2016: Record Breaker

**Q4 SNAPSHOT**

- The emergence of large-scale build-to-suit activity makes a significant contribution towards the record levels of take-up.
- Cloud is responsible for 70% of overall take-up in 2016.
- Every market saw more take-up in 2016 than 2014 and 2015 combined.
- 79MW of new supply in Q4 alone, as a number of new wholesale schemes take shape.

**QUARTERLY REVIEW**

In this edition of the Marketview we assess Q4 2016 in the context of what has been a landmark year for take-up in the main European markets.

We consider how each individual market has come together to form the full picture of activity we have seen over the year.

We also take a look at how the Dublin market fared during 2016.
SUPPLY & AVAILABILITY

There was almost 80MW of new supply across the four FLAP markets of Frankfurt, London, Amsterdam and Paris in Q4 alone, and over 130MW in the full-year 2016.

Almost half of the new supply in Q4 belongs to build-to-suit schemes in Amsterdam. We expect this type of supply may be a more common theme in 2017, with large-scale facilities built for specific occupiers. The emergence of these build-to-suit schemes is probably a product of the speed to market requirements of the hyperscale cloud companies.

In London we saw 20MW of new supply in Q4 as Zenium prepares to launch its London One facility in Slough and Ark continue to build in Farnborough. Zenium will bring wholesale product to London as a new entrant to the market having already established itself in Frankfurt and Istanbul.

In Q4 we added Colt’s facility in Les Ulis to our Paris statistics. Having split from its network business, Colt’s defined data centre services strategy is paying off in key markets, including Paris.

Throughout the whole of 2016 we saw 131MW of new supply added to the four markets. Notably, this brings total FLAP market supply to 938MW and London becomes the first market to breach the 400MW mark. Frankfurt and Amsterdam both now have over 200MW of colocation supply and Paris nears the 150MW mark.

Though wholesaler facilities are only responsible for 42% of total FLAP market supply, they were responsible for over 70% of the new supply added in 2016. This is a trend mirroring the style of deal activity we saw throughout 2016.

Such large-scale new supply in Q4 2016 has temporarily alleviated concerns over a lack of supply in some markets. Overall vacancy actually rose in Q4 by around 8MW, meaning that there was only an overall 11MW drop in total vacancy across the four markets during 2016.

There are still concerns over how many providers in Amsterdam and Frankfurt could satisfy large wholesale requirements that require quick delivery. With the likes of Digital Realty, Colt, Zenium and others all poised to deliver new facilities in the next 12-18 months, the rush to do so quickly could determine who will be successful in 2017.

Figure 2: European Colocation Supply and Availability as at Q4 2016

Source: CBRE Research, Q4 2016
TAKE-UP & DEMAND

Colocation take-up reached a record 154.5MW for the full-year 2016. It was already the record-year for annual-take-up after Q3, and Q4 saw another 75MW of take-up.

35MW of take-up in 2016 was accounted for by single-let build-to-suit schemes. We have seen this style of take-up before, and they have always been included in our statistics in previous years, but we may be seeing the emergence of this style of data centre requirement on a much more significant scale. We predict that this trend of large cloud companies procuring their new data centre space through these types of facilities will continue.

If you remove build-to-suit schemes from the statistics, then 2016 saw 119.5MW of take-up across retailers (47.5MW) and wholesalers (72MW).

Take-up in 2016 was again heavily dominated by Cloud & IT companies. Our analysis shows that of the 154.5MW transacted in 2016, Cloud & IT was responsible for 70% of this total. This figure would be 60% without the build-to-suit schemes.

Largely due to 35MW of build-to-suit activity, Amsterdam finished 2016 as the market having transacted the most power with 53.6MW sold in the year.

London’s take-up figure for the full-year 2016 was 49.2MW where Ark, Colt, Gyron and Virtus all had particularly good years. Notably, these are all UK-based companies, and three of them have sites only in the UK. These companies are crucially all nimble and fast to act.

There was 34.2MW of take-up in Frankfurt for the full-year 2016 as the market also benefitted from increased Cloud activity in the year. e-shelter, Interxion and Zenium shared particular success in 2016.

Paris saw 17.6MW of colocation activity in 2016, which is significant. After a poor 2015, Paris saw an influx of hyperscale cloud service providers. Paris saw more than double the take-up of 2014 and 2015 combined, which is an extraordinary effort. Data4 were the standout performers in Paris, kick-starting the resurgence in Q2.

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Figure 3: European Colocation Take-up as at Q4 2016

Source: CBRE Research, Q4 2016
TAKE-UP & DEMAND

Looking specifically at Q4, we saw 75MW of take-up across the four FLAP markets in the quarter alone. Considering the previous record for full annual take-up is 78MW, this is particularly remarkable.

Even without the 35MW of build-to-suit take-up, the quarter would have been the all-time record quarter, with 40MW of take-up across the four cities.

Amsterdam saw 44MW of take-up in Q4 which is a record for any market.

London also had a particularly strong Q4 with 20MW of IT power sold in the quarter. This was relatively evenly split across providers located in the South, West and North of the city, showing that there is healthy competition in the market with deals being won by different providers in different geographies.

Paris saw 6.5MW of take-up in Q4 alone, finishing the year on a strong note, and giving itself a good platform for further expected cloud service deals which will land in 2017.

Frankfurt had a relatively quiet Q4, seeing 3.8MW of take-up which provided a calm end to an otherwise active year.

We saw a number of take-up records broken in 2016, in fact, almost every record in the book. Some of the highlights include:

- Highest ever aggregate annual take-up (154.5W)
- Highest ever aggregate quarterly take-up (Q4 – 74.9MW)
- Highest individual market annual take-up (Amsterdam – 53.6MW)
- Highest individual market quarterly take-up (Amsterdam – Q4, 44.0MW)
- Every market saw more take-up in 2016 than in 2014 & 2015 combined.
- Frankfurt, London and Amsterdam more than doubled their 5-year (2011-2015) average for annual take-up in 2016; Paris came very close to doing so.
- London and Amsterdam had their highest ever quarterly take-up during 2016, Frankfurt and Paris had their second highest ever.
- 70% of annual take-up accounted for by Cloud & IT.
MARKET ABSORPTION

As of Q4 2016, London has the highest absorption rate of the major markets at 3.2 years. Substantial new supply in the market has increased competition for key deals with a number of providers able to offer solutions.

Amsterdam has the lowest absorption rate at 1.2 years which would be considered undersupplied.

Frankfurt has a healthy absorption rate of two years, which we would consider to be in equilibrium, however, this figure is substantially lower in the wholesaler segment of that market.

After Colt’s inclusion in the Paris statistics, the market’s absorption has risen to 2.6 years (from 1.5) showing how much one substantial new facility can rebalance an entire market.

Absorption definition: Market absorption is the number of years it would take current vacant supply to be fully let based on the fixed average take-up of the previous five years (i.e. not including take-up in the current year).

Q4 2016 KEY STATISTICS

Figure 5: Key Statistics – year on year comparison (MW)

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<thead>
<tr>
<th></th>
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<th>Colocation take-up (quarterly)</th>
<th>Colocation take-up (year to date)</th>
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<td>204</td>
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<td>Q4 2015</td>
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<td>Frankfurt</td>
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<tr>
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<td>3.8</td>
<td>34.2</td>
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<tr>
<td>Q4 2015</td>
<td>181</td>
<td>37</td>
<td>1.6</td>
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<tr>
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</table>

Source: CBRE Research, Q4 2016
DUBLIN FOCUS

The Irish capital is undoubtedly the main challenger to the four major FLAP colocation markets in Europe. Dublin's position as the premier location in Europe for hyperscale self-build schemes is clear; the enduring question is whether this foundation has driven a substantial, sustained, colocation market in the city.

Crucially, Dublin is not a new colo market; it has been home to a colocation landscape for many years and a number of international providers such as Digital Realty, Equinix and Interxion all have multiple facilities in the city. The activities of these companies and a number of other schemes coming to the market are driving a substantial effort to bring significant capacity to Dublin.

Ireland provides a strategic geographic landing point for US companies in Europe. This is aided by the AquaComms, Hibernia Atlantic and Hibernia Express cables which provide a trans-Atlantic network from key hubs in the US to both Dublin and Cork and the IFSC [Irish French Sea Cable] which will run from Cork directly to Lannion, France, which is planned to be live in Q3 2019. Ireland has also taken a business-friendly approach to the data centre sector which, along with favourable corporate tax rates and other socio-economic factors, has led to the continued success the market has seen from hyperscalers building in the city. Prior to 2016, the Cloud & IT companies mostly built their own facilities, but that is starting to change with the creation of build-to-suit schemes.

Whilst Dublin may not see the same number of wholesale enterprise deals coming to the city as the four FLAP markets, it has started to attract large build-to-suit colocation schemes in response to the speed to market requirements of the hyperscale Cloud & IT companies.

CBRE’s analysis of colocation deals in Dublin, when you include both traditional requirements and these build-to-suit requirements, suggests that Dublin will have seen around 40MW of colocation take-up in 2016. This is significant and would make Dublin the third best performing European market in 2016.

Furthermore, our analysis suggests that there was another 38MW of self-build IT Power delivered by the hyperscale companies that also went live in 2016.

Host in Ireland, an initiative to promote the Irish data centre industry, suggests that Dublin’s success in 2016 was driven by a number of factors including large-scale public cloud adoption across the EU region and the emerging trend of hybrid cloud. Furthermore, colocation providers continuing to expand and benefiting from Ireland's new "off-island" fibre cables and the increased availability of energy generated by renewable sources were significant factors.

Looking forward into 2017 and beyond, there is further opportunity for Dublin to build on the success it saw in 2016 as the European agenda becomes a key consideration. For instance, the UK’s ability to match European GDPR framework following an exit from EU could provide an opportunity for the Dublin market if the process is less smooth than anticipated.

We'll monitor Dublin keenly in 2017 and take interest in whether the market can sustain this level of heightened activity.
The European data centre industry continued to exhibit an underlying confidence in H2 2016, evidenced by the continued announcement of new supply and take-up across the continent.

Both wholesale and retail suppliers of data centre space have continued expansion plans across the continent. For instance, Equinix reported a four-phased development at its existing campus at the Amsterdam Science Park, as well as adding an acquisition from Digital Realty to its Paris portfolio. Meanwhile, Interxion announced expansions of existing facilities in Paris (2,100 m²) and Marseille (1,400 m²) and new builds in Frankfurt and Marseille; in London’s Docklands Telehouse unveiled its £135 million North Two facility; in Newport Next Generation Data built out three data halls, and in Limburg, Germany, OVH announced a new 45,000 server scheme.

IT integrators, cloud providers and carriers have continued their data centre expansion programmes, driven by the ongoing demand for cloud and associated services. Microsoft doubled its European capacity over the year, with new facilities in the UK and Germany, and expansions in Ireland, Holland, Austria and Finland, whilst announcing multiple openings in France for this year. Meanwhile, Amazon Web Services reported the livening of their London data centre, and Rackspace announced a new Frankfurt facility. Also in Germany, T-Systems secured finance for the expansion of its Bierre scheme, increasing capacity by a further 45,000 servers by 2018. The company also opened a data centre in Hayes, located in the Virtus London2 facility and IBM reported the opening of its first facility in Norway and the addition of four new cloud data centres in the UK.

There have also been several speculative developments. In the UK, Kao Park received planning approval to develop its campus in Harlow whilst in London, TH Real Estate started construction on its 12,820 m² The Point scheme. Elsewhere, Datacenter.com announced the start of construction on their new 10MW data centre in Amsterdam, whilst in Italy, Supernap opened its Milan facility of 42,000 m² of technical space.

Third-party colocation solutions continue to provide access to state-of-the-art facilities, whilst allowing enterprises to remain in control of their IT businesses. Indeed, it has already been noted that the year as a whole saw record levels of satisfied demand across Europe. For example, colocation supplier Zenium secured a number of notable contract wins including NetCore, the Turkish IT services provider, and an unnamed international financial software company, in its Istanbul facility, whilst also announcing a pre-let for an initial 1MW of power with one of its existing customers at its London facility, as well as two new customers at its Frankfurt One facility.

Some enterprises continue to look to develop their own data centre estate, but these tend to be the ones with ready access to capital. For instance, during H2 it was reported that social media giant Facebook is building a new 55,000 m² data centre in Odense, Denmark. Whilst in Luxembourg, The European Commission officially opened its new facility.

The trend to outsource IT infrastructure to third party providers has remained an important driver of demand. Some examples include travel agent giant, Thomas Cook, which extended its long-term IT outsourcing contract with Atos. Swedish-based cosmetics company, Oriflame, agreed an outsourcing contract to IBM worth a reported €46 million.

We also recorded a number of examples of major enterprises switching to cloud solutions from the global IT players. For example, Microsoft secured contracts from Adobe and the Metropolitan Police Service, as well as The Ministry of Defence (MoD) and South London and Maudsley NHS Trust who are among the first organisations to run Azure services in Microsoft’s UK datacentre. AWS secured cloud deals with Avex Data Services, Matson and BBVA whilst Rackspace secured a cloud infrastructure deal with Metro Bank.
The second half of 2016 has seen the appetite for merger and acquisition activity within the data centre market continue apace, both on a global and European basis. For example, CenturyLink agreed to sell its data centres and colocation business to a private equity vehicle of BC Partners and Medina Capital, whilst also agreeing the acquisition of Level 3 in a transaction valued at US$3.4 billion. Elsewhere, RackSpace was acquired by funds managed by Apollo Global Management, a move which will see the cloud provider go private, whilst a consortium of Chinese investors spent a reported £2.4 billion acquiring a 49% stake in Global Switch.

In the UK, DataPipe acquired fellow cloud services provider, Adapt, whilst Metronet bought M247, and InfraVia Capital Partners acquired a controlling stake of Next Generation Data. In addition, Node4 secured a new principle investor in private equity firm Bowmark Capital.

The period also saw a number of notable examples of direct real estate investment within the sector. The Singapore based Keppel DC REIT was especially busy acquiring a data centre in Cardiff from Cardiff Data Investments Limited for a reported £34 million having also acquired a 15,365 m2 shell and core data centre in Milan for €37.2 million.

In addition, Keppel reportedly purchased a Frankfurt data centre in collaboration with one of its subsidiaries, Alpha Data Centre Fund, for €76 million; whilst AXA IM Real Assets bought a fully let 16,330 m2 facility, for €36.4 million in Amsterdam.

During 2017 uncertainty remains, particularly in the UK. For example, research firm LoudHouse found that 50% of businesses are consciously delaying IT decisions with 75% stating that Brexit is limiting their 2017 IT plans.

Despite these concerns, evidence suggests that the European IT and data centre markets in general are still underpinned by strong market fundamentals, with many commentators believing that demand for IT services is unlikely to diminish in the next 12 months. Recent research tends to support this hypothesis: Gartner, for example, forecast that IT spending in Europe, the Middle East and Africa will total US$1.25 trillion in 2017, a 1.9% increase from 2016. Further evidence of the ongoing demand for cloud services is provided by Cisco who forecast that cloud traffic is expected to jump from the 3.9 zettabytes (ZB) per year recorded in 2015 to 14.1 ZB per year by 2020, and a recent report from Technavio suggests that the global data centre network infrastructure market is expected to grow at a CAGR of close to 5% during the period 2016-2020.

So whilst global politics and European economics may still play a significant role in the health of the data centre market during the course of 2017, the favourable balance between supply and demand of technical space looks set to continue to provide a buoyant market place, and encourage interest from investment capital over the course of the year.
**LONDON**

London finished the year with an incredibly strong 49MW of take-up as a number of providers closed transactions in the final quarter.

London’s usual quarter-on-quarter volatility, as a large wholesale market, was again evident in 2016 as Q1 and Q3 saw 12.9MW of take-up between them, whereas Q2 and Q4 saw 36.3MW of total take-up.

Looking ahead to 2017; if London follows Amsterdam’s lead we may see large scale build-to-suit colocation deals in the market in the coming year.

We will also see a number of new facilities in the market as existing providers who are short of existing capacity will develop new sites. We may see an influx of new US-providers who are currently looking for sites in the market.

**FRANKFURT**

Frankfurt saw 34MW of take-up during 2016 which is 2.5 times its current 5-year average. This was a particular achievement given a relatively consistent previous 3 years around the 15-18MW mark which had given the market a sense of predictability and balance.

Frankfurt is one market where there is a significant lack of fitted wholesale supply available today that could house the larger requirements we see in the market.

However, there are a number of established international wholesale developers, notably Colt, Digital Realty, e-shelter and Zenium that will look to deliver new facilities or expansions over the next 12 months.

This new supply and sustained take-up will give the market a sense of continued equilibrium between supply and demand, which we have come to expect in Frankfurt over the past few years.
AMSTERDAM

The Amsterdam market had been fairly quiet in 2016 until 35MW of build-to-suit take-up was recorded. This figure made Amsterdam Europe’s top performing market with an incredible 53.6MW IT power sold in the year. It is the second time in four years that Amsterdam has finished top of the league table. Without this extra boost, Amsterdam would have only seen 18.6MW of take-up.

There was 40MW of new supply in Amsterdam during 2016. However, if you remove the aforementioned 35MW, there was not much new supply in the year.

Also noteworthy in Amsterdam is KPN rebranding its colocation data centres business to NLDC.

PARIS

Paris saw 18MW of take-up in 2016, which is a very strong effort in its own right. In the year we saw the first major movements from the hyperscale cloud service providers to Paris.

Paris was the market which saw the highest percentage increase on 2015 take-up.

Over the next year we expect more deployments in Paris from Cloud and UStech companies looking to penetrate the market now that a path has been carved out by the bigger players.

Though Paris has seen relatively little new supply in the past couple of years, Iliad’s imminent DC5 will provide new wholesale product to the market to ensure that Paris is well supplied for 2017.
DEFINITIONS

SUPPLY
Retail colocation supply comprises fitted data centre space only; unbuilt shell phases of the data centre are excluded.

Wholesale colocation supply includes both fitted and shell data centre space. Typically wholesale operators sell shell space which is built out to suit customers.

AVAILABILITY
Retail availability of space is based on fully fitted space, vacant and available to sell

Wholesale availability is based on all vacant space.

VACANCY RATE
The vacancy rate is a product of availability/total supply.

COLOCATION TAKE-UP
This comprises data centre space sold at Retail and Wholesale colocation facilities in the relevant quarter.

EUROPEAN DATA CENTRES
We use the four largest markets in Europe: Frankfurt, London, Amsterdam and Paris (FLAP Markets) to represent the European market.

SPACE TYPE
Shell: shell & core space is the base real estate of a data centre, a wind and watertight structure with exposed floor and ceiling slabs and exposed finishes to the walls. The landlord obtains permissions for data centre use and make provisions for tenants to install their own chillers and back-up power generating equipment, or the landlord would provide these on a build-to-suit basis. In addition, an incoming diverse raw HV (high voltage) power supply would usually be provided.

Fitted: fully fitted space is ready for tenant IT equipment to be installed almost immediately or subject only to minor works being carried out to account for bespoke equipment and layouts.

ABSORPTION
Market absorption is the number of years it would take current vacant supply to be fully let based on the fixed average take-up of the previous five years (i.e. not including take-up in the current year).
CONTACTS

Andrew Jay  
Head of CBRE Data Centre Solutions  
d: +44 (0)20 7182 3461  
m: +44 (0)7802 361 351  
e: andrew.jay@cbre.com

Mitul Patel  
Associate Director, CBRE Data Centre Solutions  
d: +44 (0)20 3257 6669  
m: +44 (0)7825 120 875  
e: mitul.patel@cbre.com

Gabriel Harris  
Senior Director, CBRE Data Centre Solutions  
d: +44 (0)20 7182 3522  
m: +44 (0)7958 547 803  
e: gabriel.harris@cbre.com

CBRE DATA CENTRE SOLUTIONS

CBRE formed a Data Centre team in 1994 to address the specialised technical real estate needs of high-tech firms such as telecommunications companies, data centre operators and corporates.

Core technical real estate services provided by the CBRE Data Centre Solutions team include:

• Acquisition – one-off assignments, worldwide network rollouts
• Disposal – one-off assignments, multi-site marketing campaigns
• Investment
• Consultancy – consolidation strategies, mergers & acquisitions
• Asset Valuation – bank, corporate
• Project management, development monitoring, due diligence, building and M&E surveys
• Research – market reports, statistics, take-up forecasting

CBRE has monitored worldwide colocation supply statistics since 1999. This bulletin relates only to the four largest European Colocation markets. Additional market statistics are available on request.

DATA SOURCE

CBRE in association with Jonathan Heap, Director, iXConsulting

Founded in 2001, iXConsulting is an independent consultancy focused on proving a research service for organisations with a strategic interest in the data centre and mission critical facility industries.

To learn more about CBRE Data Centre Solutions Group, please visit: http://www.cbre.co.uk/uk-en/services/global_corporate_services/data_centre_solutions. To access additional research reports, please visit the Global Research Gateway at: www.cbre.com/researchgateway.

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