INVEST IN

North Amsterdam Data Center Campus

Economic Impact Study

Digital Gateway to Europe

North Amsterdam Data Center Campus

Economic Impact Study

Digital
Gateway to
Europe

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FOREWORD

JAAP BOND
Vice governor Economic Affairs
of Province of North-Holland

Data Center developments in the region North of Amsterdam

In 2013, Microsoft announced its investment in a 37-ha hyperscale data center on AgriportA7, in the Hollands Kroon municipality. Microsoft, AgriportA7, the Development Agency Noord-Holland Noord, AgriportA7, Hollands Kroon, the Province of Noord-Holland and the Netherlands Foreign Investment Agency have worked closely together on this development. Recently, Google announced the acquisition of 71-ha land for possible future data center expansion. For the region North of Amsterdam, this is confirmation of its great investment climate and an opportunity to strengthen the regional economy.

Space, energy and close to Amsterdam

It is no wonder that the global players in the fields of internet, software, and data storage are discovering the region north of Amsterdam and the North Amsterdam Campus in particular. The available space, sustainable energy and the short distance to Amsterdam is enabling the future growth of the data center industry in the Netherlands. Moreover, the regional government has a proactive policy towards new investors to ensure a fast and efficient site selection and construction process.

A significant economic impact

As this report shows, recent developments will have a significant economic impact both for the region and for the municipality of Hollands Kroon. Over the next few years, we expect a significant contribution to the regional GDP and the creation of new jobs. The data center developments will strengthen the regional economy as whole and its economic ties with the Amsterdam Metropolitan Area in particular.

Room for growth

The region will keep investing in power, connectivity and infrastructure. We also create room for growth for future investments. Interested in the opportunities? Take a look at www.investinnhn.com

This report is a co-production of the Digital Gateway to Europe, the Hollands Kroon municipality, AgriportA7 and the Development Agency Noord-Holland Noord.
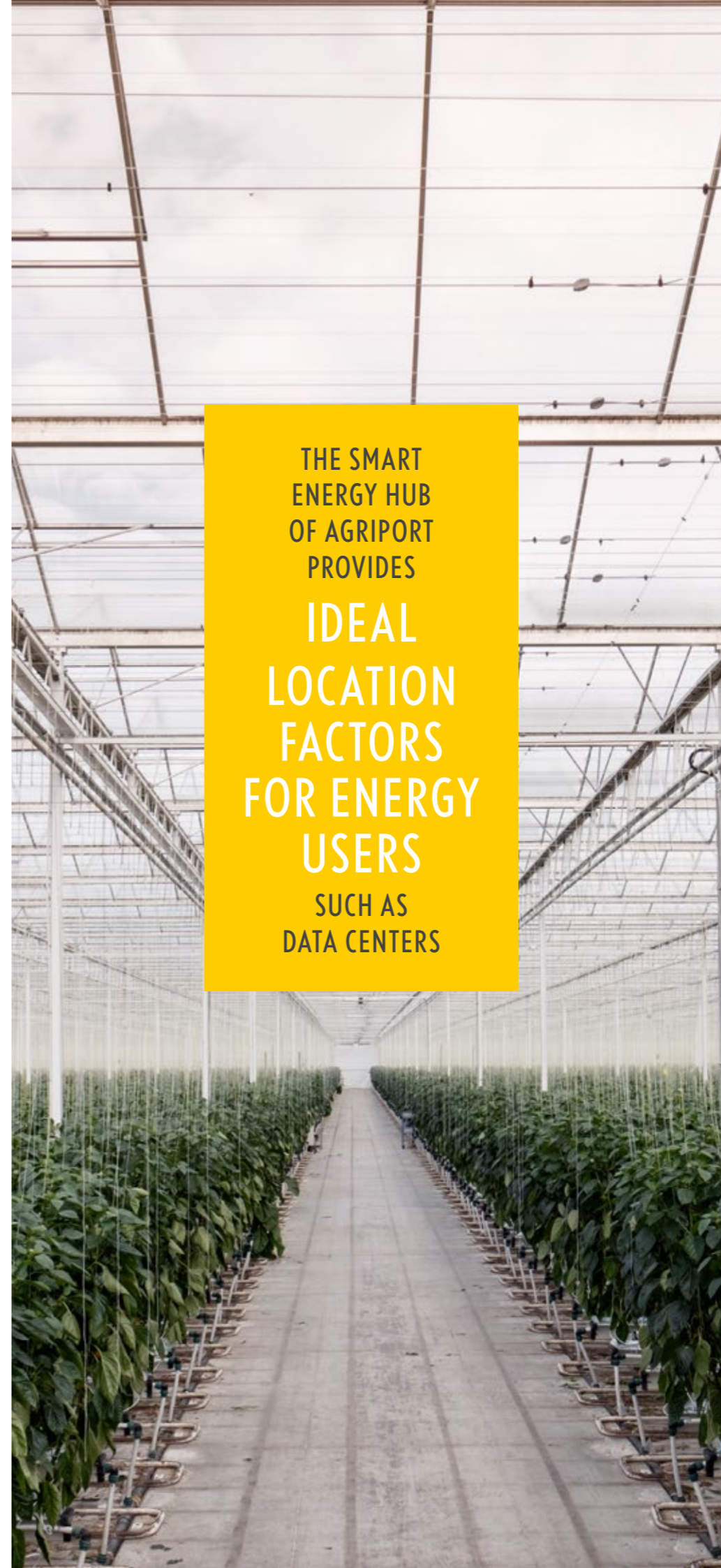
THE SMART ENERGY HUB OF AGRIPORT PROVIDES

IDEAL LOCATION FACTORS FOR ENERGY USERS

SUCH AS DATA CENTERS

"The Province of Noord-Holland is front runner in the digital economy of the Netherlands. The recent data center developments in the region North of Amsterdam further strengthens this position and will give a boost to the regional economy. Moreover, it is a result of intensive collaboration between public and private partners on local, regional and national level."

www.investinnhn.com

INTRODUCING THE REGION NORTH OF AMSTERDAM

The region North of Amsterdam is the northern part of the Dutch province of Noord-Holland. The main cities are Alkmaar, Hoorn and Den Helder. The region is renowned around the world for its innovative companies in the Energy, Water and Agrifood sectors. In addition, the region is popular among tourists because of the typical Dutch landscape, with its windmills, dykes, polders, historical and modern villages, towns and cities.

Global Challenges, Local Solutions

In the coming decades, the growing global population and increasing prosperity will increase even more the global demand for energy, food, and water. The region north of Amsterdam is contributing solutions aimed at solving these global challenges, and its ambition is to continue to develop this strength.

North Amsterdam Campus

The region North of Amsterdam is investing in the development of infrastructure for hyperscale data centers. This report introduces the 'North Amsterdam Campus'. This data center campus is located at the AgriportA7 site; it is a campus where hyperscales, data centers, service partners and data center specialists from the IT, energy, engineering sectors and research institutes form a 'data center ecosystem'.

Regional economic impact

The economic impact study in this report focuses on the establishment of the North Amsterdam Campus in the Agriport A7 area. Work at the campus will have the most economic impact on its immediate surroundings, the Agriport A7 business area. The North Amsterdam Campus will bring global players in the field of Internet, software and data storage to the Agriport A7 business park, which is a 30-minute drive from the centre of Amsterdam.

However, the impact of the multiple scenarios envisaged in this study, apply to the wider region north of Amsterdam; the whole region will benefit from this economic activity. Moreover, the Netherlands as a whole will profit from this data center campus located in the region north of Amsterdam; it means a stronger digital country. Data centers are, together with network connectivity, the backbone of the digital economy.

DATA CENTERS ARE TOGETHER WITH NETWORK CONNECTIVITY **THE BACKBONE OF THE DIGITAL ECONOMY**
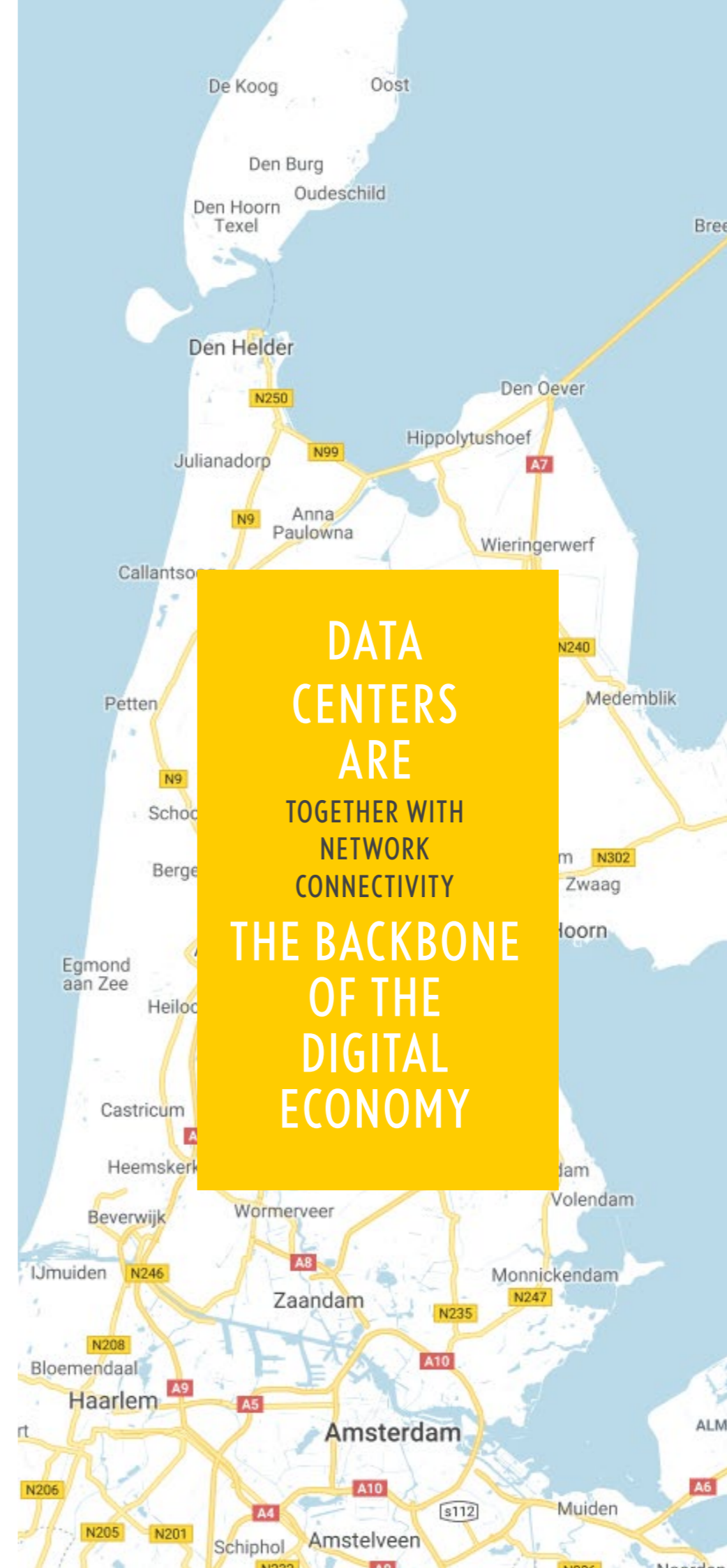
THIJS PENNINK
CEO, Development Agency Noord-Holland Noord

"As Development Agency NHN we continuous work on the investment climate and collaboration in the region. For the region North of Amsterdam, the recent data center development are a confirmation of its great investment climate and an opportunity to strengthen the regional economy. The data center developments will strengthen our ties with the Amsterdam region and the Netherlands."

NHN is the Development Agency for the region north of Amsterdam. It is a public organisation aimed at encouraging companies to invest in the region and assisting them to do so.

THE NORTH AMSTERDAM CAMPUS

Background Agriport A7

Only 40 km from the heart of Amsterdam, alongside the A7 motorway, you can find the Wieringermeer area, home to the area development project Agriport A7. The development of Agriport A7 started in 2006, focused on large scale greenhouses. Massive glasshouses of more than 100 hectares each were set up to produce tasty, safe and environmentally friendly grown tomatoes and bell peppers.

In less than 15 years, Agriport A7 has grown into a 1000 ha project location, focused on agriculture, logistics, energy & data centers. Over 600 million Euro has been invested in horticulture and energy infrastructure in Agriport A7 alone. More than 400 ha of glass houses have been built since the start in 2006. The smallest plots start at 50 acres.

Due to its location close to Amsterdam, among other things, Agriport A7 is perfectly positioned to facilitate the large scale and hyperscale data centers of Amsterdam. Which is why Microsoft has bought 37 ha to develop its data centers. Another 70 hectares has been allocated to the construction of more data centers in the Agriport area.

The secret of success is flexibility; Agriport didn't came about by a Masterplan, it started from the concept of large-scale greenhouses, which gave flexibility towards the market. This resulted in their development of their own powerplant and geothermal supply. This all came about through a close and intensive dialog, and in anticipation of the upcoming Dutch environmental law.

North of Amsterdam

Agriport A7 is very close to Amsterdam (30-40 min drive) and to Amsterdam Schiphol Airport (40-50 min), the fourth busiest airport in Europe with over 322 destinations and almost 70 million passengers every year.
The other largest cities of the Netherlands, The Hague, Rotterdam and Utrecht, are all within 1,5 hour drive from Agriport A7.
Almost all important players in the international digital economy are present in the Amsterdam region, with both equipment and head offices. Major players of the Dutch data center industry are present in the Amsterdam area, including data center providers such as Equinix, Digital Realty, Global Switch and Interxion. Suppliers, designers and builders that surround the industry are present in the Netherlands as well, such as Unica, ICTroom, Minkels, Stulz, Huawei, Deerns & Socomec.

AMSTERDAM METRO REGION STATS

47 multi-tenant data centers (>100 m²)

53 single-tenants data centers (>100 m²)

215K m² net surface (data floor)

The Amsterdam colocation market is one of the most developed, with an average growth in take-up of 18% in the last 7 years and over 40 MW of new supply in 2017.

Amsterdam campus
1 South-East Amsterdam
2 Science Park
3 Schiphol
4 West Amsterdam
5 North Amsterdam
6 Almere

65KM

45 min — driving time to Schiphol Airport

0.23 ms — latency to AMS-IX internet exchange

150 kV — private energy supply of Agriport

2500 acres — size of Agriport business & high tech campus

I n Amsterdam, as well as in other major data hubs in the world, three factors could potentially limit room for growth of data centers: space, power & connectivity. The North Amsterdam Campus has large empty plots available, plenty of MW's and has a latency of .23 ms to the AMS-IX.

Space

In the immediate surroundings of Amsterdam, it is getting more and more difficult - and expensive - to obtain space. The North of Amsterdam region has large plots available, up to 150 hectares (375 acres); this provides tremendous scalability potential. The plots are rectangular and adaptable; to allow efficient building and site layout design. All of this combined with sharp prices.

Power

It takes two years to build a data center; it takes five to seven years to build a power substation and it takes up to 10 to 15 years to build high voltage networks. Power is key when it comes to growth.

EUROPE'S MOST RELIABLE POWER GRID, WITH A SECURITY OF SUPPLY OF 99.9943% OVER THE PAST FIVE YEARS

"AGRIPORT A7 HAS FIVE DIVERSELY ROUTED FIBER LINES TO THE AMS-IX, AT RELATIVELY LOW COST"

Energy prices make up a big part of the expenses, and are therefore very important. In the Netherlands, industrial electricity prices are the lowest among tier-1 European data center locations.
At Agriport there are connections to three different power grids:

TenneT
The national grid operator that owns and operates the high voltage grids. TenneT has started the construction of a new 480 MW substation in 2017 in the center of Agriport A7.

Liander
Owns and operates the mid- and low voltage grids in the region. Liander operates a 3 KV and 10 kV grid at Agriport.

ECW (Energy Combination Wieringermeer)
A regional private grid operator that operates a 150-20 kV substation as well as a 20 kV grid throughout Agriport A7. Because ECW is connected to the national grid at a 150 kV level, the transportation costs for the connected companies at the ECW grid are substantially lower. This leads to lower power costs. And, due to the connection to the national grid, the clients of ECW can independently make deals on the national power market.

Furthermore, ECW installed a smart grid tool (EWEB). With this web based tool, participants can trade power 'within the fence' and optimize the peak demand of power. This leads to a significant reduction of transportation costs, which are based on peak demand.

Connectivity

The Netherlands is the most connected country in the world, regarding cross- border flows of trade capital, information and people, according to the DHL Global Connectedness Index of 2016.

If we look at the EU's Digital Economy and Society Index, we see that the Netherlands is among the top-4 ranking countries in the EU. The UK (6th place), Germany (11) and France (16) score much lower.

The Netherlands has direct access to several submarine communication cable systems delivering low-latency links to other European nations, North America and beyond. 11 out of the 15 transatlantic sea cables connect directly to The Netherlands.

The Netherlands has a variety of underground and undersea super-high-speed (low-latency) cable connections with the rest of Europe, North America, and the rest of the world.

Fiber carriers at Agriport A7
Agriport A7 has three diversely routed fibre lines which directly connect to AMS-IX, one of the worlds' largest internet exchanges, at affordable rates. These three fiber carriers are:

· KPN, a former state owned company
· Eurofiber, the largest Dutch fiber provider, delivers triversity of dark fiber from Agriport to Amsterdam
· ReliNed, major nationwide dark fiber provider

There is a strong presence of providers across the entire value chain. Leading fiber providers such as Eurofiber, EUNetworks and Relined are based in the Netherlands and many IP carriers such as NTT, Cogent, Level3, GTT, Hibernia and Telia Sonera are based here.

Next to the AMS-IX, one of the world's largest internet exchanges with over 815 members and 70+ carriers, the Netherlands houses the internet exchanges NL-IX (7) and Equinix IBX (8).

JEANINE VAN DER VLIST
Managing Director Eurofiber Netherlands

"The northern part of the Netherlands has an excellent position to become a leading Dutch data center hub, for multinationals and local businesses.
Eurofiber has delivered excellent connectivity in the region, connected directly to other important data hubs and to the Amsterdam internet hub."

Eurofiber Netherlands is a fast growing supplier of high-quality digital infrastructre. With its fiber optic network and network solutions, Eurofiber provides businesses, governments and non-profits a future-proof and open infrastructure.

COMPARING DISTANCES AROUND THE GLOBE

As the Netherlands is such a small country, everything is close by. To show exactly how the North Amsterdam campus is positioned relative to the Amsterdam city center, we have compared four major data center districs from all around the globe. The Amsterdam campus region, from North Amsterdam to Schiphol, is compared to Hong Kong, Washington DC and London. All four circles are the same size; to help compare the distances.

NEW YORK
22 MILJOEN

LOS ANGELES
17 MILJOEN

LONDON
13 MILJOEN

PARIS
12 MILJOEN

RANDSTAD
8 MILJOEN

RUHRGEBIET
11 MILJOEN

CHICAGO
9 MILJOEN

NEDERLAND
16 MILJOEN

SAN FRANCISCO
7 MILJOEN

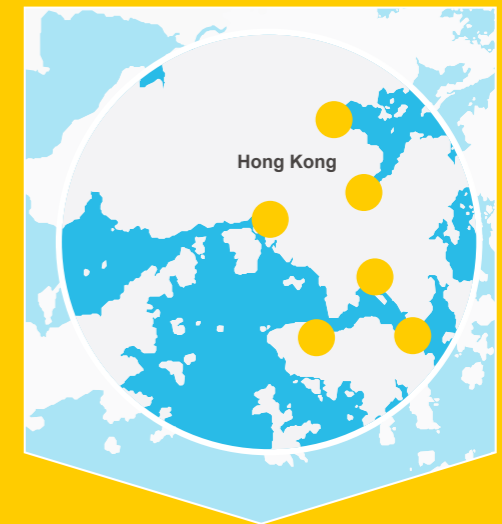Source: brilliantmaps.com/empty-netherlands

AMSTERDAM

137 DATA CENTERS

13.300 POPULATION PER SQ MI

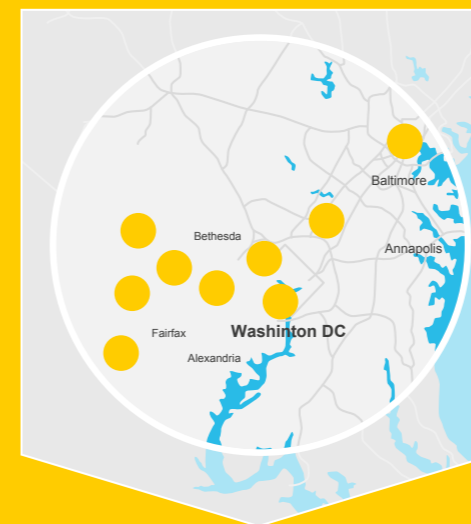DENSITY OF MUNICIPALITY

HONG KONG

73 DATA CENTERS

17.348 POPULATION PER M²

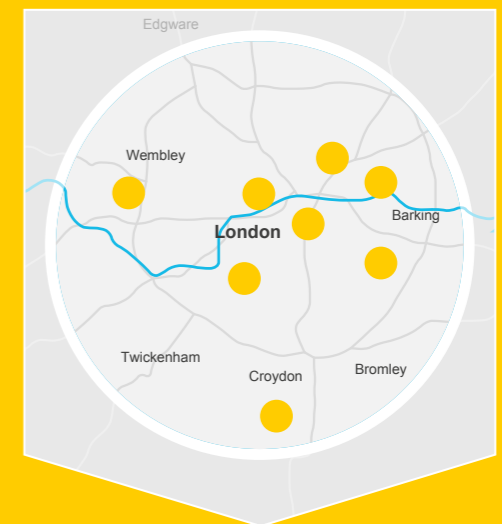DENSITY OF MUNICIPALITY

WASHINGTON DC

135 DATA CENTERS

11.400 POPULATION PER SQ MI

DENSITY OF MUNICIPALITY

LONDON

197 DATA CENTERS

14.500 POPULATION PER SQ MI

DENSITY OF MUNICIPALITY

COLOCATION CAMPUS

Data driven

Data can be used to make better decisions. Data improves customer experience. Data insights make it possible to anticipate emerging customer needs and accelerate product innovation. It is giving business decision makers the power to explore data independently, even if they are working with big or disparate, interconnected data sources. New technologies as Artificial Intelligence, IoT, Big Data tech are ever strengthening the endless power of data.

Over the course of the past year, we have witnessed more data generated than in the cumulative history of mankind. A great deal of this data was generated in Europe, as our economy has become fully data-driven.

Data has already gained a central role in our daily lives, and new technologies such as AI, big data analytics, robotics and IoT cause huge disruptions across all industries, leading to new breakthroughs and exponential growth.
All this data has to go through data centers: since everything that happens online, happens in a data center.

No wonder that, in accordance with this exponential use of the internet, the data center sector has grown tremendously. In the Netherlands – the second largest data center hub in Europe – we have observed a steady double digit growth over the past years. Commercial, multi-tenant data centers have spread across the country and have become a vital part of the Dutch digital infrastructure.

2018 — This is what happens in an Internet Minute

Created by:
@LoriLewis
@OfficiallyChadd

Benefits of regional data centers

Throughout the Netherlands, regional data centers provide a platform for organizations to compute, run and store their services and data. Nowadays, organizations rely heavily on online services, which is why a regional data center can be found in every province in the Netherlands: everywhere you go in the Netherlands, a professional and state of art data center is always near.

With excellent connectivity and only a few milliseconds apart from each other, all these regional data centers are able to serve a mix of regional, national and, usually, international customers.
The customers are enterprises, cloud operators and software providers. Data centers have direct and indirect effects on the local economy, with multi-tenant data centers already contributing over a billion euros to the economy.

Highly developed Dutch market

All the large data center service providers can be found in the Netherlands, including the major established carrier-neutral colocation providers. Major multinationals like Microsoft, Google, IBM, and Amazon have their data centers in the Netherlands, primarily in the Amsterdam region. Furthermore, practically all the large carriers have a location here in the Netherlands.

GROWING DATA DEMAND — We are only just at the beginning —

90%
OF THE WORLD'S DATA WAS CREATED IN THE LAST
2 YEARS

Volume in Exabytes

Sensors & Devices
Social media
VoIP
Enterprise Data

2010 — 2017 — 2020

Source: Promptcloud, 2017
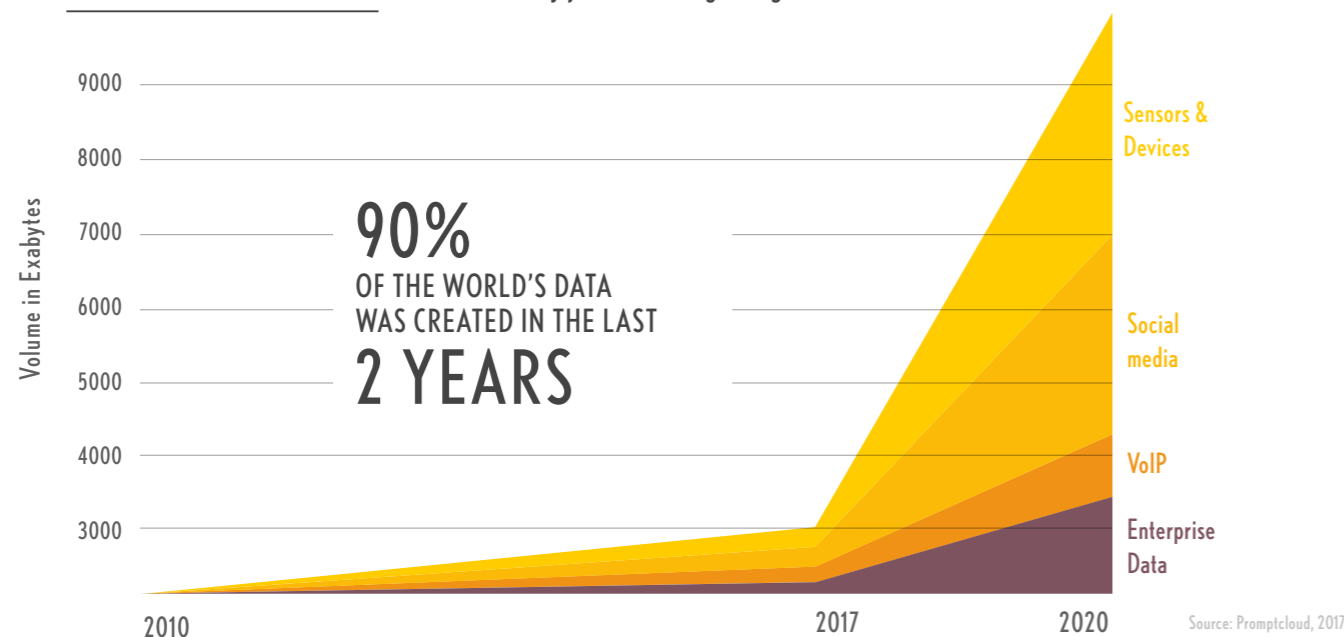
FRANS FELDBERG
Professor Data-Driven Business Innovation at VU Amsterdam & co-founder of DataScience Alkmaar

"Securing and grounding knowledge about the possibilities of (big) data, analytics and data science for business innovation in our region is an important prerequisite for regional economic growth and development."

DataScience Alkmaar is a regional knowledge & innovation center in the filed of data science, business analytics and big data. Founded by VU Amsterdam, the municipality of Alkmaar and the local business. It enables SME's to get access to big data.

AROUND DATA CENTERS, SPECIAL MARKETPLACES ARISE

THAT IS WHERE OTHER DIGITAL COMPANIES WANT TO BE

Advantages for data center campuses

In Amsterdam, and also in the other 10 major data hubs around the globe, we see that data centers grow in campuses, close to each other. There are some specific reasons for that. Data centers benefit from the close proximity to the two hyperscale data centers and the ecosystem of fiber, IP-carriers, exchanges, cloud companies and content delivery networks that surrounds it.

Data centers obviously look for local opportunities. They often expect to find business with local businesses, healthcare or education, but have grown as a result of the business from local IT service providers, hosters and (cloud) software vendors.
Regional data centers do well when they are located at digital innovation hotspots, where all kinds of digital players and startups can interconnect.

The region North of Amsterdam is investing in the development of infrastructure for data centers on a large scale. Because of the region's close proximity to the capital city and the rapid connections, the latency is nearly identical to that in Amsterdam, and the region offers additional advantages as well: a unique combination with other economic functions means that there is a reliable supply of inexpensive sustainable electricity.
In addition, North of Amsterdam offers large, affordable plots for building.

This means a very short time to the market, while at the same time being able to create a scalable solution for their European ambitions.

ROOM FOR GROWTH

POWER	CONNECTIVITY	FLEXIBLE
Reliable connections to three different power grids, plenty of energy available	Different dark fiber paths to Amsterdam, latency <0.3 ms	Fast-paced and flexible processes due to strong ties with local municipalities

THEO MESKERS
Elderman Economic Affairs at Hollands Kroon

"The recent developments of the hyperscale data centers in our municipality are the result of our proactive attitude towards new investors. The data centers benefit from our strong agriculture and energy position. The investments will bring more labor and will have positive effects on our community, for example in housing and public facilities."

Hollands Kroon is a Dutch municipality located in the region North of Amsterdam, in the province of Noord-Holland. The North Amsterdam campus is located in this municipality.

HYPERSCALE CAMPUS

The Agriport A7 area has great potential for the establishment of a hyperscale campus, next to a colocation campus. Microsoft, one of the largest tech comapnies in the world selected Agriport A7 in 2013 as their preferred location for one of Europe's largest data centers. And other large tech companies are showing interest as well.

Microsoft

Microsoft selected Agriport A7 as the location for its new data center, and in 2013 they purchased a 370,000 m2 site at Agriport. In 2015, the first phase of the data center became operational; the second phase in 2017. The third and fourth phases are currently under construction.
Some of the key differentiating factors that triggered Microsoft to select Agriport A7, where the robust power infrastructure, three different dark fiber paths to Amsterdam and Hamburg, Agriport's ability to deal with hyperscale and the availability of large plots in the vicinity of AMS-IX, Amsterdam & Schiphol Airport.

Experience

The experience that North of Amsterdam has obtained while working together with large hyperscale companies, is the complexity and the length of the preparation process. The establishing of a large, international hyperscale or colocation party takes a long time and requires a lot of flexibility from all stakeholders.

One of the factors of success of Agriport A7, and of the region North of Amsterdam in general, is the pace in which the different stakeholders operate; there is a clear ambition and a supportive team of professionals that facilitates the process of acquiring the right permits. The Development Agency NHN, Agriport A7, the municipality of Hollands Kroon, the Province of Noord-Holland and the Netherlands Foreign Investment Agency are all working closely together on this.

By working with international, large firms such as Microsoft, the region North of Amsterdam, together with Agriport A7, has shown what the possibilities of the region are. There is a fast-paced and ambitious mentality; Agriport has started preparations to enlarge the development plan even further, to the west side of the A7 highway.
A helping factor is that the region has a relatively low number of domestic properties in the area. Large greenfield megaplots of up to 150 hectares (375 acres) provide tremendous potential scalability. So there is plenty of room to grow!

HYPERSCALE VS COLOCATION

The main difference between hyperscale data centers versus colocation data centers is traditionally the difference between a single-tenant and a multi-tenant data center. Hyperscale data centers have architectures that are designed to provide a single, massively scalable compute architecture. Co-location data centers have multiple clients, that could have different architecture and different systems.

> **"HYPERSCALES PREP THE ENTIRE BUSINESS LOCATION FOR TECH COMPANIES THAT DON'T HAVE THE NEGOTIATING CAPABILITIES BUT DO NEED ACCESS TO POWER AND HIGH SPEED AND VOLUME CONNECTIVITY"**

Hyperscalers attract

Hyperscale companies are in a race to scale fastest and become the largest. Factors acting as bottlenecks to the growth of hyperscale data center market include power failure and high amount of heat generation. A hyperscale data center selects a location that is able to provide the required volume and quality of connectivity, green power, and space. There are only a limited number of locations that can provide that.

Actually, with most new hyperscale developments, not all of these elements will be in place, but only the potential. If the power infrastructure is not in place yet, the hyperscale will make sure the energy infrastructure will be built.

It will also make sure that high speed and high volume network connectivity will become available at the location.

As a result, the hyperscale data center has prepped the entire business park for technology companies that do not have the same negotiating capabilities but do need access to power and high speed and volume connectivity. They benefit from the establishment of hyperscales and their power to scale.

It is not only the power infrastructure and connectivity they profit from, these companies in the direct neighbourhood also benefit from the construction skills that local builders have mastered during the construction of the hyperscaler.
And the effect is not limited to energy hungry technology companies, but also to other companies that have significant energy requirements, such as greenhouses, as we see in Agriport business park. While a combination of greenhouses and data centers on a business park may seem random to laymen, it actually makes a lot of sense, since they share similar energy requirements.

GUIDO SNIP
Director Sales & Marketing Relined Fiber Network

"The developments in Agriport turned the region into a digital hub: a strong and fine-grained infrastructure with many glass fiber possibilities emerged, suitable for SME's, governments & schools. This is a wonderful development for the region and for the country as a whole. Relined is proud to be a contributor of this."

Relined Fiber Network is the leading independent supplier of unused Dark Fibre capacity within existing public and private fibre optic networks in the Netherlands and Germany. Relined has a Dark Fibre infrastructure of over 10000 km of fibre optic infrastructure that covers the entire country.

EFFICIENCY AT AGRIPORT A7

JACK
KRANENBURG
COMMERCIAL
DIRECTOR
AGRIPORT A7

"THE WASTE PRODUCT
OF ONE INDUSTRY
PROCESS COULD BE
A VALUABLE ASSET
FOR THE NEXT"

Why is Agriport developing a circular ecosystem?

The secret behind the success of Agriport is synergy.
As a property development company, Agriport A7 BV focuses on large-scale enterprises and has attracted many different industries (greenhouses, logistics, storage & data centers).
The spirit of Agriport A7 is to connect all these large-scale industries in a smart way.

We aim towards a sustainable and self-sufficient cluster. Reducing the fragmentation by spatial clustering offers the opportunity to optimize the use of infrastructure and each others residual- and by products.

How are all these different industries working together?

The vast and affordable lands of Agriport in the proximity of Amsterdam offer a unique opportunity for a collaboration between greenhouses, sustainable electricity production from solar and wind, logistical service providers and data centers.

Our large scale horticulture businesses generate electricity as a by-product of heating the greenhouses. This electrical power production is equal to the power consumption of more than 200.000 households. Currently, the majority of this electricity is supplied back into the national grid. The high voltage power infrastructure (150 kV) needed to feed the power back into the grid can also be utilised to connect data centers. This not only reduces power losses, but it also

reduces the costs for transportation and the time to get a high voltage power connection.

Currently, almost a quarter of the total energy demand for heating of the greenhouses is supplied by sustainable geothermal heat installations. There is a district heating systems of insulated piping available in the service strip alongside the main roads.
The return water from the system still has a temperature of 35 °C and is used for heating of industrial buildings in the area.

The rain water from the roofs of industrial buildings is collected and used for irrigation in the greenhouses.
Logistics service providers are cooperating by sharing freight in order to optimize their loading profiles and reducing their costs. And so on..

**What role do data centers play in this ecosystem?**

In a data center, servers convert power into heat. With recent technological developments and the ongoing growth of power density in data centers, this heat can be 'harvested' to be used for heating of the neighbouring large scale greenhouses. We strongly believe that this smart cross-border cooperation has the potential to disconnect the Dutch horticultural sector in this region from the fossil gas grid. This results in a sustainable, reliable and cost-effective lifecycle of both data centers as healthy food production.

Apart from delivering waste heat, the data centers play another role in the energy infrastructure, due to their extensive use of electricity.

Since Agriport is part of the largest on-shore wind energy project in The Netherlands, there are various options to contract green, non-fossil, electrical power.

Nuon Vattenfall, the owner of this wind energy initiative around the North Amsterdam data center area, has announced an agreement to supply wind powered energy to the Microsoft data center in Agriport. The wind park will be constructed in 2018 and will produce 1,3 billion kWh wind power in 2019. With this ten-year deal, Microsoft receives 100% of the energy produced at the wind farm.

Synergy between data center energy run-off and agricultural production was the driving force between the establishment of Europe's largest hyperscale data center in Noord-Holland Noord.
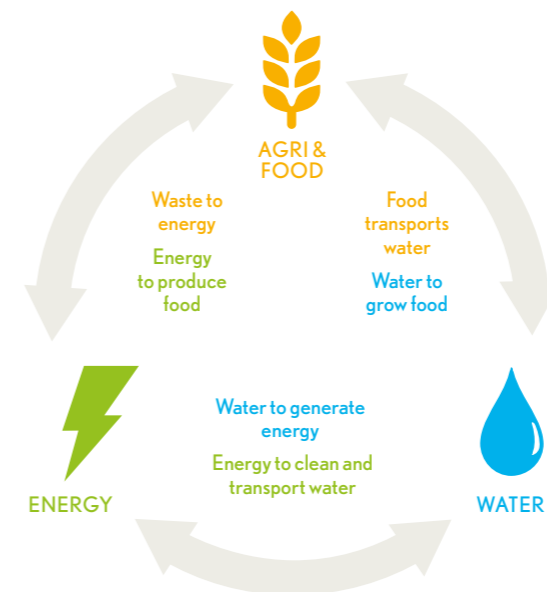
THEO GROOT
Elderman Spacial Planning of Municipality Hollands Kroon

"Our region is committed to ensure that the zoning plans and other procedures proceed smoothly, properly and in good consultation. We monitor the landscape planning, and stimulate the optimization of a circular economy."

Hollands Kroon is a Dutch municipality located in the region North of Amsterdam, in the province of Noord-Holland. The North Amsterdam campus is located in this municipality.

AGRI &
FOOD

Waste to energy

Energy to produce food

Food transports water

Water to grow food

Water to generate energy

Energy to clean and transport water

ENERGY

WATER

TOP REASONS WHY

THE NETHERLANDS

investinholland.com

PERFECT CONNECTIVITY

The Netherlands has multiple submarine cable connections, extensive fiber infrastructure and Europe's lowest average latency

PART OF EU SINGLE MARKET

Part of uniform EU-regulations such as GDPR; which makes the Netherlands ideal for distribution of data & digital service to other countries

FAVORABLE CLIMATE

With ideal conditions (no hurricane or earthquake threats) and an average temperature of 50 °F (10 °C), the Dutch climate is ideal for data centers

INTERNATIONAL MINDSET

Worldwide #1 in English Proficiency Index and home to 60% of IT companies of Forbes Global 2000, including Uber, Tesla, Elastic, Oracle and Netflix

RELIABLE & AMPLE ENERGY

One of Europe's most reliable and stable power supply; with low industrial energy prices when compared to other tier-1 data center locations

STABLE & LONG-TERM POLITICS

The Dutch have a pragmatic, long term orientation and are flexible to changes. The coalition system results in stable, predictable and moderate politics

EXCELLENT ECOSYSTEM

Builders, suppliers, designers; we are home to all major names in the industry, such as Unica, ICTroom, Deerns, Stulz, Huawei, Socomec & Minkels

SUPPORTED BY NETWORK

An active network of regional development agencies and the Netherlands Foreign Investment Agency results in rapid permit procedures and quick construction

DEVELOPMENT AGENCY NOORD-HOLLAND NOORD

Development Agency
Noord-Holland Noord
Bergerweg 200
1817 MN Alkmaar

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info@nhn.nl
www.nhn.nl
www.twitter.com/OBNHN

NHN is the Development Agency for the region north of Amsterdam. It is a public organisation aimed at encouraging companies to invest in the region and assisting them to do so. The shareholders are the local municipalities and the Province of Noord-Holland.

BJORN BORGERS
Sr. Project Manager
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bborgers@nhn.nl

Free and confidential services

We offer free and confidential services, provide site selection information, organise fact-finding visits, provide information about labour and tax incentives. We align public and private stakeholders to ensure a fast and efficient site selection process.

A strong track record

We have a strong track record in large-scale investments such as data centers, water, agrifood and energy. Companies we have worked with include Microsoft, Syngenta, Monsanto, Aktion, Taqa Energy and many more.

Your partner in the region

NHN has an extensive network of governmental organisations, knowledge institutes and business partners. We are the regional partner for investors in the region north of Amsterdam. NHN is a partner of the Netherlands Foreign Investment Agency (NFIA) and the Invest in Holland Network. Interested in joining us? Please contact Bjorn Borgers, tel. +31(0)6-33817919 or bborgers@nhn.nl.

www.nhn.nl and **www.investinnhn.com**

AGRIPORT A7

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www. agriporta7.nl

Agriport A7 is a new 1000 hectare campus just 30 minutes drive from the Amsterdam center and 40 minutes drive from Schiphol International Airport.

We started the development of the campus in 2006, focusing on high-tech, large scale greenhouses. It went sky rocketing. Over 400 hectares of glass houses have been newly build since the start of the development.

Agriport is all about infrastructure

The greenhouses require a full redundant, high voltage power infrastructure. And so does the 450 MW on shore wind energy project in the Agriport area. Since both the greenhouses as the windturbines mainly use the cables to export power, there is over 700 MW power connection available in the area.

Combine this with multiple diversely routed dark fiber connections to the AMS-IX, and you will find it not surprisingly that Agriport A7 is a great location for hyperscale Cloud Data centers.

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Driven by customers

Agriport A7 is a private owned development company which operates in close cooperation with local, regional and national government. We are driven to facilitate new companies in our state of the art campus.

Speed through partnerships

Our customers operate in a very dynamic environment. Time to market often is key. By aligning the permitting process between the design team of our customers and the authorities we have a very good track record on permitting time. And that's exactly what you need if you want to stay ahead of the pack.

Find out more about the unique features for data centers and greenhouses at Agriport by visiting our website. Or just meet up with one of our team members.

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MUNICIPALITY HOLLANDS KROON

REGION NORTH OF AMSTERDAM

Municipality of
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Hollands Kroon is a municipality in the Netherlands, located in a large farming region in the north. Its scenery is a snapshot of iconic Dutch images—dikes, flowers, windmills and a beautiful coastland. The city was formed in 2012 by the merger of four smaller cities that comprise a total of 22 different villages.

Hollands Kroon has radically reimagined what it means to work in municipal government. The city transformed its organizational structure completely and empowered employees to do their best work whenever, wherever, and however they want. The city is working to harness the power of fully digitized information to improve decision making. Having a more mobile work force means that the city can better deliver services to its citizens.

The environmental vision is an integral vision and a clear foundation for the policy of Hollands kroon and its implementation for the period up to 2030. Besides spatial planning, it also covers topics such as safety, economic and technological developments, the environment and accessibility. This should bring more coherence in the policy for the physical environment in order to be able to respond more flexible to the changes in society. This cohesion is particularly important at strategic level.

We explicitly appeal to the individual responsibility of citizens, companies and social organizations. This responsibility means that they themselves indicate in which way they ensure in a sustainable way that justice is done to important starting points such as maintaining the quality of the environment and guaranteeing the quality of life.

This initiative can be fulfilled by initiators, by already submitting to their proposals or plans themselves the contribution they make to maintaining or strengthening the spatial quality and / or quality of life and the possibilities of compensatory measures, to prevent or absorb negative effects.

Not the rules are leading but the initiative!

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For ages, the region North of Amsterdam has been a trendsetter in water-related sectors: from land reclamation and flood control to obtaining clean drinking water.

Wind, water, solar power, biogas - the region North of Amsterdam is developing into the premier center for new techny and business in the field of sustainable energy.

The region North of Amsterdam is one of the most versatile agri & food regions of the Netherlands. The production worth is estimated to be around 3 to 3.5 billion euros.

North of Amsterdam, the best Holland has to offer. Windmills, dykes, polders, beaches historical and modern villages and cities.

www.investinnhn.com

North
Amsterdam
Campus

—

Economic Impact Study

**Digital
Gateway to
Europe**

PREFACE

"The world's top tech companies choose **the Netherlands as the place to conquer Europe. They have very good reasons**"

Data centers have a lot to offer the Netherlands -and vice versa

In 2018, the digital infrastructure sector has changed from a supporting industry to a major sector itself. From providers of internet, connectivity, hosting and cloud services to hardware suppliers and building companies; all together they form a unique logistical chain. Moreover, with over 20% of foreign direct investments going to the Dutch cloud and data center industry, it has become the largest investment sector.

The Amsterdam region, the second largest data center hub in Europe, has seen rapid data center growth in the last years, with an average growth of 18% in take-up in the last 7 years. And this growth doesn't only happen in Amsterdam; especially regional data centers play an important role in the outsourcing of IT in recent years. A strong IT-infrastructure allows further growth to take place, offers flexibility and enables innovation.

The economic impact study in this report focuses on the establishment of the North Amsterdam Campus. which is only a 30 min drive from the heart of Amsterdam. The activity at the campus will have the most economic impact on its immediate surroundings. The establishment of the North Amsterdam Campus will attract global players in the field of Internet, software and data storage.

"THE PRESENCE OF DATA CENTERS SIGNALS THAT A COMMUNITY HAS MOVED INTO THE DIGITAL ECONOMY."

However, the impact of the multiple scenario's calculated in this study apply to the wider region North of Amsterdam, as the scenario's will show. Moreover, the Netherlands as a whole will profit from the North Amsterdam Campus, since the presence of data centers means a stronger digital country. Data centers are, together with network connectivity, the backbone of the digital economy. Without data centers, the whole internet would come to a standstill.

Best regards,

Stijn Grove

*Managing Director
Digital Gateway to Europe*

NORTH AMSTERDAM CAMPUS
ECONOMIC IMPACT STUDY

In the public debate, it is often claimed that data centers contribute with a relatively small economic impact and that this economic impact only occurs in IT-related industries. This understanding does not take into consideration the investment and construction phase, and, more importantly, effects for the broader supply chain and the catalytic effects resulting from a data center establishment.

There have been a lot of studies about the economic impact of data centers. Most of these studies focus on individual hyperscale data centers. Especially the economic impact of data centers from Facebook and Google are well documented, also within Europe.

The statistics that are found in these impact studies can help us to determine the current and potential economic impact of the North Amsterdam Campus.

Economic impact research
In an economic impact study, researchers try to quantify the impact of an activity or investment on a certain geography in terms of GDP contribution and employment. To understand the economic impact of data centers, we can look at GDP contribution, employment (economic impact), but we can also look at the contribution to taxes such as VAT income taxes, local taxes, and social contributions (fiscal impact).

The impact is typically a combination of data provided by the actors (data centers in this case) and modelling, using sectoral input/output tables from e.g. Eurostat or the Dutch Central Bureau of Statistics.

In the case of the North Amsterdam Campus, we will be looking at the domestic impact for the Netherlands as a whole, and indications for the impact on the close surroundings of Agriport, in the region North of Amsterdam.
We differentiate between three different types of economic effects:

- **Direct effects:** Includes the spending in the region. The key spending and employment areas are construction of the facilities, installation of equipment and cabling, and operational spending.

- **Indirect effects:** Indirect effects are effects in the value chain, spending that is done by suppliers to support the construction and operational activities and the employment that is supported as a result.

- **Induced effects:** Includes the spending of employees, who use their salaries for housing, spend it in retail and hospitality sectors, etc.

Previous research
There have been attempts internationally to quantify the indirect economic impact of a data center. In 2014, CBRE conducted an economic and fiscal impact study in a US$ 1 billion data center development in the US. This report, *Leasing a Data Center: U.S. Market Cost Comparison*, was published in 2014.
Over a 10-year period, including construction time, a $1 billion data center development, which might provide 30 to 50 jobs in the long term, would contribute about $200 million in taxes. This would compare to the fiscal contribution of a corporate headquarters with 1.700 jobs and a capital investment of $40 million.

ECONOMIC IMPACT OF MULTI-TENANT DATA CENTERS IN THE NETHERLANDS

	Direct	Indirect	Induced	Total
GDP contribution (in EUR Mln)	€585	€293	€67	€941
Employment (in FTE)	2300	1300	250*	3850
Taxes and social contributions (in EUR Mln)	€64	€15	€4	€83

Source: The economic impact of multi-tenant data centers in the Netherlands
Pb7 Research & Dutch Data Center Association, March 2017
Please note that Pb7 uses a more conservative methodology to estimate induced employment.

Dutch data center research
Regarding the Dutch data center market, there has been some research conducted by Pb7 as well, just as this economic impact study. This previous study was focused on the economic impact of multi-tenant data centers in the Netherlands. The table above shows the calculated research of that study, and here we provide a short summary of that research:

GDP - Looking at direct contribution, Dutch multi-tenant data centers contributed €462 million to the GDP in 2015. When taking into account additional revenues from colocation companies, it is estimated that they bring in an additional €123 million, bringing the total direct GDP contribution to € 585 million.

Employment - The study found that the Dutch multitenant data centers directly provide employment to 2300 people. About 41% of these people have an IT related title. The remaining work in facilities management, including security (20%), commercial roles (22%) and overhead and management (16%).

Taxes - To get the outcomes, data from the Dutch Central Bureau of Statistics (CBS) was extrapolated. For data centers, PB7 assumed that the paid taxes are comparable to the real estate market, around 7%. That means the total of tax and social contributions would amount to about EUR 64 million.

Scenarios at North Amsterdam Campus
Since we want to determine the potential of a hyperscale & data center campus in the region North of Amsterdam we have developed three growth scenarios that look at a ten-year period, from 2015 to 2025.

In the first scenario, Microsoft completes its hyperscale plans for the locations, but there are no data center projects from other investors.
In the second scenario, one or more new hyperscalers will invest in the short term. As a result, a hyperscale campus emerges that will bring new investments and jobs.
And in the third scenario, the hyperscale campus emerges as in scenario 2, and North Amsterdam Campus will also be successful in establishing a colocation campus as part of the Amsterdam Metro Region.

On the next page, the three different scenario's are further shown and evaluated.

SCENARIO 1

MICROSOFT FULLY OPERATIONAL

In this first scenario, Agriport's data center activities were effectively launched when Microsoft decided to locate hyperscale data center facilities in Middenmeer in 2013. The first and second phase of the data center became operational in 2015 and 2017. The third and fourth are under construction. Microsoft has in total acquired 37 hectares and has plans to expand the technical space to 112.000 m2 (1.2 million ft2) by 2021. The total investment is estimated at EUR 2 billion and by 2021 there whould be working around 380 FTEs in the data center. During the construction periods (7 years, from 2014 to 2020), 900 construction workers are on site on average.

In scenario 1 we assume progress will go ahead as planned without further significant delays. We also assume no other data center investor will emerge during the time period.

- Microsoft expands according to plan
- Facilities built between 2014-2020
- 900 construction workers on site on average during 7 year period
- 350-400 jobs in the data center by 2021
- 37 hectares acquired by Microsoft
- €2 bln total investment

SCENARIO 2

HYPERSCALE CAMPUS

In this scenario, we assume that Microsoft expands according to plan, and acquires 15 additional hectares. And we also assume that one or more hyperscalers will invest, acquire 72 hectares and build facilities between 2019 and 2025. The total investment that will be made, is estimated at EUR 3.5 billion. In that periode there will be 1400 construction workers on site on an average day. By 2025, about 1000 permanent jobs (FTEs) will be created for data center operations.

- Microsoft expands according to plan, plus an additional 15 hectares
- One or more hyperscales will invest
- Facilities build between 2019-2025
- 1400 construction workers on site on average day
- 1000 permanent jobs in the data centers by 2025
- 37 + 15 hectares acquired by Microsoft, 72 hectares by other hyperscaler(s)
- €3.5 bln total invested in 5 year period

SCENARIO 3

HYPERSCALE & COLOCATION CAMPUS

Here, Microsoft completes it plans by 2021 as in scenario 1, the hyperscale campus will emerge as in scenario 2, and also a colocation campus emerges as major colocation data centers, that want to be near the AMS-IX, find their way to Agriport, which emerges as a "North Amsterdam" campus.
Over the next 20 years, this campus may grow to as much as 80.000 square meters of data floor. We have looked at a scenario where construction for the first colocation data center starts in 2020, with a steady build-up to 40.000 m2 of available technical floor space by 2025. The total investments are then estimated at EUR 500 million for construction activities alone.

- Microsoft expands according to plan, and one or more hyperscales will invest
- Construction of first colocation data center starts in 2020
- Up to 40.000 m2 technical floor space by 2025
- A total of 1435 jobs for construction workers, data center staff and other direct employment
- €500 mln invested for construction activities alone

ECONOMIC IMPACT NORTH AMSTERDAM CAMPUS SCENARIO ANNUAL AVERAGE FOR 2015-2024

SCENARIO 1: MICROSOFT FULLY OPERATIONAL

	Direct	Indirect	Induced	Total
GDP contribution (EUR MLN)	139	77	53	€269 mln
Employment (FTE)	518	292	268	1140 FTE

SCENARIO 2: HYPERSCALE CAMPUS

	Direct	Indirect	Induced	Total
GDP contribution (EUR MLN)	416	229	158	€803 mln
Employment (FTE)	1429	718	658	2805 FTE

SCENARIO 3: HYPERSCALE & COLOCATION CAMPUS

	Direct	Indirect	Induced	Total
GDP contribution (EUR MLN)	477	259	181	€917 mln
Employment (FTE)	1638	837	763	3238 FTE

Digital Gateway to Europe

Domestic investments and employment

When we look at the impact on an annual basis across the 10-year period, we see that scenario 1 leads to an average investment of EUR 200 million per year for the construction of facilities and installation. About 40% of that is estimated to be domestic spending. Since the construction is expected to be completed in 2020, most investments will be done before that time and then it will drop to zero. In the second and third scenario, this drop-off will be more than compensated by the construction investments of initiatives by new investors. In scenario two, we can anticipate an average annual construction spend of EUR 550 million (245 domestic), in the case of scenario 3 even EUR 600 million (280 domestic).

Apart from investments in construction, there will be ongoing spending on the operations of the data center(s). This includes for example energy costs, technical staff, security and specialized cleaning. These investments will remain fairly constant when construction activities are completed, and also at a higher level than the averages for the 10-year period. In the first scenario, the average annual spend is EUR 60 million. In the second, this would increase to EUR 170 million and in the third scenario EUR 190 million. More than 95% of these investments are domestic (and indeed about 90% local).

In terms of jobs, we see that during construction there are on average 900 workers on site in the first scenario. Over a 10-year period, that means an annual average of 630 workers. With additional construction activities from scenario 2 and 3, the average would add up to 1610 workers per year, of which about 980 would be domestic workers. This means that Agriport could anticipate benefits from construction for a long period of time. If we look past the construction activities, we see that up to 1275 jobs could be created for the long term on the business park.

When we look at the economic impact, we only look to the impact on the domestic and local economy. About half of the employment during construction periods is from abroad and even a slightly higher proportion of overall spending.

Still, there is a strong contribution to the Dutch and local economy as well. The jobs that are here to stay, in operations, are typically very local and provides an interesting mix of skill levels, from cleaning and catering to engineers and management. Apart from that, non-domestic workers also need to be housed and fed while they are staying here, which means that the local hospitality sector benefits.

Indirect GDP contribution and employment

A similar dynamic is true for the indirect GDP contribution and employment. A larger proportion of the indirect spending is domestic, but more than half of spending and related employment will be from outside the region. Induced spending, finally, is typically very local. It is what employees spend their salaries on. This may include local retail and local services benefit strongly.

In the first scenario, based on the Microsoft data center only, we estimate the total GDP contribution at EUR 269 million, almost double the direct investments that are made by Microsoft as a result of indirect and induced effects. The effect will be bigger before 2021, when the latest stage should be completed, and lower after the construction period. In terms of domestic employment, more than 1100 jobs are supported.

In the second scenario, based on hyperscale expansion, the annual GDP contribution will be propelled to more than 800 million and employment to 2.800 FTEs.

In the third scenario, the total contribution and employment will be somewhat higher. The additional impact may seem limited, but especially a colocation campus provides a relatively large contribution to long term regional employment.

> **THE JOBS THAT ARE HERE TO STAY** PROVIDE AN INTERESTING MIX, FROM CLEANING AND CATERING TO ENGINEERS AND MANAGEMENT

ANNUAL DOMESTIC INVESTMENTS (EUR MLN)
Average 2015 - 2024

Legend: Construction (blue), Operations (orange)
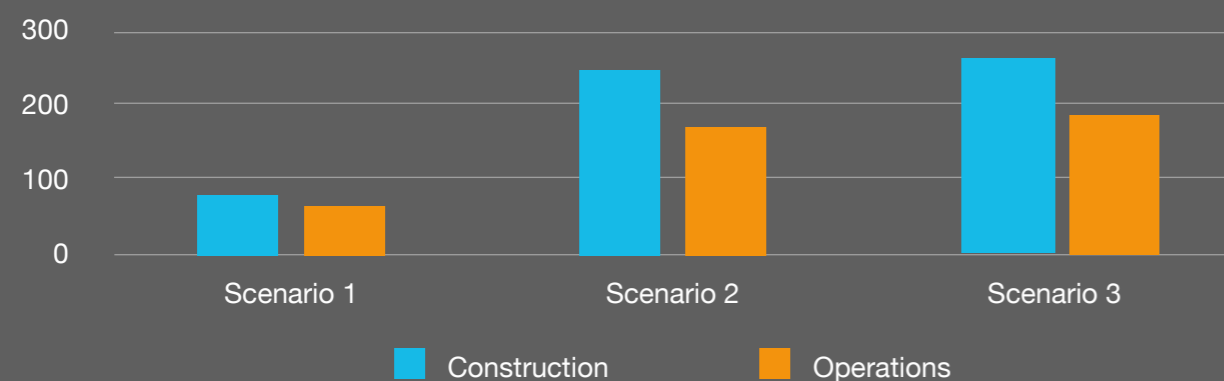
DOMESTIC EMPLOYMENT (FTEs)
Construction average 2015 - 2024, operations 2025

Legend: Construction (average) (blue), Operations (2025) (orange)
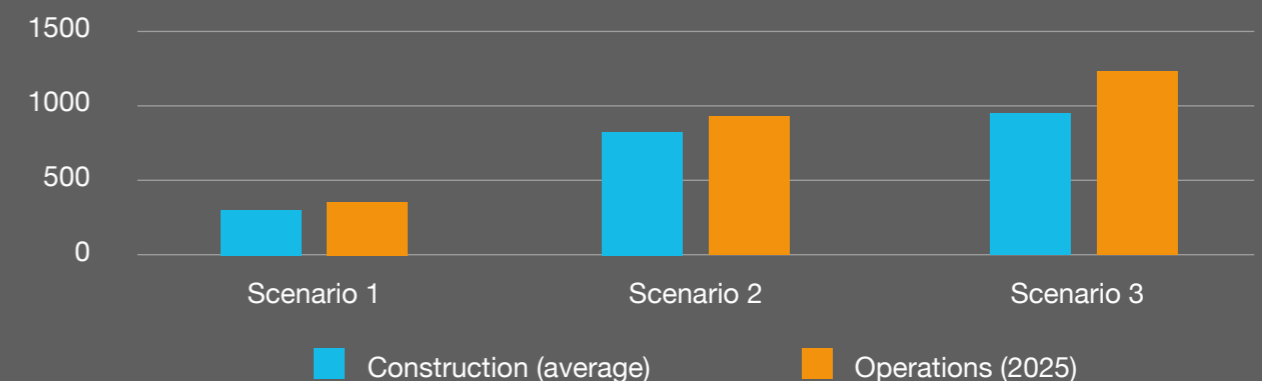
Local impact on the region

In the analysis we focused on the domestic impact and singled out local impact where possible. For hyperscales, we see that about half of all activities are performed by specialized contractors and subcontractors. The amount of construction activities that can be attributed to local contractors and workers is typically between 20 and 30%. For colocation data centers, we see that a much higher proportion of direct investments and employment is domestic, and the proportion of local contractors is higher, between 25 and 35%. When we look at operational spending, the investments and employment to run the data centers, we see a very high local impact: more than 90% of the benefits are likely to be local, from power to employment.

When we look at indirect effects, spending and employment in the value chain, we can not expect a large contribution to the regional economy. Value chain partners are typically somewhat farther away from the location. But the induced effects, how employees spend their income, tend to be very local and brings benefits to the local economy.

Impact on the local digital economy

Data centers are a crucial part of the digital economy. Together with network connectivity, it provides the backbone of the digital economy. It is the location where data is stored and processed, while the network allows the data to move around. They provide companies with the means to deliver robust, reliable services and the ability to scale without running into financial and physical barriers. This attracts new digital players, delivers benefits to local business communities, and empowers local digital players and communities.

Room for growth for local businesses

Looking at the potential regional impact of a colocation campus on Agriport, we are looking at the impact of having access to state of the art colocation facilities for the region North of Amsterdam. Colocation facilities do not only cater to international digital companies, but also to a mix of more "traditional" local organisations, from the private as well as the public sector, IT service providers, and technology innovators. In various bespoke market studies for Dutch colocation companies, Pb7 found that a colocation data centers should be within a driving radius of about 30 minutes. This is true for 80 to 90% of the the region North of Amsterdam.

Traditionally, most organisations have their own data rooms and, if they are big enough, data centers to store their computer equipment. But many are struggling with keeping the facilities up to scratch. On the one hand, computer equipment is demanding more energy, as manufacturers continue to squeeze more power into smaller equipment. As a result, more power and more cooling is required per rack. Future proofing a server room requires ongoing investments as a result.

On the other hand, access to computer systems has become mission critical: downtime of many systems leads directly to productivity loss as processes grind to a halt.

Often, this also directly results in revenue losses. Moving equipment from in-house facilities to a professional colocation facility (a multi-tenant data center) makes organisations less vulnerable to power failure and other equipment failures that can be the result of suboptimal climate control or cleaning. At the same time, professional security teams make sure that unauthorized access will be prevented. So, having professional colocation facilities nearby means local organisations get important digital room for growth.

Room for innovators

While many local businesses can benefit from the vicinity of colocation data centers, a specific group of companies stands to benefit most: digital companies, or digital innovators.
This group of companies consists of ecommerce companies, software vendors, hosting providers, and IT-driven businesses such as Booking.com and Uber. But it also includes digital knowledge clusters where science and business meet around for example artificial intelligence or blockchain. An example in the region North of Amsterdam is Data Science Alkmaar and the regional IT cluster Alkmaar that tries to support organisations in the region in discovering and applying the potential of data science and for example IoT. These knowledge clusters can become a breeding ground for new technology companies and initiatives.

Having a first class data center and network infrastructure in the region will prevent these old and new technology companies from being tempted to moving closer to Amsterdam. As a result, we can expect a positive effect on number of technology jobs and the size of the technology community as a whole in the region.

WHEN WE LOOK AT OPERATIONAL SPENDING, WE SEE A VERY HIGH LOCAL IMPACT: **OVER 90% IS SPEND LOCALLY, FROM POWER TO EMPLOYMENT**

Pb7 Research is an independent ICT research firm. We provide independent research and advice, aimed at the successful deployment of new technology in the European market, with a key focus on the Dutch market.

Pb7 supports technology marketers and strategists by identifying and analyzing market and competitive opportunities and challenges, technology buyers in making well-informed decisions and we help policy makers with key statistics and market insights. Pb7 Research is a specialist in IT security, IT professional services, data center infrastructure and services, cloud, and other emerging technologies.

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BACKGROUND INFORMATION

Digital Infrastructure and Economic Development. An Impact Assessment of Facebook's Data Center in Northern Sweden
The Boston Consulting Group, June 2014

Apart from the direct contribution of Facebook's data center to the Swedish GDP, BCG identified multiplier effects: the indirect contribution (spending in the supply chain) was 70%, or a multiplier effect of 1.7, while the induced contribution (spending from employees) added another 60%, or a total multiplier effect of 2.3.
BCG found that just over 40% of the construction was domestic spending, and that hyperscale construction typically involved a large proportion of foreign workers, especially for the installation of computer equipment.

> Download this report here

Economic impact of a hyperscale data center establishment in Norway
Menon Economics, June 2017

This economic impact analysis identifies what effects a potential data center could have on the Norwegian economy. Menon Economics estimated that a data center will contribute to employment with more than 6800 full-time workers over a 12-year period, and more than 450 full-time workers in the following years when the data center is in full operation. In addition, an economic impact of more than €547 million could be linked to the data center establishment over the period of analysis, with approximately €34 million in annual economic impact thereafter.

> Download this report here

European data centres. How Google's digital infrastructure investment is supporting sustainable growth
Copenhagen Economics, February 2018

What stands out, is that the indirect and induced effects can be quite different between individual data centers, depending on the mix of international versus local builders that are active during construction periods.

For the Dutch data center in Eemshaven, CE calculated an indirect contribution of 21% and an induced effect of 17%. More importantly, 2200 jobs (FTEs) were supported per year (average), including 700 direct jobs. It is important to note that the data applies to a small, construction heavy, time period.

> Download this report here

The Impact of Facebook's U.S. Data Center Fleet
RTI International, March 2018

RTI analyzed Facebook's domestic data center fleet, focusing on how their construction and operation are impacting the economy and the environment. Facebook data centers have contributed a cumulative $5.8 billion in gross domestic product (GDP) to the U.S. economy from 2010-2016, or $835 million per year.
Furthermore, RTI estimated that Facebook avoided over 2.5 million MWh of carbon-intensive electricity consumption through energy efficiency and renewable energy investments in the period from 2011-2016. This resulted in CO2 emissions reductions of over 1.2 million metric tons.

> Download this report here

The economic impact of multi-tenant data centers in the Netherlands
Pb7 Research & Dutch Data Center Association, March 2017

Research by Pb7 calculated multiplier effects for the GDP contribution, employment and taxes/social contributions. The multiplier effects of multi-tenant data centers turns out significantly lower, compared to the major data center projects in Sweden and the US, but higher than the Google project in Eemshaven.
In terms of GDP, the indirect multiplier in terms of GDP is 1,5 and the induced effect only slightly higher at 1,6. The multiplier effect in terms of employment are somewhat better: 1,6 and 1,7 .

> Download this report here

State of the Dutch Data Centers
Dutch Data Center Association, July 2018

Annual report of the Dutch Data Center Association (DDA). The report reflects the growth and developments that have taken place in the Dutch data center sector over the past 12 months.

The 198 multi-tenant data centers have a gross surface area of 546,000 m2 of which 308,000 m2 is net data floor. The power capacity of the single and multi-tenant data centers is estimated at around 1350 MW.

> Download this report here

**Digital
Gateway to
Europe**

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TO EUROPE

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For over a 1000 years the Netherlands has been the (digital) gateway to the European market. Digital Gateway to Europe is the organization promoting the Dutch Digital Data Hub, that helps you in many ways to prepare launch or expansion in the Netherlands.

By the industry, for the industry
We organize events such as trade missions, events, launchpads and other meet-ups to share information about the Dutch data hub.
Scale-ups, start-ups and enterprises who would like more in-depth information regarding the Dutch digital economy can consult our Digital Gateway to Europe knowledge database.
Find out more about the accessibility of large-scale Internet capacity, excellent business climate, privacy laws, net neutrality and many more reasons which make the Netherlands the preferred location for digital services and to distribute data.

Trade Missions
From the Netherlands, Digital Gateway to Europe regularly organises trade missions for the Tech industry. Over the last three years we visited the United States (San Diego, San Francisco, Silicon Valley), Canada, Ireland, Spain, Germany, France, UK, New Zealand and Australia.

KickStart Europe Summit
Only by collaborating, we can prepare for the extensive growth in demand for data; it is the only way in which the cloud, connectivity and data center industry is able to continue servicing the economy.
To help the industry to work together, Digital Gateway to Europe organizes an annual summit, KickStart Europe, that brings together 400 international C-level executives, to discuss future trends and investments in technology and digital infrastructure.

KickStart Europe will be held on the 15th of January, 2019 in Amsterdam RAI. For more information, see www.kickstartconf.eu

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