



# **DIGITAL TRANSFORMATION IN THE DATA CENTER**

*By Eric Boonstra  
CEO, EvoSwitch*



**“Digital transformation is the transformation of business activities, processes, competencies and models to fully leverage the changes and opportunities of a mix of digital technologies and their accelerating impact across society.”**

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# INTRODUCTION: ROADBLOCKS & ON-RAMPS

Digital Transformation is about the reinvention of a business to reposition it at the forefront of the fast-moving digital age. This publication addresses a crucial part of this process: how can the data center contribute? Technology is pivotal to the transformation but the technology itself is not the strategy, it is just the facilitator. However, it is often seen as one of the biggest roadblocks on the route to success:

- + In June 2016 a Harvard Business Review study found that **52%** of respondents felt that ‘persistent ties to legacy systems’ created the greatest barrier to digital transformation
- + In October 2017 the annual Global CIO survey by Logicalis Group stated that **44%** of respondents felt complex legacy technology is the chief barrier to digital transformation. **51%** said they planned to adapt or replace existing infrastructure as a means of accelerating digital transformation
- + In December 2017 a UK-based Ensono survey commissioned by the Cloud Industry Forum found that **52%** of organisations blamed IT infrastructure for delays to their digital transformation.
- + The same study found that **89%** believe that legacy technology is a barrier to digital transformation, with **46%** believing that changes to legacy systems would cause major business disruption, and **40%** believing it would be cost-prohibitive to replace.

Now that the build versus buy data center debate is over, and the economics and elasticity of the cloud has transformed the consumption of compute power, the answer to these challenges clearly lies in the carrier-neutral cloud data center. In the right hyper-connected facility a hybrid cloud architecture can be put in place which can ringfence or backhaul to established and stable legacy tools and systems while building out high-speed secure on-ramps to public and private clouds.

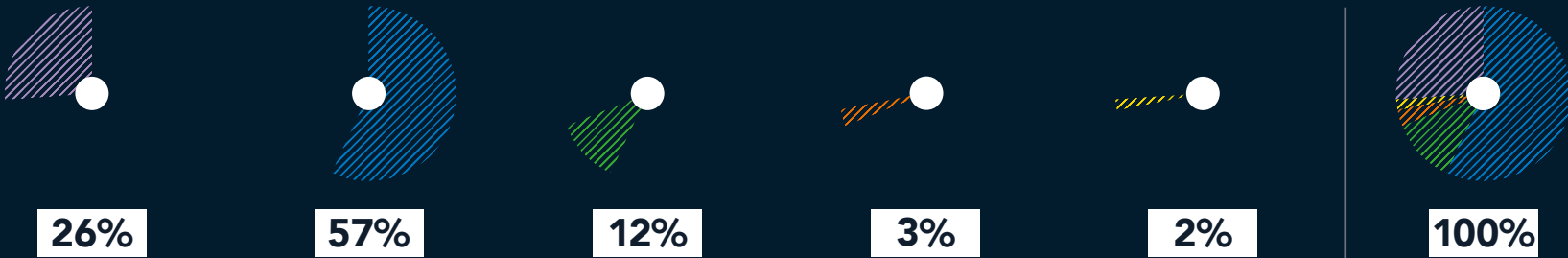
As EvoSwitch launches a major new expansion of its AMS1 data center, this brief study of critical infrastructure considerations on the digital transformation journey looks at the key points where an advanced infrastructure provider can become a transformation enabler.

Focus areas include delivery on connectivity as processing moves closer to the user edge; facilitating and accelerating what can be a complicated cloud journey; underpinning business agility by creating new revenue and partnership opportunities; and demonstrating a long-term commitment to efficiency, growth, partnership and customer value.

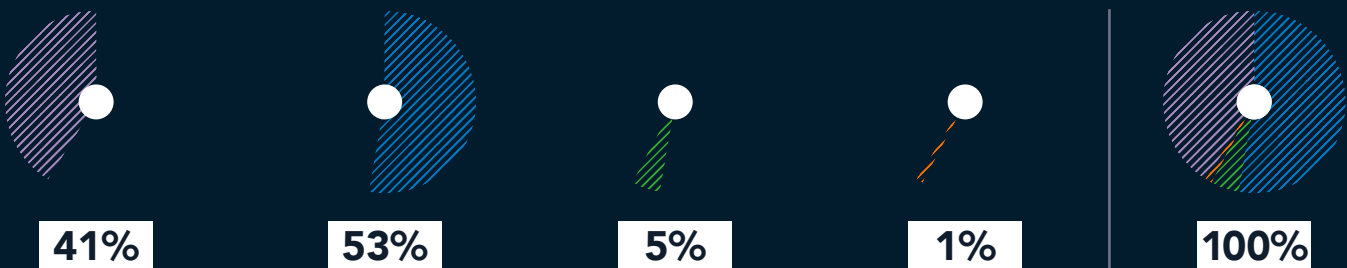
## DO YOU AGREE THAT LEGACY INFRASTRUCTURE IS A CHALLENGE THAT MUST BE OVERCOME FOR AN ORGANISATION TO SUCCESSFULLY UNDERTAKE A DIGITAL TRANSFORMATION?

STRONGLY AGREE AGREE DISAGREE STRONGLY DISAGREE I DON'T KNOW

### IT Descision Makers



### Business Descision Makers



### Source:

Connecting the business - unlocking digital transformation success, by Ensono for The Cloud Industry Forum (CIF) December 2017

# DATA ACCELERATORS

As connectivity improves and cloud storage services become the norm, more and more of the data resident on client devices is moving to the data center. The vast majority of this data center traffic (over 80% according to Cisco) will be from and to the cloud. The bulk of the cloud workload in the next year or two will be from Software-as-a-Service (SaaS; 59%), followed by Infrastructure-as-a-Service (IaaS; 42%) followed by Platform-as-a-Service (PaaS; 11%). Over time, the range of services on offer will encompass every business function, culminating in integrated support for complete business processes.

Facilities which can provide low-latency highly efficient access to all of these services quickly become a one-stop shop for digital transformation.

## THE POWER OF NEUTRALITY

Carrier-neutrality is the magnet that pulls all this connectivity into a single hyper-connected location. But carriers and other network service providers do not appear overnight. The process takes time and, to some extent, luck: A carrier colocates with a key customer, or a content provider moves its equipment closer to an exchange; equipment is upgraded and more space made available at just the right time; more connectivity partners see where competitors or customers are going and follow them. As the ecosystem grows, it begins to exert its own gravitational pull.

Over time what often starts as pure connectivity and content expands to create more complex ecosystems. These diverse ecosystems possess

the reach and mix to feed hungry and fast-moving digital businesses. Look for multiple international carriers that compete on price; a healthy mix of fixed to mobile (everything must run on 5G); systems integrators to pull it all together; analytics providers; software houses; virtual infrastructure providers, and home-grown as well as global CSPs.

## OPENING UP THE CLOUD

Exploitation of mixed cloud services is the key to successful transformation. The vast majority of digitally transformed businesses will be multi-cloud and multi-market. It is perfectly practical - and becoming increasingly common - to have a hybrid architecture delivering multiple solutions across spanning multiple clouds.

For this reason, facilities should be cloud-agnostic as well as carrier-neutral, making them optimal locations for hybrid clouds which bridge the gap between legacy and transformed frameworks. Cloud-neutral data centers bring the cloud marketplace to the user, housing partners that can help IT teams back up data, orchestrate multiple clouds or synchronize data across multiple devices and locations.

Look for a flexible cloud interconnection platform that does not tie you in. The genuinely neutral exchanges allow real-time trading of bandwidth, supported by a bilateral contract with suppliers. They provide high-speed, secure and cost-effective access to the broadest possible range of cloud service providers and partners.



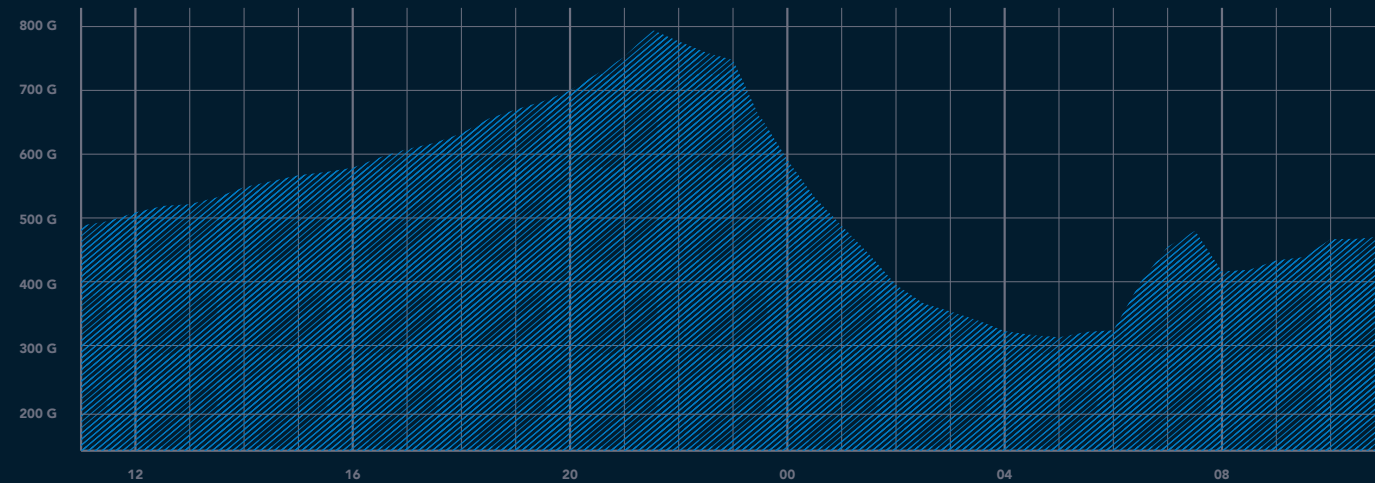
EvoSwitch OpenCloud creates a dynamic marketplace for the sale, development and consumption of next generation hybrid cloud architecture. It brings together enterprises, networks, cloud infrastructure providers, specialist partners, and leading Internet Exchanges, offering a huge variety of low latency cloud connection options. Because OpenCloud is - and will remain - neutral, members can leverage the full power of the marketplace. Provider partners gain quick, supported, access to new revenue opportunities, while cloud consumers can try before they buy,

testing new connections in parallel without disrupting existing services. They can avoid lock-in, maximize flexibility, and look forward to growing choice as new partners sign up and existing partners expand. Today over 100 EvoSwitch customers are active members of OpenCloud.



# THE EVOSWITCH APPROACH: NEUTRALITY BREEDS CONNECTIVITY

AMS-IX traffic levels at EvoSwitch AMS1



RRDTOOL / TOBI OETIKER

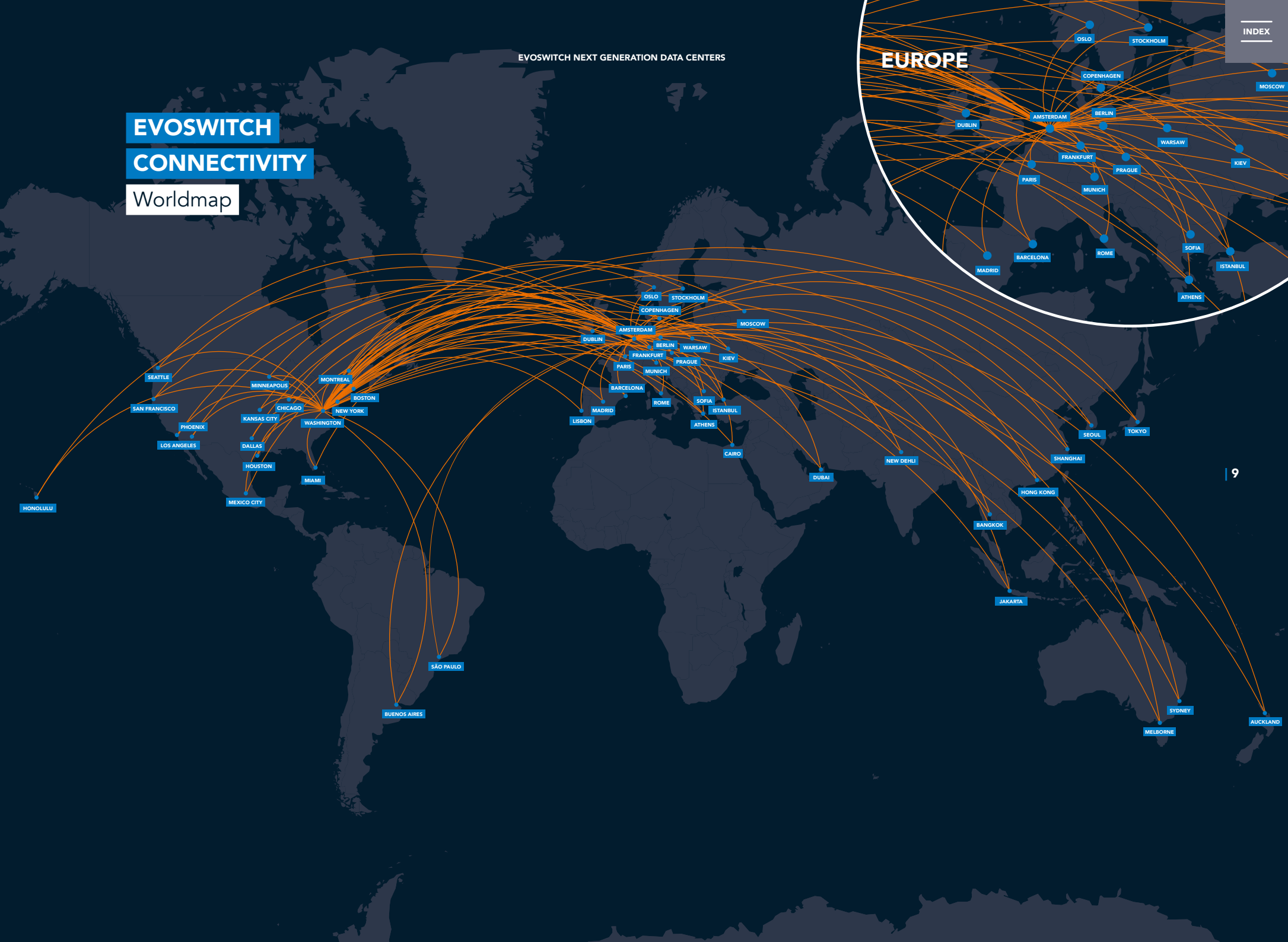
A key indicator of successful growth and network diversity in a colocation facility is traffic levels. For the last 5 years EvoSwitch has been awarded Gold Partner status by AMS-IX, the second largest internet exchange in the world by traffic volume. To qualify, companies have to introduce over 20 new members or 100GE of new port capacity. In 2014 we were one of five Gold

Partners, in 2016 there were three, and in 2017 EvoSwitch was the only one. AMS-IX traffic at EvoSwitch AMS1 now exceeds 800 Gigabits per second, contributing a significant proportion of overall AMS-IX traffic levels and growing the fastest of any facility in the region.



## EVOSWITCH CONNECTIVITY

Worldmap





**“EvoSwitch established themselves as a top three connectivity data center in the Amsterdam region with continuous interconnection growth and a carrier neutral policy towards their customers. These are important values for AMS-IX and that is why we have built a long, deep and innovative relationship over the years with them. For the fifth consecutive year EvoSwitch has been our Gold Partner which is one of the pillars of our growth over the last years. For us it’s important to have reliable partners such as EvoSwitch to develop new technologies and solutions together for now and in the future.”**

**Jesse Robbers**

**CCO, AMS-IX**

## SUSTAINABLE SPACES

Sustainability encompasses far more than just impact on the environment. Responsiveness, support levels, service development, pricing strategy, planning capability are all vital characteristics in a sustainable colocation provider.

### COMPLIANCE & BEYOND

Standards matter. For compliance and for multi-market multi-cloud collaboration, 5\*9s for availability, the full ISO range - ISO 27001:2013, PCI-DSS, SOC1 Type II, ISO 14001:2015 etc. as well as a healthy range of sector-specific certifications are non-negotiable. However, if a business is looking for a long-term partner, compliance needs to reflect something deeper – an underlying culture of continuous improvement. This is not immediately recognisable from the sales literature. Infrastructure partners capable of supporting digital transformation over the longer term should set their own efficiency standards and design their own processes.

### THE IMPROVEMENT CYCLE

Many data centers still in use today were built when designs were not sustainable, and facilities featured power-intensive cooling systems. Some are far worse, specifically in terms of server deployment. A 2015 study by Jonathan Koomey found that enterprise data center servers were still only delivering, on average, between 5 and 15 percent of their maximum computing output over the course of a year, and 30 percent of physical servers had been comatose for six months or more. The migration of data and applications from these legacy sites into the cloud is critical to the overall improvement of efficiency.

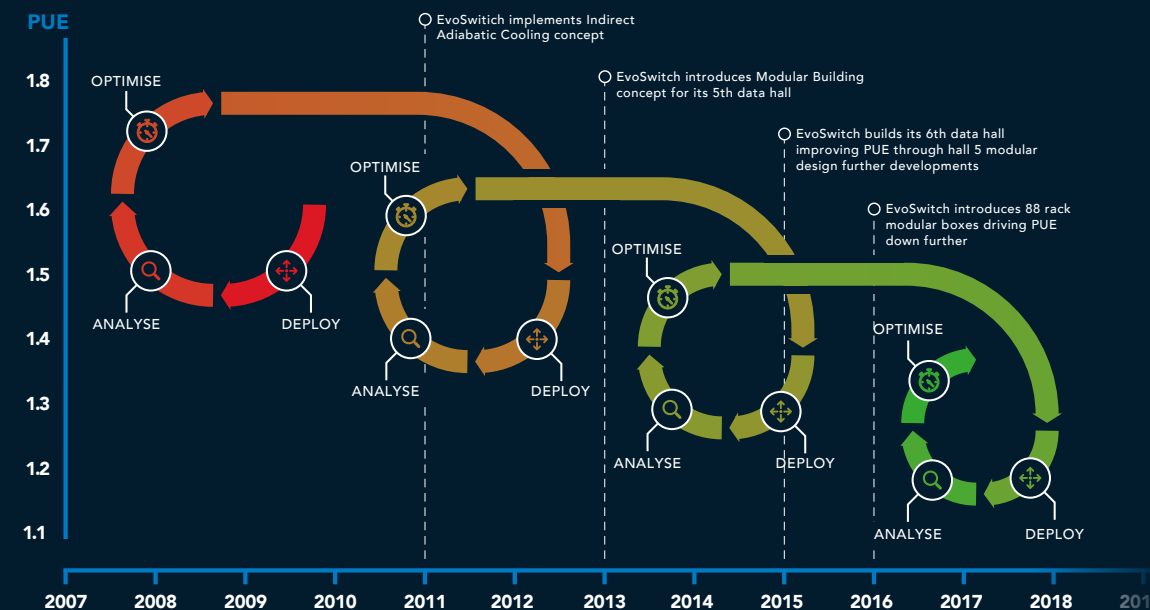
Power and space efficiency drive value. ‘What were/are the key drivers for your organisation to undertake a digital transformation?’ According to the CIF/Ensono Digital Transformation study, while increasing productivity (59%) and increasing profitability (58%) ranked highly in answer to this question, 70% said that cost saving was the main driver of digital transformation. While you move the focus from cost saving to revenue generation, pricing and power and space usage efficiency should be key considerations as you select a new facility.

"We really appreciate EvoSwitch's growing **eco-system-driven portfolio**. For customers of ours with third party partners in the **EvoSwitch ecosystem** a simple **cross connect** to EvoSwitch's **OpenCloud** service delivers a world of **opportunities**. Our **portfolio** is extremely broad but it stops at **Hypervisor level** so is not very deep. For depth our customers need **to find partners**, and if they can access them within the data center then this **reduces sprawl** and **improves performance and security**."

**Ian McClarty**

**VP, PhoenixNAP Global IT Services**

## THE EVOSWITCH APPROACH: PUE & DEPLOYMENT



By developing new cooling technologies and focusing on reducing energy overheads in design and operations, EvoSwitch has pushed down Power Usage Effectiveness (PUE) from 1.8 - 2 to 1.1. A key factor in PUE reduction is optimizing set points. Because the EvoSwitch-patented 88\*rack modular architecture is extremely versatile, it is possible to go through this optimization process at more points on the data floor, giving a greater overall efficiency gain over time. These modules deploy stand-alone units

with their own multiple UPS back-up solutions, distribution boards, cooling units and fire suppression systems. This allows highly autonomous data center units for customers with dynamic needs, and because EvoSwitch owns the process it can be implemented fast as customers scale, with delivery, implementation and commissioning per module taking under two weeks.

# PROGRESSIVE PARTNERS

**Look for a colocation provider that goes the extra mile in terms of efficiency optimization, service development, and proactive partnership. Key questions to ask are:**

## + Do they offer energy audits?

Since it opened as the first carbon-neutral facility in the Netherlands, EvoSwitch has been passionate about improving energy efficiency. Recently the engineering team managed to reduce a customer's physical footprint and power consumption by over 20% each. The customer had a mix of virtual and legacy servers with full racks requiring 4-5 kW power density; they now use a quarter of a rack with 2kW of density for the same workload.

## + How transparent is reporting and pricing?

Providers should share all power and PUE data and link this to pricing. Pricing strategy should be open and consistent in order to avoid nasty surprises as you scale up the cloud side of the business. Cross Connects will fuel your interconnections with new partners, make sure you are not paying an inflated price for them.

## + Will they plug you into the ecosystem?

A long-term colocation partner should help you to expand your network and build digital business opportunities. Look for a provider that is willing to introduce you to anchor partners located in the facility, either one-to-one or via networking events and online platforms.

## + Will they help you do more and better business?

Digital transformation is about building new relationships with like-minded businesses. For businesses that are building partnerships and making sales based on the data floor ecosystem, support in white labelling services and provision of meeting facilities and offices are key to a good relationship.

## + Can they scale with you?

As data levels rise exponentially in the world's mature colocation and internet hubs, megawatt capacity is becoming hard to come by and build-outs struggle to keep pace with demand. Make sure your digital infrastructure partner is well placed to expand at the rate your digital transformation demands, not just this year but in the longer term.



"...then there is the **growing popularity** of partners like EvoSwitch; apart from **greater pricing flexibility** and **sharp responses**, they are **increasingly popular** compared to the **larger players** as all their facilities are **brand new** and in **walk-in condition** for clients. All of these factors **contribute to revenue generation.**"

**Syrus Mokhtari**

**Co-founder and Sales Director,**

**The Blueprint IT**

## THE EVOSWITCH APPROACH: CUSTOMER FEEDBACK

Customer Satisfaction is the key to our growth. The metric we use for Customer Satisfaction is the Net Promoter Score. The critical score is zero, above which the business has more promoters than detractors. An NPS that is higher than zero is good, and an NPS of over +50 is regarded as excellent. In 2015 EvoSwitch scored +61; in 2016 +75; and in 2017 +56.

**Average NPS score over  
the last three years:**

**+64**

# CONCLUSION: NEXT GENERATION INFRASTRUCTURE

While the development of advanced infrastructure and systems is just one milestone on the road to digital transformation, it is critical to success. Legacy systems, equipment and infrastructure are widely regarded as one of the top three barriers to digital transformation. A hybrid cloud architecture which is based in a carrier-neutral colocation facility, provides a tried and tested route to full transformation.

But not all carrier-neutral facilities are equal. The best will become valued partners on the journey, capturing efficiencies on the way and accelerating the ability to convert broad strategies into specific opportunities.

Organisations looking for a long-term and mutually beneficial relationship with a data center provider should take time to look for:

**+ Mature neutrality with growing traffic:** number and range of connectivity providers is critical to your ability to negotiate a good price and accelerate geographic reach, not just to new markets but also to emerging data processing locations at the end-user edge.

**+ Rich and diverse ecosystems:** While for many organisations price is the starting point, successful digital transformation is not about cost containment, it is about how the smart deployment of new technologies can help to beat the competition, create new routes to existing markets, open up new markets, and win new customers. New partnership models will drive transformation, with a rise in of co-opetive, collaborative, and co-creating approaches, leading to new business models and revenue sources.

**+ Multicloud solutions:** Your primary hyperconnected data center should provide a cloud-agnostic multicloud platform with a range of non-exclusive access options and a commitment to grow its membership.

**+ Compliance overdelivery:** Technical focus on design, power and compute efficiency should exceed non-negotiable compliance levels. Look for an underlying culture of continuous process improvement and a high level of in-house design and engineering expertise. PUE track record is a good indicator.

**+ Future-proof focus:** Advanced service providers should offer an expanding and evolving service portfolio which identifies customer needs ahead of the curve. Focus on specific customer ecosystem needs and a good working understanding of current industry issues are good indicators. Also expect to be offered networking opportunities and on-site office and meeting facilities

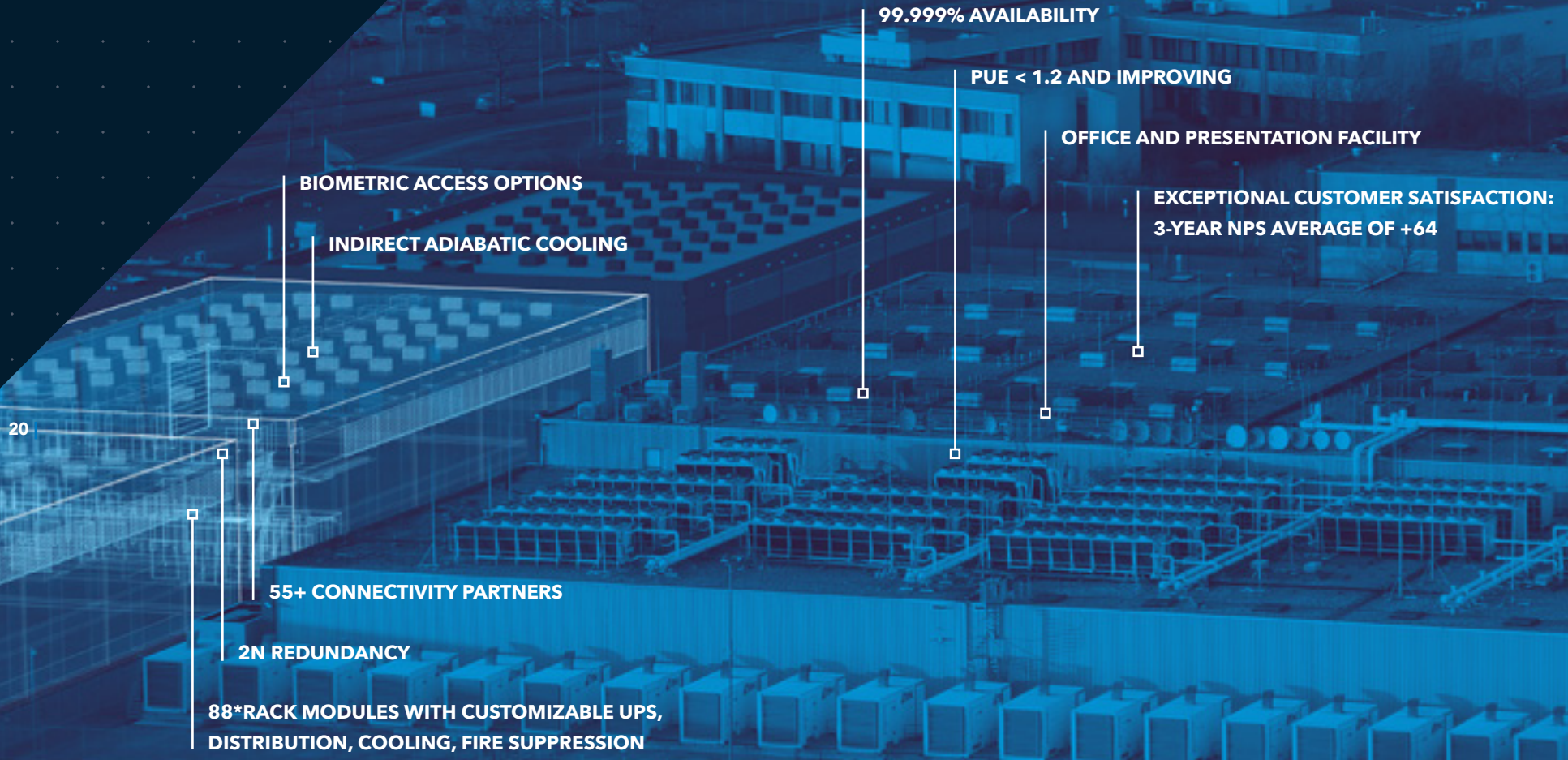
**+ Transparency:** In reporting and pricing.

**+ Ability to scale:** More data is flowing to the data center and overall levels are skyrocketing as IoE takes off. Everyone is on the road to digital transformation so expect demand for space and power in premium facilities to go the same way. Be sure that your data center has plans in place to keep pace with demand.



# AMSTERDAM AMS1 EXPANSION: THE DIGITAL TRANSFORMATION DATA CENTER

To accommodate customer demand, EvoSwitch is building a new 6,000 sqm data center on our AMS1 Campus, with 7.5 MVA of 100% renewable power. The new data center incorporates everything that EvoSwitch has learned about facilitating digital transformation for its customers and partners. This expansion is the first phase in a much larger ongoing growth strategy, with potential for a further 30,000 sqm of customer space and 60MW of IT load at a time when Amsterdam is approaching Megawatt capacity.



World-leading  
Internet Exchanges



Neutral OpenCloud  
platform with 100+  
active members



Energy-Efficiency  
Audits

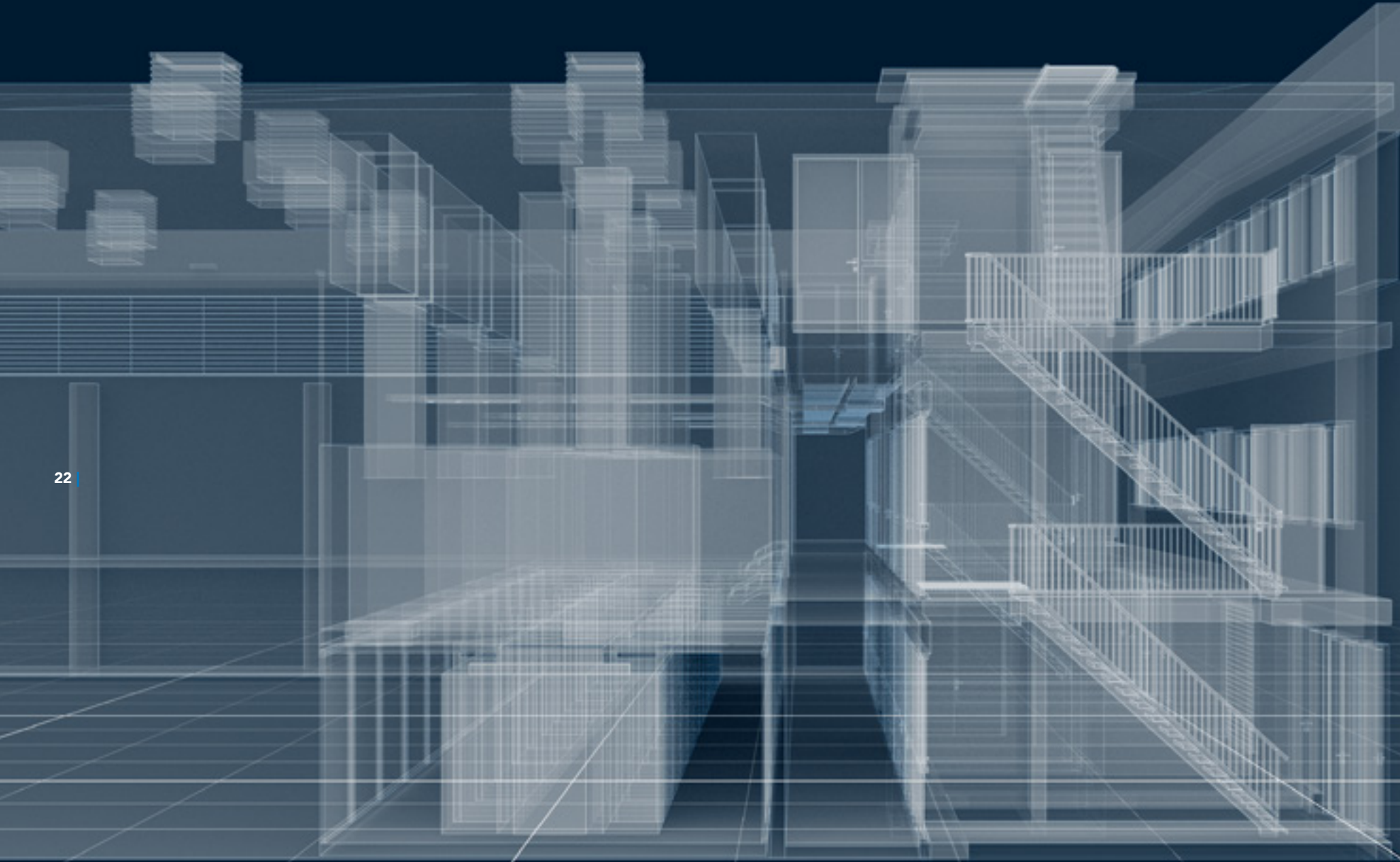


**Certifications**  
ISO 27001:2013 | PCI-DSS  
Soc1 Type II | ISO 14001:  
2015



DIGITAL TRANSFORMATION IN THE DATA CENTER

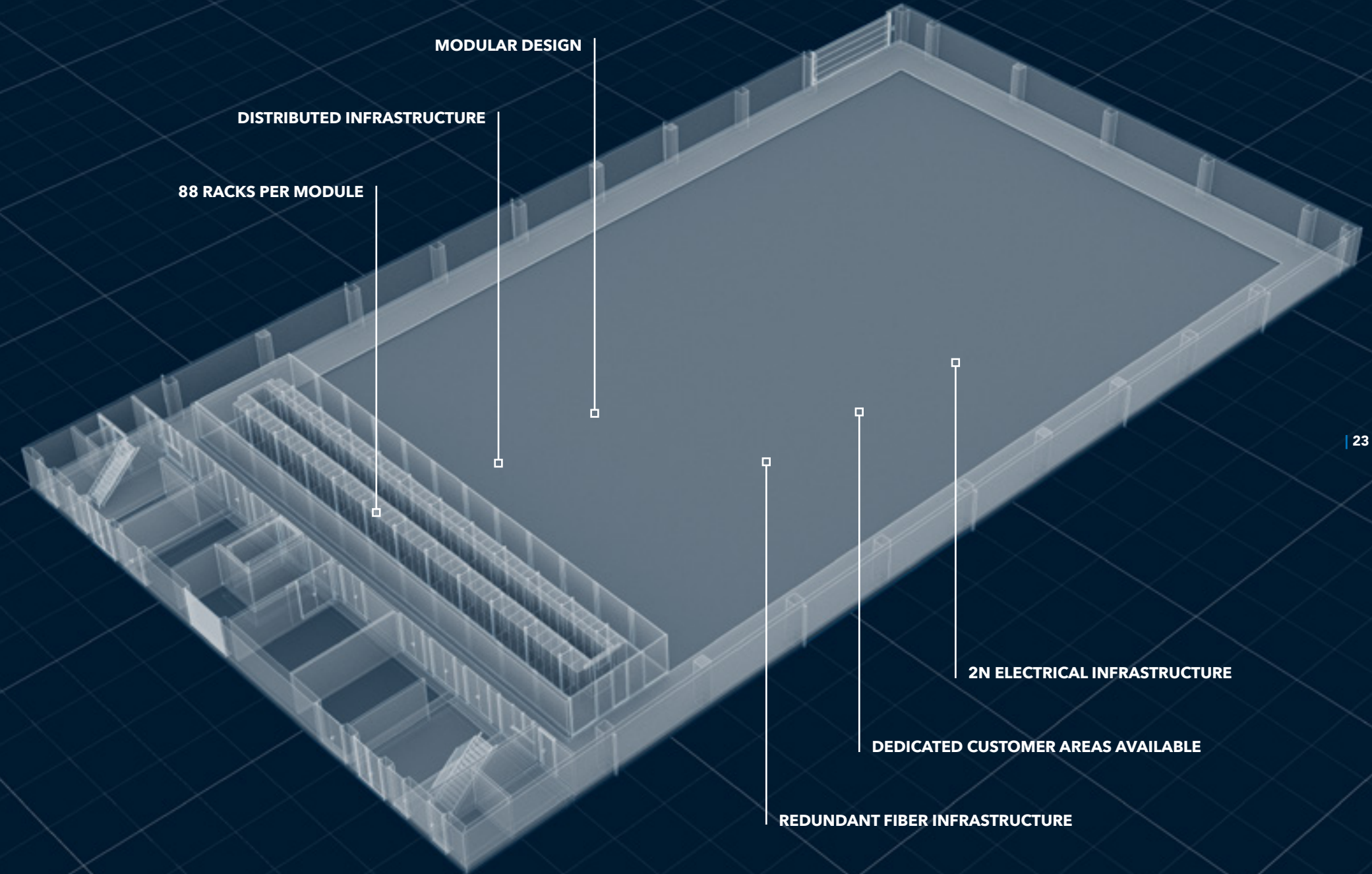
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EVOSWITCH NEXT GENERATION DATA CENTERS

- MODULAR DESIGN
- DISTRIBUTED INFRASTRUCTURE
- 88 RACKS PER MODULE
- 2N ELECTRICAL INFRASTRUCTURE
- DEDICATED CUSTOMER AREAS AVAILABLE
- REDUNDANT FIBER INFRASTRUCTURE

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# CONTACT US

If you are interested in finding out more about EvoSwitch in Europe or North America, please don't hesitate to get in touch and we can answer all your questions or arrange a facility tour.

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# SOURCES & REFERENCES

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[www.logicalis-thinkhub.com/media/1063/logicalis\\_global-cio-survey-report-2017-18.pdf](https://www.logicalis-thinkhub.com/media/1063/logicalis_global-cio-survey-report-2017-18.pdf)

‘Connecting the Business - unlocking digital transformation success’ by The Cloud Industry Forum (CIF), in partnership with Ensono (200 business (BDMs)and IT decision-makers (ITDMs) from UK-based organisations):  
[www.cloudindustryforum.org/content/connecting-business-unlocking-digital-transformation-success](https://www.cloudindustryforum.org/content/connecting-business-unlocking-digital-transformation-success) *(registration required)*

i-scoop – useful digital business transformation guide:  
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lessons and success factors, good overview:  
[www.digital-360.com/downloads/Digital-Transformation.pdf](http://www.digital-360.com/downloads/Digital-Transformation.pdf)

5 DX success factors, short article: [www.cio.com/article/3240978/leadership-management/digital-transformation-five-critical-success-factors.html](http://www.cio.com/article/3240978/leadership-management/digital-transformation-five-critical-success-factors.html)

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# VISIT THE EVOSWITCH KNOWLEDGE CENTER

Read the latest papers from the EvoSwitch team on current ICT and infrastructure challenges:

- [EvoSwitch 2020 Data Center Vision](#)
- [Reuse & Recycling of Servers: Next Steps Towards Sustainability](#)
- [Data Center Sustainability: The Next Dimension](#)
- [How to Build a Better Cloud Part 1: Planning](#)
- [How to Build a Better Cloud Part 2: Implementation](#)
- [AI: Centers of Data](#)
- [GDPR Guide: What your Organisation Needs to Know](#)

## Colophon

### Text

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