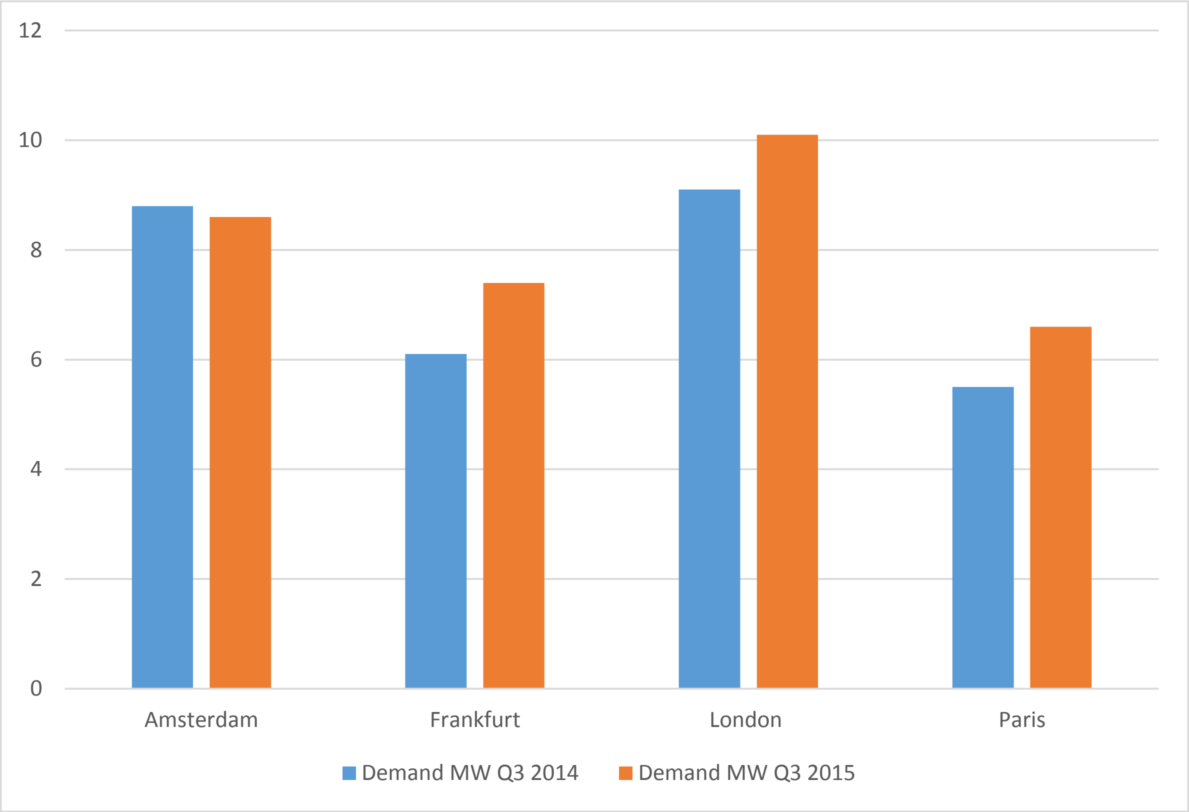


KEY PLAYERS IN EUROPE

Company	Data Centers	EMEA Countries
Digital Realty	17	5
Equinix	29	6
TelecityGroup	40	11
Interxion	40	11
Data4	13	3
Global Switch	6	5
eShelter	7	3
NTT	8	6
Telehouse	12	6

COLOCATION TRENDS

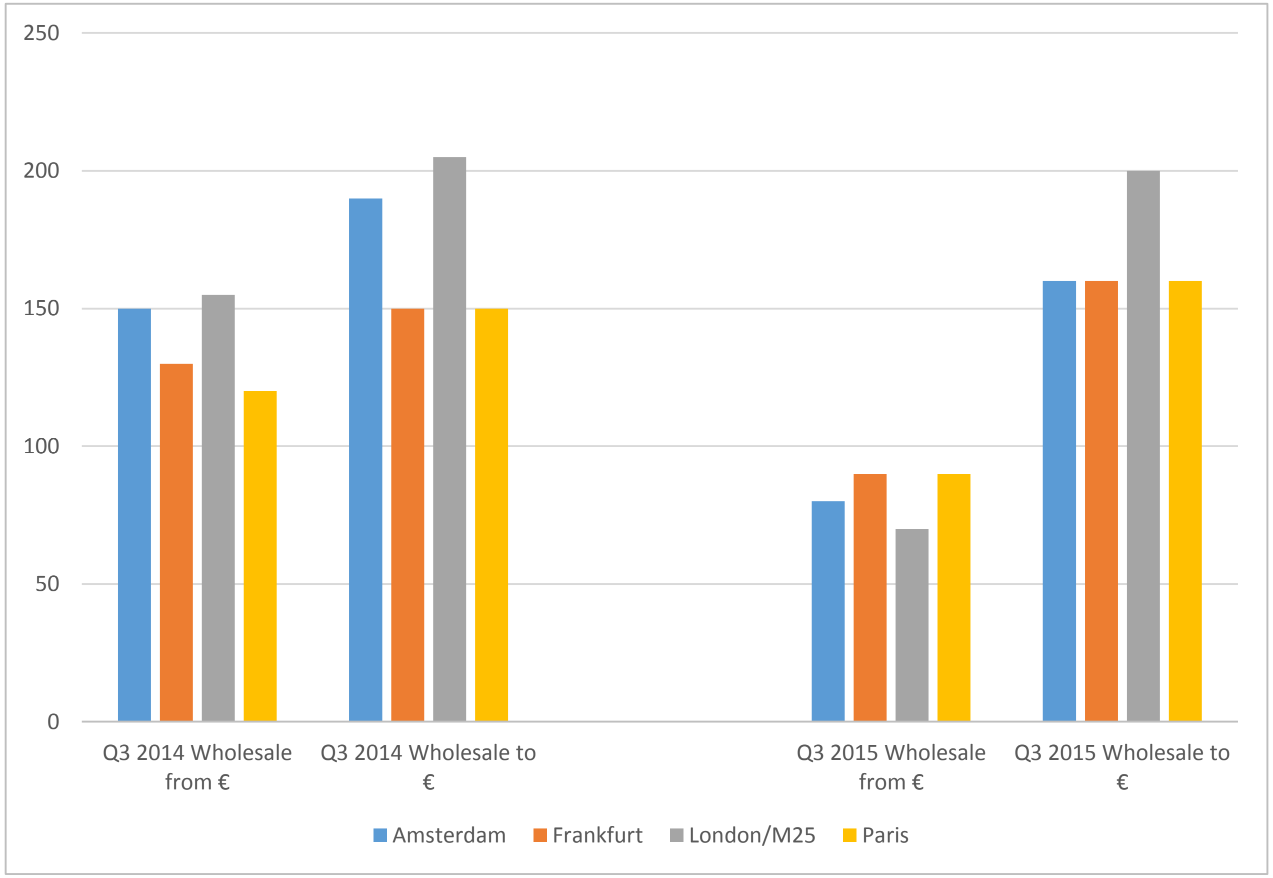
Co-location: comparing MW demand in Q3 2015 with Q3 2014 in the Tier 1 cities



Source: BroadGroup CMQ 3Q 2015

COLOCATION TRENDS

Co-location: Comparing wholesale price range Q3 2015 with Q3 2014 in the Tier 1 cities



Source: BroadGroup CMQ 3Q 2015

COLOCATION TRENDS

Quarter	Key reasons for winning deals – comparing Q4, Q3 and Q2 in 2014
Q3 2015	✓ Customer relationship ✓ Location ✓ Differentiated offerings ✓ Comprehensive portfolio of products ✓ Hybrid solutions ✓ Commercial flexibility and choice
Q3 2014	✓ Quality of the data centre ✓ Relationship with the customer ✓ Data centre location: Connectivity ✓ Price ✓ Flexibility, Efficiency ✓ Range of services; Access to hybrid solutions ✓ DCIM Portal ✓ Eco-systems within the data centre

Source: BroadGroup CMQ 3Q 2015

Thank You !

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