

Data center colocation: output and prices

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Classification of data center colocation

Industry classification:

- Part of NACE 6311 and ISIC 6311 (Data processing, hosting and related activities)
- Part of NAICS 518210 (Data processing, hosting and related activities)

Product classification:

- Part of CPA 631119 and CPC 83159 (Other hosting and IT infrastructure provisioning services)
- NAPCS 77107010304 (Colocation services)

Background of our research

Digital industries:

- ISIC/NACE/CPA 58.2 (Software publishing)
- ISIC/NACE/CPA 62 (Computer programming, consultancy and related activities)
- ISIC/NACE/CPA 63.1 (Data processing, hosting and related activities; web portals)

SPPI-wise, this is a challenging part of the economy, containing a wide range of different complex activities. Statistics Netherlands' current SPPI covers a limited share of these activities. We are working on an expansion of the coverage, giving priority to three activities that are relatively easy to grasp: online platform services, online advertisement and data center colocation.

Data center colocation

A data center is a building used to house IT equipment. Colocation is when external customers rent space in a data center to house their IT equipment.

Instead of placing their computer servers on their desks, more and more businesses choose to entrust them to an external data center and to work with them remotely.

This holds several benefits. Collective costs are lower due to economies of scale. But most importantly, data centers are designed to ensure that the IT equipment never fails to function. Buildings are heavily guarded and all critical infrastructure, such as the power supply and the cooling system, is redundantly installed, such that the risk of a disruption is near-zero.



Data center colocation



Data centers in the Netherlands

- Only around 25 businesses
- Approximately 15-30% of turnover in NACE 63
- Several hyperscale data centers of American tech companies



Cloud versus colocation

Colocation should not be confused with cloud. Cloud is when customers rent IT equipment to work with remotely.

The confusion may arise because the rented IT equipment is often housed in a data center. Cloud service providers rent space in data centers to store the IT equipment they rent to their customers.

Data centers may offer cloud services themselves, as a secondary activity. But usually, cloud service providers are a separate group of businesses.

Data center colocation: output

Data center colocation turnover mostly consists of the monthly bills that customers pay.

Bills consist of:

- A fee for the space rental
- A fee for the direct energy usage of the customer's IT equipment
- A fee for the cable rental (the customer's IT equipment needs to be connected to the outside world through one or more cables, "patching")

Data center colocation: output

Apart from the monthly bills, 5-10% of colocation turnover stems from set-up services: the one-off installation service that has to be provided to a customer when she first rents a space.

Data usage of the customer's IT equipment is usually not billed by the data center, but by internet providers (NACE 61). The data center only acts as an intermediary to ensure the customer can make use of the telecommunication services offered by internet providers.

Data center colocation: output

Challenges when measuring data center colocation turnover:

- Eliminating single-tenant data centers
- Transfer prices of hyperscale data centers (especially in the Netherlands)
- Lack of a separate industry class for data center colocation
- Discrepancy between turnover on the business level and turnover on the activity level

Data center colocation: prices

Main quality aspects of the colocation service (the monthly bill part):

- Location: the more “connectivity”, the higher the price
- Space: measured in terms of rack units and full racks
- Power: measured in terms of kW
- Energy usage: measured in terms of kWh
- Green energy or grey energy
- Patching: number of cables and type of cables

Even if all of the aspects above are the same, customer A may pay a somewhat different monthly price than customer B:

- Bargaining power
- Age of the contract

Data center colocation: prices

Data centers offer various small colocation services. For example, a colocation service in Rotterdam consisting of 5 rack units, 4 kW, 2000 kWh and 1 fiber cable. Such small services are purchased by many different customers.

Data centers usually also have a handful of large customers. Each of them purchases a different fully customized colocation service, consisting of a large number of racks. About 40-50% of turnover stems from such customers.

Most customers that rent space keep on doing that for many years, if not forever. Of course, the customer may scale up or down at some point. And of course, prices will be adjusted every now and then.

Data center colocation: prices

What method to use for the SPPI?

We have considered a unit value approach: collect the overall average price per kW, the overall average price per cable and the overall average turnover per kWh.

However, this felt risky, because some data centers will struggle to divide all turnover over components in the right way.

Instead, we have chosen a combination of two methods:

- Direct use of repeated services for non-customized colocation services
- Contract pricing for customized colocation services

Data center colocation: prices

Non-customized services

We ask the respondent to describe several typical colocation services that many customers purchase and to estimate the average price that is currently charged across all current customers.

Colocation service	Renting out rack space
Customer	Average current customer
Size	47U Full rack
Location	Amsterdam South-East
Patching	1x UTP cable
Power and energy	Power: 3 kW Calculation method: <ul style="list-style-type: none"><input type="checkbox"/> Recalculation, consumption of ... kWh per month<input type="checkbox"/> Fixed contract price with an agreed limit of ... kWh per month, consumption of ... kWh per month<input type="checkbox"/> Fixed contract price without agreed limit
Type of energy	<input type="checkbox"/> Grey power <input type="checkbox"/> Green power
Contract duration	12 months
Price 2022Q4 (November):	€ 250 per month excluding VAT



Data center colocation: prices

Customized services

We ask the respondent to describe several contracts and to submit the price that is charged to the customer, given a fictitious amount of energy usage.

Colocation service	Private Suite or private corridor customized
Customer	External customer with anonymous customer number 12345
Location	Eindhoven
Patching	2x Fiber Cable
Power and fictitious amount of energy consumption	Power: 48 kW Calculation method: <ul style="list-style-type: none"><input type="checkbox"/> Recalculation, consumption of ... kWh per month<input type="checkbox"/> Fixed contract price with an agreed limit of ... kWh per month, consumption of ... kWh per month<input type="checkbox"/> Fixed contract price without agreed limit
Type of power	<ul style="list-style-type: none"><input type="checkbox"/> Grey power<input type="checkbox"/> Green power
Price 2022Q4 (November):	€ 5.000 per month excluding VAT

Data center colocation: prices

Additionally, it may be necessary to track prices of the set-up services. Direct use of repeated services is an appropriate method for the set-up services.



Data center colocation: prices

Points of attention:

- Add-ons, like office space rental, should be excluded from the price
- Non-customized services: respondents may accidentally submit the quote for new customers instead of the average price across all current customers
- Non-customized services: it may be hard for respondents to accurately estimate the average price across all current customers
- Customized services: the data center market is growing consistently, so over time new contracts should be added to the sample
- Customized services: it may be confusing for respondents to submit a fictitious price for a real contract
- Customized services: a large customer may scale up or scale down at some point, implying that the service we follow changes
 - Solution: quality adjustment based on the change in kW

Any questions?

