

Premium Data Centre Europe - 2012

Pricing, Business Models & Services

Premium Data Centre Europe - 2012 – Pricing, Business Model & Services

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Report Summary

This new report offers a unique overview into the new types of independent Data Centre being established that are able to cater for high density IT applications across 15 key European countries. The publisher (TCL) defines the Premium Data Centre as a facility that is capable of supporting customer power of up to 20 kW per rack and focuses on the development of the high density independent Data Centre facility for each of the 15 countries.

The 15 European countries included are - Austria, Belgium, Czech Republic, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland and the UK.

The majority of the research for the report is based on quantified data derived from 82 Premium Data Centre facilities based across the 15 European countries listed above.

For each country TCL examines -

- The existing Data Centre landscape,
- The key Premium Data Centre providers already present,
- New Premium Data Centre developments (including new facility build outs) are identified,
- Pricing for the Premium Data Centre is provided with examples of the rack space price levels to be found,
- The main challenges for the Premium Data Centre market are considered (challenges that are identified include a shortage of suitable high density Data Centre space, uncertain customer demand for third party IT services, and relatively high industrial electricity costs).

For each country TCL provides a key statistics table (which includes the number of facilities and raised floor space available as of the end of 2012) as well as a chart showing the range of current Premium Data Centre rack space pricing, forecast Premium Data Centre rack space pricing from 2012 to 2016 and forecast Premium Data Centre raised floor space from 2012 to 2016.

In the report TCL also provides data on industrial electricity costs by country, key new Premium Data Centre deployments, the variance in development costs per square metre of space for the Premium Data Centre, and the key success factors in building a new facility (including a high degree of telecoms & IP connectivity, power availability and ease of end user customer access including ease of transportation access being crucial).

TCL also explores some key issues around the new generation of Data Centres including power and cooling, the impact of new environmental legislation, recently launched facilities with low PUE (Power Usage Efficiency) metrics as well as the growth in electronic High Frequency Trading (HFT) by the financial community which is placing unique demands on Data Centre infrastructure with the requirements for high power and low latency connectivity.

About the report

The Premium Data Centre - 2012 finds that the high density provider is the fastest growing segment of the Data Centre segment, with more space coming on stream from both Carrier Neutral specialists and increasingly the Carrier Based segment – particularly as incumbent telecoms providers are changing their business models to cater for the demands of cloud computing and hosted services.

Furthermore Data Centre companies are responding to the increased demand for power and cooling by developing 3 models to cater for high density IT applications -

- By providing supplementary cooling within an existing facility, typically through using Rittal or APC racks with water based cooling
- By equipping a high-density zone within a recent facility which is aimed at high density and low delay connectivity to specific users such as the financial community
- By building a new high density supported Premium Data Centre from scratch

The impact of the new Premium Data Centre is relatively new, with most 20 kWper rack supporting facilities less than 3 years old. Based on the 82 facilities surveyed across the 15 European countries by TCL the majority of sites are to be found in France, followed by Germany, the Netherlands and the UK.

The Netherlands and Luxembourg in particular have a large amount of Premium Data Centre stock – as a proportion of total Data Centre stock – when compared with other European countries.

TCL maps future revenue and raised floor capacity growth for the Premium Data Centre across the 15 European countries and finds that the proportion of Premium Data Centre stock is set to grow from 28% (end of 2012) to 40% (end of 2016) over the next 5 year period.

Selected extracts from the TCL Premium Data Centre – 2012 report

i) The changing definition of a Premium Data Centre

The TCL report finds that the definition of a Premium Data Centre is changing over time, as users are coming to expect a range of services to be provided, including a commitment to sustainability and the use of green energy sources as well as a high level of resilience and service availability. TCL has indentified some of the new characteristics of the Premium Data Centre below –

From the TCL survey the Premium Data Centre typically has the following 7 key elements which include the following -

1. **Mains Power** - Highly redundant separate mains power feeds, where possible from separate utility providers, with N+1 (one feed plus one extra) for redundancy of power.
2. **UPS redundancy** - Separate UPS A+B feeds with N+1 (one feed plus one extra) or 2N (double the number of feeds needed) UPS feeds.
3. **Back up diesel supply** – typically with at least 2 days supply or more – with diesel generators also typically in a N+1 (one feed plus one extra) configuration.

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4. **Cooling systems** - Cooling systems in a 2N configuration (double the number needed) or a N+1 (main feed plus one extra) configuration.
5. **Internal configuration** – Internal configuration aspects include free cooling (using external air to chill the Data Centre) and hot and cold aisle separation now in commonplace use.
6. **Internet Exchange connectivity** – with direct Internet Exchange connectivity within the Data Centre facility offered with low latency (by both the Carrier Neutral and Carrier Based segments) – and a range of telecoms networks (by the Carrier Neutral Data Centre provider).
7. **Certification of Data Centre facilities as being so-called “Green IT”** – Certification can include Green IT certification (for example using the European code of conduct) and British Standard (ISO 27001) certification.

ii) Details of mapping the 82 Premium Data Centre facilities in the report

The Premium Data Centre – 2012 report uses information from the TCL database of 82 Premium Data Centres across the 15 European countries. When aggregated TCL is able to provide the following averages -

Summary Box – A summary of the key findings from the TCL Premium Data Centre – 2012 report

- Premium Data Centres surveyed: 82
- Total Premium Data Centre raised floor space: 637,190 square metres
- Average space per Premium Data Centre: 7,952 square metres
- Average power per Premium Data Centre: 10 MW
- Average power per square metre: 2.7 kW
- Standard average price per rack: 1,292 Euro per month
- Standard power per rack: 6.6 kW
- Optional power per rack: 20.3 kW
- Average price per square metre: 517 Euro per month

iii) The 17 key trends impacting the Premium Data Centre in Europe highlighted

Finally, an extract from the Executive Summary of the report identifying the 17 key trends for the Premium Data Centre across the 15 European countries highlighted in the TCL Premium Data Centre - 2012 report -

1. The growth in the adoption of High Density IT applications continues - There has been a continued growth in the use of high density IT applications associated with the introduction of the blade server. As a result the amount of kW per rack or kW per square metre of Data Centre space required has increased and is forecast to continue to increase over the next 5-year period from the end of 2011 to the end of 2016.

2. The adoption of a Flexible Data Centre space is key to new developments - The Premium Data Centre – which for the purposes of this report is defined as being able to cater for rack space power of up to 20 kW – has been created to provide a flexible response to a wide range of customer needs which include high density IT applications with low latency requirements. New Data Centres are being created with a range of Tier grades to cater for both standard power and high power IT applications.

3. IT power requirements in the Data Centre continue to increase over time - Although the average power requirement from an enterprise customer appears to be increasing only moderately over time – from 2 kW to 3 kW per square metre – the power requirement from companies that house high density IT in a Data Centre is becoming far larger, and it is this requirement that the Premium Data Centre seeks to satisfy.

4. Carrier Neutral Data Centres are now catering for more power - Traditional third party Carrier Neutral Data Centres have been built to cater for housing and co location services and have usually required limited amounts of power per rack or per square metre – with most facilities built in the early 2000's having a standard power per square metre of around 1 kW. Data Centres are now being equipped to deal with power per square metre of 2 kW.

5. Carrier Based Data Centre facilities are also changing their role - This trend is most pronounced with the Carrier Based Data Centre, which typically has lower power per square metre than for the Data Centre industry average – and have been used to cater for co

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location or telecoms services with low power requirements. This is mainly due to the Carrier Based Data Centre traditionally being used as a connection point for IP traffic rather than for housing or hosting of IT applications. But the advent of hosted or managed services and Cloud Computing means that Carrier Based Data Centres are being used to support higher power IT applications.

6. Key changes in the Data Centre mean more flexibility - The impact of the introduction of the blade server coupled with new requirements for low latency connectivity - associated with algorithmic trading for the financial services community – has meant a need for new

Data Centre infrastructure which can accommodate high density applications with low latency interconnections.

7. The highest power per rack in the modern Data Centre offered is now up to 40 kW - To cater for these requirements a range of new generation Carrier Neutral Data Centres are being constructed which can be used for a variety of applications, including power per rack of up to 20 kW – in some cases as high as 40 kW per rack – being offered as a standard service. The non-standard service offers power bundles per rack – from 7 kW per rack up to 20 kW per rack in a high density suite.

8. The Premium Data Centre now has to offer a wide range of services - The Premium Data Centre provider is offering a graduated range of services, with different types of bundles of power within one facility, which cater for high density IT and standard IT applications with different price levels. In some country markets, such as Luxembourg, Data Centre providers offer different Tiers of Data Centre (with different resilience options) across one facility.

9. New large campus-based Data Centre facilities are being introduced in selected country markets - The introduction of new large campus-style Data Centre facilities in a number of countries has now accelerated. Data Centre providers can now segment individual data halls to cater for the different grades of power and application that may be required, with specific halls being used for high density IT applications and other halls being used for lower density IT applications. Larger Data Centres are being established with varying specifications – with a single new Data Centre facility in Luxembourg for example having a Tier 2 grade to a claimed Tier 4 grade certification.

10. Cloud computing is driving Carrier Based Data Centre services - And the Carrier Based Data Centre segment is also seeing new Data Centre development as telecoms operators seek to build their presence in the Cloud Computing and hosting segments with new purpose-built facilities with higher power bundles and resilience. There has been a mini-boom in the number of incumbent telecoms providers – such as Swisscom, T-Systems and Portugal Telecom – constructing new purpose built large scale Data Centres to cater for their newly introduced cloud computing products.

11. Premium Data Centre space is growing as a percentage of total Data Centre space over time - The growth of the Premium Data Centre as a proportion of the total Data Centre space available in Europe is expected to increase over time, as new Data Centre facilities are being created with the flexibility to cater for a range of customer needs and power. Older facilities that are no longer fit for purpose may be either converted into higher grade Data Centres or decommissioned over time.

12. The cost of building a Premium Data Centre is also increasing over time - Additionally, there are only a limited number of site locations that are suitable for Premium Data Centres that have access to telecommunications networks and power in a number of established cities – which leads to competition for land and relatively high land purchase costs. However, selected new build Data Centre costs vary considerably by market, with average square metre build costs for new facilities ranging from 10,818 Euro per square metre (Equinix Paris 4) up to 22,353 Euro per square metre (Interxion London 2). It should be noted that development costs increase significantly when land purchase costs are included – so developed urban areas see the highest overall square metre build costs.

13. Geographical proximity of a Data Centre to its customer base is a key to success - In practice most customers prefer to use a Data Centre which is located physically close to their core site, rather than use a remote location. The Data Centres use typically require low latency interconnects to trading partners which means that physical distance between partners has to be minimized.

14. A consolidation of Data Centre providers in Europe is now taking place - The relatively high cost of building a Premium Data Centre means that there is a prospect of consolidation taking place among the existing Data Centre providers across Europe, favouring large-scale Data Centre companies with access to their own development funds. It is notable that TelecityGroup has purchased local Data Centre providers including IFL (Manchester, UK) and Data Electronics (Ireland) over the past 12 month period.

15. Existing Data Centre facilities do not discount their pricing – But conversely new Data Centre facilities do discount their pricing. Well-established Data Centre facilities are able to sustain price premiums based on an established network of customers and also through offering a range of value added connectivity options. To reduce risk providers prefer to build close to adjacent facilities and so provide a so-called campus environment. But for new Data Centre space being built in new markets the Data Centre provider typically has to offer promotional pricing in order to attract new customers and anchor tenants.

16. Modular “container” Data Centres are being provided which offer additional facilities at lower cost and time to build out - And in some country markets, selected Data Centre providers are opting for a modular solution and are providing relatively high density facilities within a series of containers as an add-on solution. The Data Centre modular container solution is able to provide a scalable add on solution without the need to entail the high fixed costs of building a new facility. Evoswitch (Netherlands) and COLT Telecom are currently using modular container-based facilities as supplementary services to their standard Data Centre infrastructure. The modular Data Centre provides a fast and low cost method of adding new space.

17. The Netherlands has the highest number of Premium Data Centre facilities in the 15 European Country Markets surveyed by TCL – In the TCL survey the Netherlands is followed by Switzerland and the UK. The relatively high amount of Premium Data Centre space in the Netherlands and Switzerland is a result of the boom in construction of new high density facilities in those countries by local providers. Both those countries have a high percentage of Premium Data Centre stock when compared with the overall Data Centre stock available. The figures are based on information available at the end of 2011 with in service Data Centre stock.