

# ***Easy Interconnection. Anywhere!***

***Annual Report 2018***







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**Harald A. Summa**

CEO, DE-CIX Group AG

## Message from the CEO

**Dear Readers,**

*I am pleased to say that we were able to notch up another successful year at DE-CIX in 2018.*

*The DE-CIX world is growing continuously, responding to our customers' needs and demands. We have further broadened our interconnection footprint with the aim of making interconnection – the process of bringing networks together to exchange data traffic – as easy as possible for our customers, wherever they need it. We therefore focused on both new services and new locations in 2018. The success of this interconnection strategy is demonstrated in the considerable growth in customer numbers, connected customer capacity, and turnover.*

But where did we grow, and why? We followed the traffic flows, which are clearly moving southwards and eastwards, but are also moving closer to the edge everywhere. This informed our decision to open new markets and new locations – such as DE-CIX Lisbon, and the partnerships with MSK-IX in Moscow and BCIX in Berlin. But our strategy is not only about being present in major centralized telecommunications hubs: DE-CIX also brought its services closer to the edge in Germany by broadening the coverage of data centers with the support of partners. This meant that new access points were opened in data centers over a broader geographical area, spreading out away from the centers of connectivity. Especially for small and

medium-sized enterprises, this is an uncomplicated way to gain access to the many networks that are connected to the DE-CIX platforms around the world.

And even as we grow, and we seek the shortest paths to many new customers and locations, we still do not cut corners. There can be no digitalization without stable, reliable and secure infrastructure, and at DE-CIX, we strive to always remain at the forefront of the interconnection technology that drives digital transformation. A stable infrastructure enables interconnections between regions, sectors, and digital ecosystems. Only in this way can enterprises transport, store, share, process, and analyze their data, the raw material of digital industry – and successfully turn that data into business opportunities. Such interconnection solutions form the core service for DE-CIX. The highest possible quality and security are an absolute must for this.

Alongside highest quality infrastructure, this is just as important for the associated services – which offer customers the flexibility they need to be prepared for future requirements, and to get the greatest benefit out of the infrastructure they have connected to DE-CIX. To make interconnection as easy as possible for customers, DE-CIX focuses on simple solutions, both in the planning and in the provision of services. The success of the services GlobePEER Remote – which allows customers with a single access to DE-CIX to interconnect and peer with networks at other DE-CIX

locations – and DirectCLOUD – a service enabling simple connection to multiple cloud service providers, via a single connection – shows that this strategy is working.

I am very proud to say that DE-CIX continued to solidify its position as the world's leading provider of premium interconnection services and operator of Internet Exchanges, both globally and locally, in 2018. The DE-CIX Internet Exchanges in Europe, Asia, India, and the Middle East, as well as in North America, increased our consolidated global customer base to close to 1,600 customers (almost 30 percent up on our 2017 figures). Of course, in line with this, our connected capacity grew more than 35 percent to over 45 Terabits (Tbits), and orders for 100 Gigabit Ethernet (GE) ports grew by nearly 45 percent to more than 300 worldwide.

From a financial perspective, DE-CIX was able to hold its ground in the fierce global competitive environment in the 2018 financial year. The worldwide turnover of all company parts grew by 12 percent, while the share of international business took off, jumping by 27 percent and proving the worth of our internationalization strategy. But our home base in Frankfurt has nonetheless maintained its lead in international comparison, as the largest Internet Exchange in the world based on data throughput.

The company structure was also a focus of activity in the reporting year. In autumn 2018, the eco Board signed the asset transfer documents for DE-CIX Management GmbH and DE-CIX International GmbH into DE-CIX Group AG. As a result of this, eco changed from being the parent of the DE-CIX companies to become the sole shareholder of DE-CIX Group AG, which now acts as a holding company. I am also happy to welcome Sebastian Seifert in his role as Chief Financial Officer of the DE-CIX Group AG as of December 2018, who has also joined myself and Ivo A. Ivanov on the Executive Board.

As one can see, the DE-CIX interconnection strategy is paying off in bringing our products and services closer to the edge, wherever our customers need us. We invite everyone to join us on our path to drive the digital transformation with a stable, reliable, and secure infrastructure.

Best regards,

Harald A. Summa  
Chief Executive Officer, DE-CIX Group AG



***Set for further growth,  
efficiency, and a successful  
future***

## Executive Management



**Harald A. Summa**  
Chief Executive Officer &  
Chair of the Board



**Ivo Ivanov**  
Chief Operating Officer &  
Vice Chair of the Board



**Sebastian Seifert**  
Chief Financial Officer &  
Member of the Board

## DE-CIX Group AG Supervisory Board



**Felix Höger**  
Chair of the Board



**Klaus Landefeld**  
Vice Chair of the Board



**Rudolph van Megen**  
Member of the Board

# The New DE-CIX Organization & Corporate Governance

## Set for further growth, efficiency and a successful future:

In autumn 2018, the legal basis for the next phase of growth of DE-CIX was established with a new corporate structure. eco – Association of the Internet Industry moved from being the owner of all DE-CIX company parts to sole shareholder of the DE-CIX Group AG, into which the eco subsidiaries DE-CIX Management GmbH and DE-CIX International GmbH were brought. All domestic and international DE-CIX activities, financial investments, and company parts were thus consolidated under the umbrella of the DE-CIX Group AG. Chair of the DE-CIX Supervisory Board Felix Höger and Vice Chair Klaus Landefeld, both of whom are Members of the eco Board, constitute the point of connection between the association and the holding company. As Member of the Board, Rudolf van Megen completes the Supervisory Board.

Harald A. Summa (CEO) became Chair of the Board of the DE-CIX Group AG and Ivo A. Ivanov (COO) Vice Chair. At the end of 2018, Sebastian Seifert was also appointed as a further Member of the Board and as Chief Financial Officer of the DE-CIX Group AG.

The DE-CIX Management GmbH operates the DE-CIX Internet Exchanges in Frankfurt, Hamburg, Munich, and Dusseldorf, and the UAE-IX in Dubai as Managed Services in cooperation with datamena. The company is led by CEO Harald Summa, also founding member of eco – Association of the Internet Industry, and is guided in its decision-making by the Customer Advisory Board. The Board is elected by DE-CIX customers, and meets twice a year to oversee management, develop strategy, and ensure the secure and stable growth of the company.

DE-CIX International GmbH, led by Ivo Ivanov, is responsible for the vast majority of the international activities of the DE-CIX brand, either directly (Madrid, Marseille, Palermo, and Lisbon), or through subsidiaries in the USA (New York and Dallas) and Turkey (Istanbul). Furthermore, the Angola-based angonix has placed its trust in the consultancy services of the company. Since 2017, DE-CIX International has also been a partner in a Joint Venture with the DE-CIX Interwire Internet Services Private Limited, operating the Mumbai IX as a first entry-point of DE-CIX into the promising Indian market. It has also been announced that three new DE-CIX locations in India would be opened in 2019: DE-CIX Chennai, Delhi, and Kolkata.

## DE-CIX Management GmbH Senior Management



**Lucia Falkenberg**  
Chief People Officer



**Thomas King**  
Chief Technology Officer



**Daniel Melzer**  
Chief Network Architect



**Arnold Nipper**  
Chief Technology Evangelist  
and Co-Founder of DE-CIX



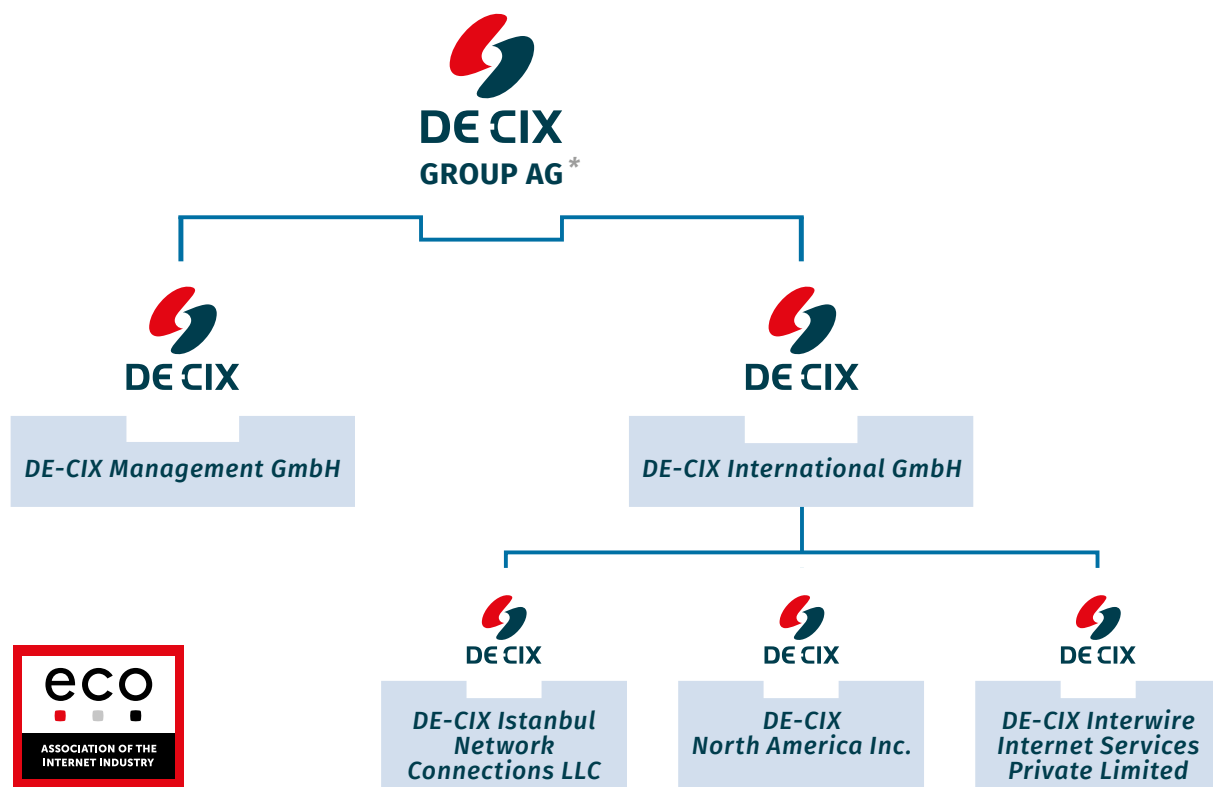
**Gregor Reinhold**  
Chief Financial Officer



**Stephan Rohloff**  
Chief Marketing Officer



**Andreas Sturm**  
Chief Business Development  
Officer



\*Sole Shareholder:  
eco – Association of  
the Internet Industry



## Our Customers' Opinion Counts – the DE-CIX Customer Advisory Boards

The Customer Advisory Boards reflect the customer base, as their members can be seen as representatives of the variety of networks connected to DE-CIX: national and international, small and large ISPs, as well as regional and global content providers. While the Customer Advisory Boards do not have decision-making authority, their members communicate with the DE-CIX management team and help guide the overall direction of DE-CIX. As of today, there are three Customer Advisory Boards supporting us in different markets: Germany,

North America, and Turkey; more are to be assigned in further regions soon.

### Germany: DE-CIX Management GmbH Customer Advisory Board

The Board has five members in order to represent the global customer reach of DE-CIX. One of the Board Members is appointed directly by eco – Association of the Internet Industry. The other four members are elected directly by DE-CIX customers. The Customer Advisory Board was elected in 2017 for a period of two years.

#### Germany: DE-CIX Management GmbH Customer Advisory Board



**Falk von Bornstaedt**  
Head of Group Peering  
and IP-Trading  
Deutsche Telekom AG



**Zaid Ali Khan**  
Senior Director  
Infrastructure  
Engineering; LinkedIn



**Bernhard Krönung**  
Managing Director and  
Founder  
regio [.NET]



**Klaus Landefeld**  
Board Member  
eco – Association of the  
Internet Industry



**Malte von dem Hagen**  
Director Networks  
GoDaddy

#### USA: DE-CIX North America Customer Advisory Board



**Phil Koblenz**  
COO  
New York Internet – NYI



**Steven Schecter**  
Senior Manager of Network  
Architecture  
Akamai Technologies Inc.



**Bryan Socha**  
Senior Network Engineer  
DigitalOcean



**Carl Williams**  
Network Engineer  
Linode

#### Turkey: DE-CIX Istanbul Network Connections LLC Customer Advisory Board



**Çağlar Dabanoğlu**  
Senior Network Architect  
Akamai



**Serkan Sevim**  
CEO of Medianova



**Cem Çelebiler**  
CEO of TurkNet

# ***Interconnection at its best – pushing automation and accessibility***







**Dr Thomas King**

Chief Technology Officer

## DE-CIX Technology Update

### **Interconnection at its best – DE-CIX pushes automation and accessibility in 2018 and beyond**

*In keeping with the increasing customer demand for interconnection, 2018 further confirmed that 100GE ports are the new 10GE. DE-CIX experienced continual growth in demand for 100GE ports during the year, so that, by the end of 2018, more than 300 of the over 2,000 connected customer ports were 100GE. This means that around 15 percent of all customer ports connected to DE-CIX infrastructure are already 100GE ports. DE-CIX also upgraded its Apollon Infrastructure in Frankfurt to be ready for the newly available 400GE port technology. DE-CIX expects to start selling 400GE ports in 2019.*

In line with the “Anywhere” in our motto, “We make Interconnection easy. Anywhere”, we added further locations and many enabled sites to the growing DE-CIX family in 2018, significantly increasing the number of places where customers can connect to DE-CIX. The locations added were Lisbon (ready for service in early 2019), Berlin, and Moscow, with the latter two undertaken as partner initiatives with local Internet Exchange (IX) operators (Berlin in January 2018, and Moscow in early 2019). In addition to new locations, a total of 13 new DE-CIX enabled sites were added at existing locations: 5 in Frankfurt, 3 in Dusseldorf, 3 in Mumbai, 1 at UAE-IX in Dubai, and 1 in Munich.

Further locational initiatives included the kick-off of Project Reach, which introduced the so-called “Longhaul Access” product. This Longhaul Access enables customers such as enterprises or small to medium-sized ISPs to connect to the DE-CIX world via local data centers, therefore also extending DE-CIX’s reach into more data centers and closer to the edge. The introduction of “Longhaul Access” started very successfully in 2018 in Germany, and is expected to grow in 2019, bringing increasingly more sites into the DE-CIX terrain.

### **“The Internet relocates”: The largest-ever infrastructure relocation in DE-CIX’s history**

Other significant milestones from a technical perspective in 2018 included the migration of DECIX 7 (Level 3) to DE-CIX 12 (Equinix) in Frankfurt. This was the biggest migration in the history of DE-CIX, and lasted for roughly 12 months throughout 2018, with planning having begun in 2016. In the process, more than 450 customers and close to 2.4 Tbit/s of data traffic were migrated during live operation, and this was achieved without any impact on the connectivity of customers.

We were also engaged in moves of a different kind in 2018: For almost 10 years, the netmask for IPv4 of the Frankfurt peering LAN was a /22 – allowing up to 1,022 routers to peer with each other. Continuous growth compelled us to extend this netmask to a /21 in mid-2018, doubling the available address space and therefore allowing up to 2,046 routers in the peering



LAN, and requiring the renumbering of some addresses. Growth in recent years has led to a similar need in New York, making the move from a /24 to a /22 netmask necessary, and requiring all customers to renumber their IPv4 interfaces. This changeover was completed in early 2019.

In line with the “Easy” claim in our motto, the migration of DE-CIX 12 allowed DE-CIX to also write history in another sense, with the installation of the first patch robot in an IX anywhere in the world, PatchyMcPatchbot, for which the company received the Global Carrier Award for the “Best Internet Exchange Innovation”. This is indicative of how DE-CIX drives the development of network optimization to further improve our optimization capabilities in terms of automation.

Another way in which we strive to live “Easy Interconnection” is reflected in the new DE-CIX Looking Glass, launched in November 2018. With the new DE-CIX Looking Glass, which comes as a modern HTML5 application also optimized for mobile usage, it is possible to easily search for an AS number, a peer, or a particular IP prefix. The new Looking Glass provides information about the reason why a certain route is rejected by the route server (e.g. due to IRR filters), and also provides an API so that external applications can easily query it. The DE-CIX Looking Glass utilizes the open source projects Alice-LG and birdwatcher, to which DE-CIX contributed substantially.

### **What's coming: Automation and more bandwidth in the focus**

What will the near future bring? Automation will continue to be a key focus in 2019. In terms of network automation, we will launch additional patch robots in Frankfurt at high-density sites. We are also looking at how we can simplify it for our customers to interconnect their network automation tools with our infrastructure. Also on the agenda for the first half of 2019 is the revamp of the DE-CIX customer portal, with the addition of self-service automation features for customers. This will mean that we can allow our customers to directly connect to DE-CIX in such a way that they can use the network automation suite themselves.

Meanwhile, route servers will also remain a priority for us in 2019. DE-CIX already launched RPKI-filtered routing security as a route service early in the year.

Only a few years after 100-Gigabit Ethernet (GE) access technology was first introduced, DE-CIX will be scaling to the next level of its technological progress in 2019. In response to the growing customer demand for more data capacity, DE-CIX will begin to offer 400-GE access technology. The expansion will be realized on the basis of the DE-CIX Apollon platform, which uses Nokia routers as one core component. The 400-GE Nokia line cards will at first be available at DE-CIX Frankfurt, with further DE-CIX locations to follow in due course.





# ***DE-CIX Global and Regional Growth 2018***



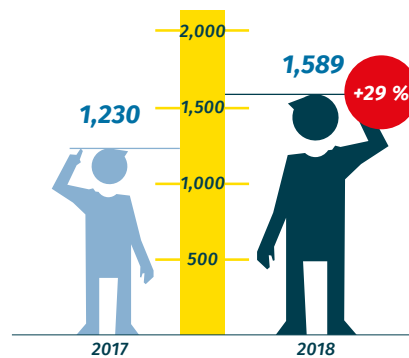
## DE-CIX Global and Regional Growth 2018

The DE-CIX world is continuing to expand, offering connected customers easy interconnection, wherever they need it. To keep pace with the evolving interconnection needs of its customers, DE-CIX has been expanding both its services and its locations around the globe. The locational growth strategy of DE-CIX was strengthened on two fronts in 2018. On the one hand, following the traffic flows from north to south and from west to east, DE-CIX further expanded globally, adding and announcing new locations – such as DE-CIX Lisbon, and the partnerships with MSK-IX in Moscow and BCIX in Berlin – and new enabled sites and access points to a range of existing DE-CIX locations.

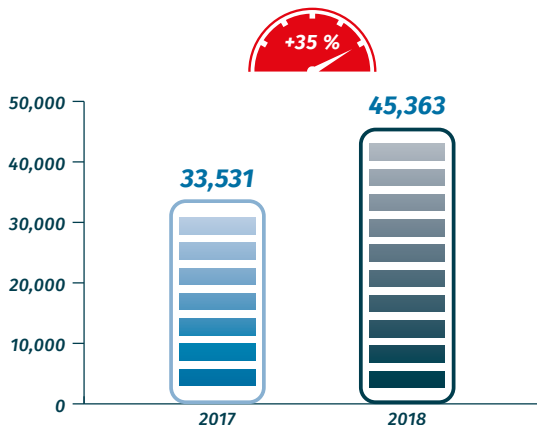
### The bigger picture

DE-CIX further strengthened its position as the world's leading provider of premium interconnection services and operator of Internet Exchanges, both globally and locally, in 2018. The DE-CIX Internet Exchanges in Europe, Asia, India, and the Middle East, as well as in North America, increased the company's consolidated global customer base by just shy of 30 percent to almost 1,600 customers. This also led into an increased overall connected capacity of over 45 Terabits (Tbit), up more than 35 percent from 2017. In addition, global customers' needs for more bandwidth can be seen in the growth of 100 Gigabit Ethernet (GE) ports, which grew by nearly 45 percent to more than 300 ports worldwide. Locational and world records for peak traffic, connected networks, and speed of growth again toppled at DE-CIX hubs around the globe.

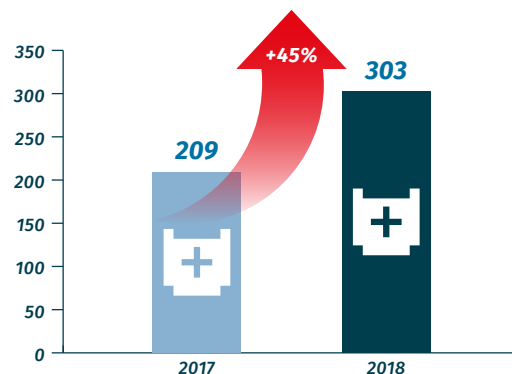
DE-CIX Global Customer Growth 2018



DE-CIX Global Connected Capacity Growth 2018 (Gbit)

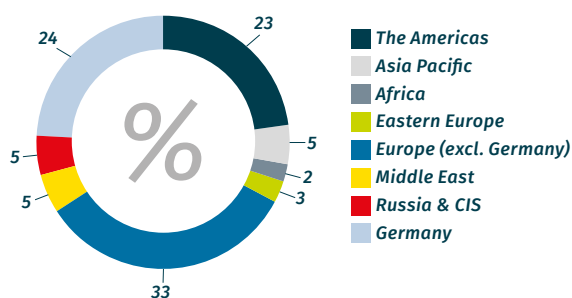


DE-CIX Global 100GE Ports Growth 2018

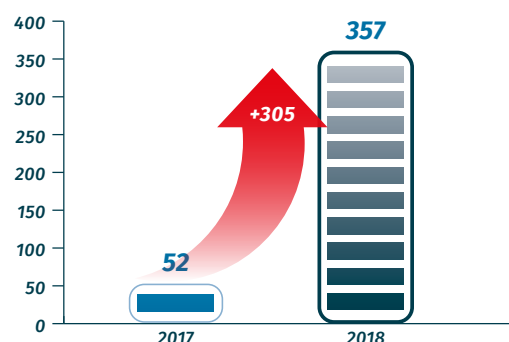




### DE-CIX Global: Geographical Segmentation of Networks



### Orders of DE-CIX GlobePEER Remote Service



### New DE-CIX Services gaining a foothold in the market

In 2017, DE-CIX introduced a new service strategy, allowing the company to respond rapidly to the changing needs of customers in a dynamic global market. Two examples of the services offered in the DE-CIX Service World are GlobePEER Remote and DirectCLOUD.

The GlobePEER Remote service, which allows customers to peer at several DE-CIX locations with just one physical access, was initially launched in 2016 between Frankfurt and New York and is now also available in Dusseldorf, Hamburg, Munich, Istanbul, and Marseille. The overall growth in 2018 went up by a factor of six in comparison to 2017, rising from 52 to 357 orders. The most booked connections were from Frankfurt to other German regional DE-CIX Exchanges, a clear sign that traffic is moving closer to the edge.

The DirectCLOUD service is now available at multiple DE-CIX locations across the globe, enabling customers to access the services of more than 45 certified cloud service providers, including not only large players – such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Partner Interconnect – but also many niche and specialist cloud providers. DirectCLOUD took off strongly in 2018, with 40 data centers and ISPs working actively together with DE-CIX. Considering the demand in 2018, there is a two-digit growth in revenue forecast for the upcoming years.



**Andreas Sturm**  
Chief Business Development  
Officer

### **In the heart of Europe: The DE-CIX home market of Germany**

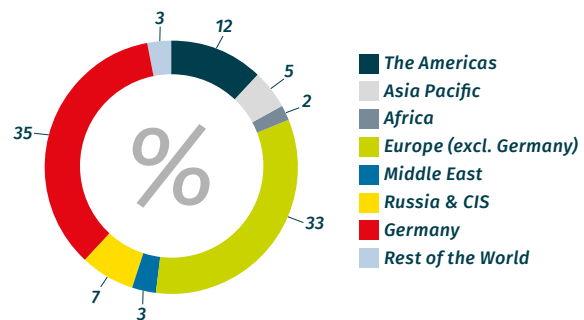
Getting closer to the edge – many of DE-CIX’s activities in the home market of Germany in 2018 were about bringing connected networks closer to users in the dense central-European market. Enormous growth was experienced at the regional exchanges in Munich, Hamburg, and Dusseldorf, as the GlobePEER Remote service kicked in. DE-CIX Frankfurt, at the heart of the German network of exchanges, also continued its record-breaking development.

DE-CIX introduced “Project Reach” with its launching partners euNetworks and GasLINE in 2018. Project Reach enables enterprises to connect in to the DE-CIX world in local data centers, therefore also extending DE-CIX’s reach into more data centers and closer to the edge – in this case, to the small and medium-sized networks. On top of this, DE-CIX and Berlin’s leading Internet Exchange (IX) BCIX established a strategic partnership in early 2018 – marketed as ‘DE-CIX powered by BCIX’ – with the objective of directly connecting the two Internet Exchanges and offering the products of each operator in the locations Berlin and Frankfurt.

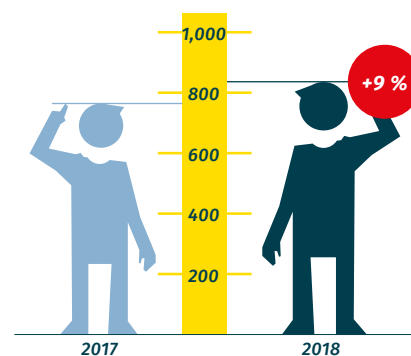
### **DE-CIX Frankfurt: Maintaining top-ranking global position**

At DE-CIX Frankfurt, the world’s leading Internet Exchange, growth continued unabated in 2018. Customer growth was close to 10 percent during the year. The popularity of 100GE ports reflects customers’ ever-increasing demand for bandwidth, with orders growing by more than 40 percent over the year. This had a strong impact on connected capacity, which rose by over 30 percent to 36.59 Terabits. Peak traffic hit a new world record of over 6.7 Tbit/s in late 2018.

### **DE-CIX Germany: Geographical Segmentation of Networks**

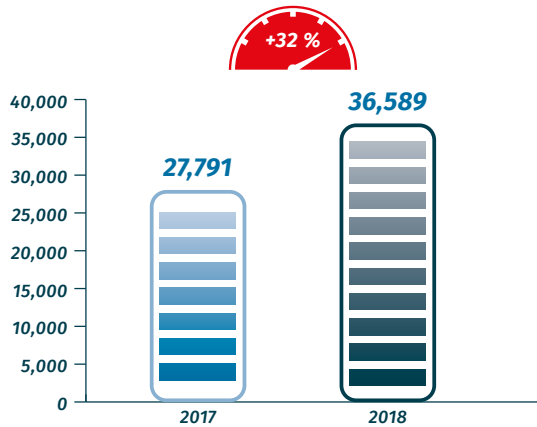


### **DE-CIX Frankfurt Customer Growth 2018**

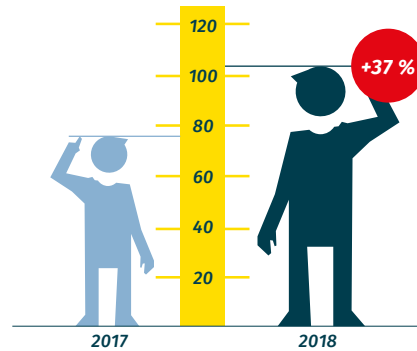




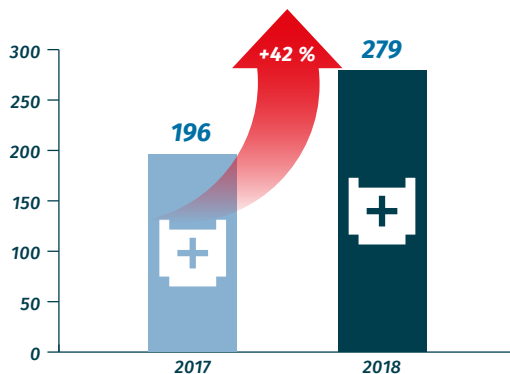
**DE-CIX Frankfurt Connected Capacity Growth 2018 (Gbit)**



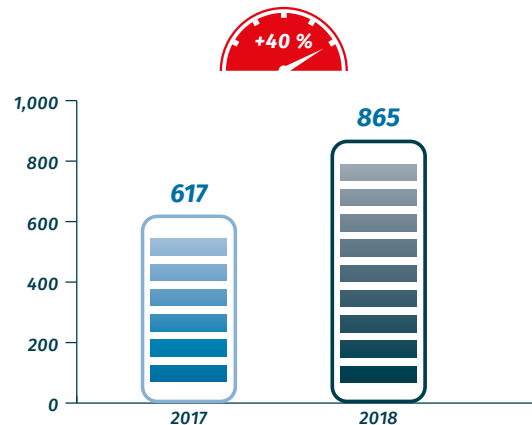
**DE-CIX Germany (excl. Frankfurt) Regional Exchanges Customer Growth 2018**



**DE-CIX Frankfurt 100GE Ports Growth 2018**



**DE-CIX Germany (excl. Frankfurt) Connected Capacity Growth 2018 (Gbit)**



The migration from DE-CIX FRA 7 (Level 3) to DE-CIX FRA 12 (Equinix) in August was the largest migration in the history of DE-CIX, and took place seamlessly during live operations.

### Highlights from the German regional exchanges

The GlobePEER Remote service took off strongly at the regional exchanges DE-CIX Munich, DE-CIX Hamburg, and DE-CIX Dusseldorf. Networks are availing of this service

to bring their content into the regional environments, with traffic clearly flowing outwards from the Frankfurt hub to the regional exchanges. Other services on offer at the regional exchanges, such as GlobePEER, DirectCLOUD, and MetroVLAN, also gained in popularity.

The German regional exchanges experienced a consolidated growth of over 37 percent in customer numbers and over 40 percent in connected capacity.



**Theresa Bobis**

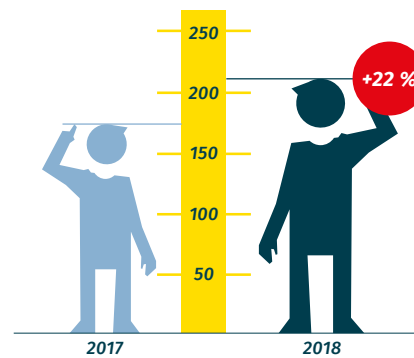
*Regional Director South Europe*

### DE-CIX rising in Southern Europe – creating new digital hubs

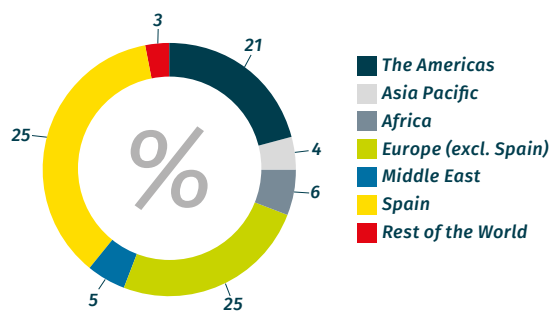
As traditional global traffic flows are changing and heading south, DE-CIX took the right steps years ago in establishing its Internet Exchanges in Madrid, Marseille, and Palermo. IP traffic is forecast to triple by 2021 – with African, Middle Eastern, and Asian traffic at the forefront of growth. This will especially affect the Mediterranean coast and Iberian Peninsula. In line with these trends, DE-CIX also announced in late 2018 the forthcoming opening of its newest Internet Exchange on the Iberian Peninsula in the Portuguese capital of Lisbon. Lisbon itself is the sea cable hub of the Iberian Peninsula, with many major sea cable connections landing there from Western Africa and the Americas. We expect to witness a new regime of transatlantic traffic flows, with the Iberian Peninsula as the new center of gravity. Connected customers can meet European networks and international content providers there, instead of needing to go so much further north. DE-CIX Lisbon will be located at the carrier-neutral Equinix data center in Lisbon.

In 2018, the predicted “rise of the south” can be clearly seen with a look at the progress of the three existing Southern European DE-CIX Exchanges. Growth of more than 22 percent in new customers was experienced in the region during 2018. At DE-CIX Marseille, the number of ASNs grew by a substantial 41 percent.

### DE-CIX Southern Europe Customer Growth 2018

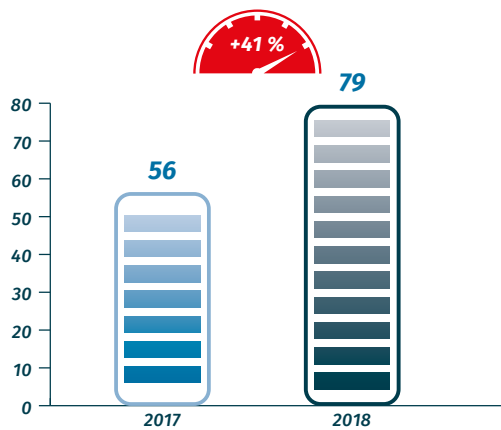


### DE-CIX Southern Europe: Geographical Segmentation of Networks

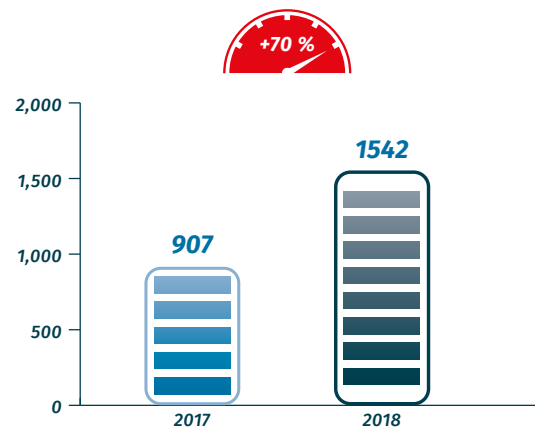




**DE-CIX Marseille Growth in Connected Networks 2018**



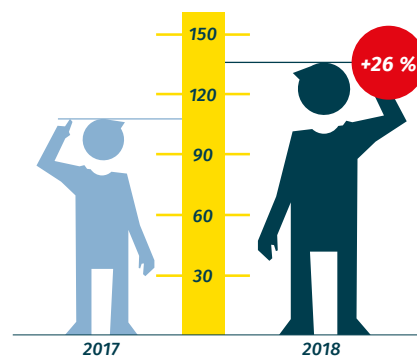
**DE-CIX Madrid Connected Capacity Growth 2018 (Gbit)**



### Highlights from DE-CIX Madrid

The fastest growing IX globally, DE-CIX Madrid experienced another exciting and successful year in the Spanish capital. More than 135 customers were connected by the end of 2018, which is a growth of 26 percent in comparison to 2017. A majority of customers are demanding greater bandwidth, meaning orders of 10GE ports rose strongly in 2018 (+33%) and the number of 100GE ports connected to the platform tripled. As a result, the connected capacity also grew by 70 percent to over 1,500 Gbits by the end of the year.

**DE-CIX Madrid Customer Growth 2018**





**Bülent Şen**

Regional Director Turkey



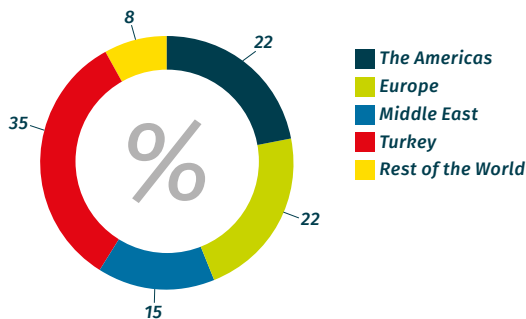
**Marco Brandstaetter**

Regional Director Middle East  
& India

### Interconnecting two continents – DE-CIX Istanbul

With its distributed infrastructure, DE-CIX Istanbul is the world's only Internet Exchange to serve two continents – Europe and Asia – in one country. It gives access to a variety of networks via various data centers across Turkey, including in Istanbul, Ankara, Bursa and İzmir, and serves leading global and regional networks. In 2018, DE-CIX Istanbul saw strong growth of close to 30 percent in 10 GE ports. This is due to existing customers – such as national and international operators and content delivery networks – upgrading their existing access to the IX. In particular, there was increased interest from international networks. As a result, the connected capacity in 2018 also rose by 27 percent, finishing at 327 Gbits. On top of this, peak traffic almost doubled from 45 Gbit/s to 90 Gbit/s. DE-CIX Istanbul was also the first entity within the DE-CIX Group to sell the DE-CIX DirectCLOUD services outside of Germany.

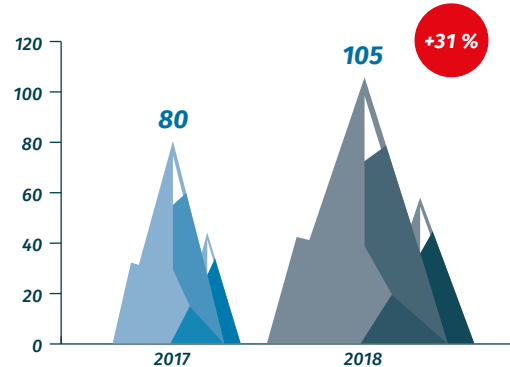
#### DE-CIX Istanbul: Geographical Segmentation of Networks



### Solid growth at UAE-IX powered by DE-CIX in Dubai

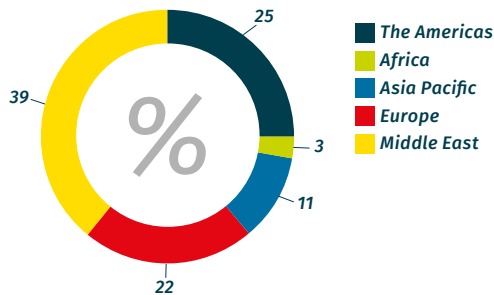
During 2017, UAE-IX was upgraded to the powerful DE-CIX Apollon technology platform and made 100GE-ready. One milestone in 2018 was the connection of the first leading global content provider with 100GE to UAE-IX. There was also growth of more than 19 percent in new customers and the total connected capacity rose by 29 percent to more than 550 Gbits in 2018. Added to this, peak traffic grew continuously over the year and crossed the 100 Gbit/s mark, an increase of more than 30 percent in comparison to 2017.

#### UAE-IX Peak Traffic (Gbit/s)





#### UAE-IX: Geographical Segmentation of Networks

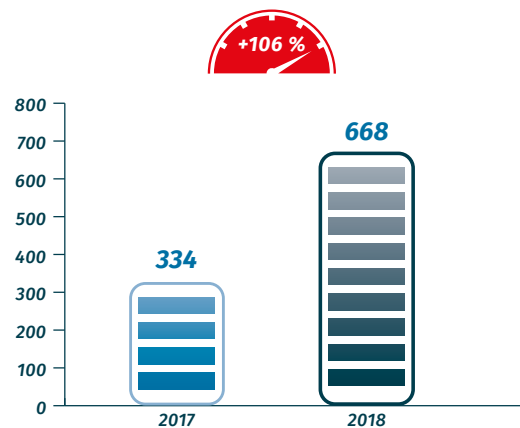


#### Mumbai IX on the rise in 2018

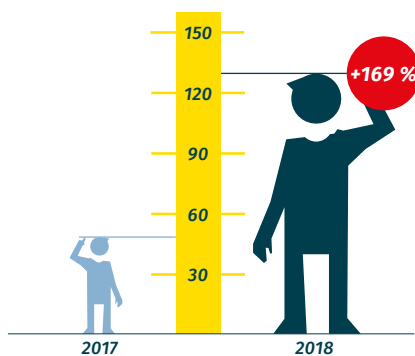
Added to the DE-CIX family as a joint venture in late 2017, Mumbai IX made significant progress in 2018. It has now become the largest Internet Gateway for the Indian sub-continent. A total of 129 customers were using DE-CIX services by the end of 2018, a growth rate of close to 170 percent in comparison to 2017. In addition, the total connected customer capacity rose by 106 percent to more than 650 Gbits.

In early 2019, DE-CIX also announced that it will expand its business activities to the Delhi, Kolkata, and Chennai markets in due course. The three new Indian IXs will run as DE-CIX Delhi, DE-CIX Kolkata, and DE-CIX Chennai.

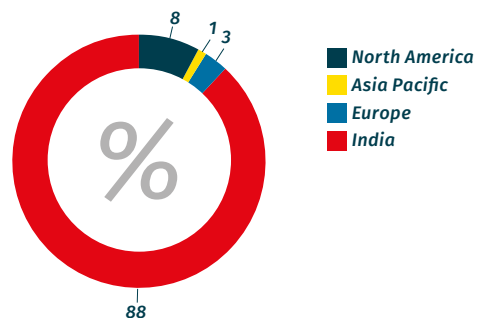
#### Mumbai IX Connected Capacity Growth 2018 (Gbit)



#### Mumbai IX Customer Growth 2018



#### Mumbai IX: Geographical Segmentation of Networks





**Maxim Pozdnyakov**  
Regional Director Northern & Eastern Europe



**Ed d'Agostino**  
Vice President DE-CIX North America

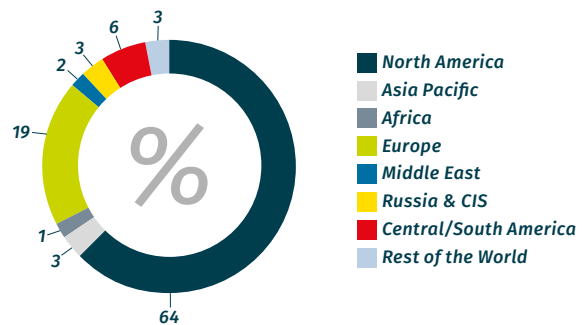
### **The new MSK-IX powered by DE-CIX – DE-CIX offers peering in Russia**

In late 2018, DE-CIX and Russia's leading Internet Exchange Company, MSK-IX, established a strategic partnership. Initially, this partnership has the objective of offering DE-CIX customers in Frankfurt the opportunity to peer directly at MSK-IX. For this purpose, the two Internet Exchanges are interconnected and offer the products of each operator in the respective locations, Moscow and Frankfurt. The Moscow location is marketed as 'MSK-IX powered by DE-CIX'. As a result, customers in Frankfurt have access to a 'One-Stop Shop' for the complete service portfolio in Russia.

### **Key milestones reached by DE-CIX North America in 2018**

DE-CIX North America, the fastest growing carrier and data center-neutral U.S. Internet Exchange operator, offers an Internet Exchange platform across major carrier hotels and data centers throughout the New York and New Jersey metro markets, and an open and data center-neutral Internet Exchange in the Dallas-Fort Worth market.

#### **DE-CIX North America: Geographical Segmentation of Networks**

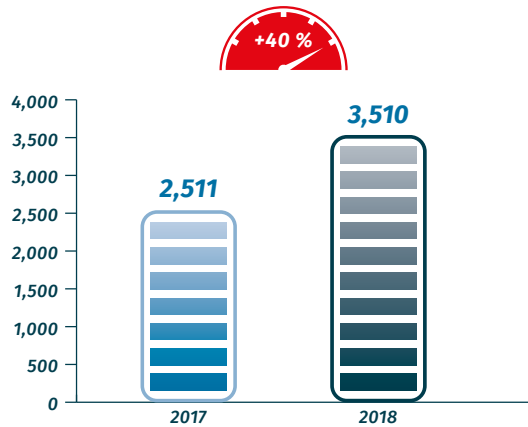


### **The leading Internet Exchange in the metro region – highlights from DE-CIX New York**

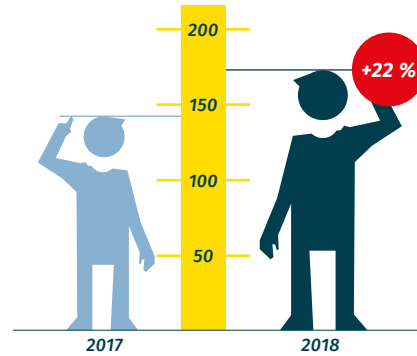
2018 was a very successful year for DE-CIX New York. Just four and a half years in the market, the fastest-growing IX in the New York metro area exceeded a key milestone of 200 Autonomous System Numbers (ASNs). This brought it to the number-one position as the largest carrier and data center-neutral Internet Exchange –



**DE-CIX New York Connected Capacity Growth 2018 (Gbit)**



**DE-CIX New York Customer Growth 2018**

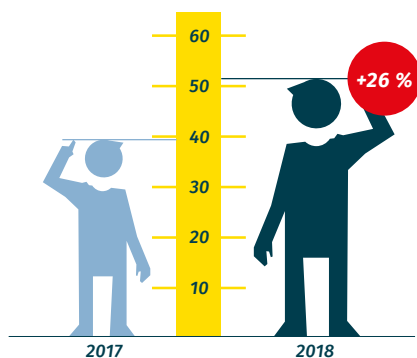


in terms of connected ASNs – in the New York/New Jersey/Long Island metro market. Accentuating this key milestone is the fact that nearly fifty percent of the networks are exclusively available via DE-CIX in New York, and over 30 percent of networks are only available in North America via DE-CIX New York. Customers at DE-CIX New York grew by a very healthy 22 percent, with a 70 percent increase in orders for 100 GE ports. On top of this, connected capacity grew by 40 percent to 3,510 Gbit by the end of the year. DE-CIX New York has a special significance for the South American market: It is the Internet Exchange with the most networks from South America and is thus regarded as a “gateway” between Europe and South America.

### Highlights from DE-CIX Dallas

DE-CIX Dallas, launched in September 2016, provides peering services with access across multiple data center facilities throughout the greater Dallas metro market. Dallas has been strategically important to the south of the United States since the dawn of telecommunications and is an important location for the interconnection of Mexican data traffic in the United States. DE-CIX Dallas is the region’s fastest-growing carrier and data center-neutral Internet Exchange, enabling improved network performance for operators throughout the southwest region via transport connections, as well as for operators on location in Dallas. DE-CIX Dallas experienced significant growth in 2018, with the number of customers growing during the year by nearly 26 percent to over 50.

**DE-CIX Dallas Customer Growth 2018**



# ***Holding ground in the fierce global competitive environment***







**Sebastian Seifert**  
Chief Financial Officer,  
DE-CIX Group AG

## Financial Results

DE-CIX was able to hold its ground in the fierce global competitive environment in the 2018 financial year. In the consolidated annual financial statement for 2018, the global turnover of all company parts grew by 12 percent in comparison to the previous year to close to 35.7 million Euro. Revenues from international activities jumped in comparison to 2017 by more than 27 percent and represented more than 11 percent of total turnover

in 2018. The EBIT for 2018 amounted to 2.2 million Euro and the EBITDA 4.2 million Euro. In the 2018 financial year, no use was made of foreign capital.

The Profit and Loss Account below provides further details on the consolidated global results of the DE-CIX companies in 2018.

### DE-CIX Global Consolidated Profit and Loss Account 2018

<i>In thousands of EUR</i>	<b>2018</b>	<b>2017</b>
<b>Turnover</b>	<b>35,704</b>	<b>31,862</b>
Inventory Change	0	0
<b>Operating Result</b>	<b>35,704</b>	<b>31,862</b>
External Services / Cost of Goods	0	0
<b>Gross Income</b>	<b>35,704</b>	<b>31,862</b>
Other Operating Income	503	799
Personnel Costs	-8,778	-7,222
Depreciation	-2,036	-1,829
<b>Other Operating Costs</b>	<b>-23,186</b>	<b>-22,691</b>
<b>Operating Result/EBIT</b>	<b>2,207</b>	<b>900</b>
Interest Earned	95	3
Interest Paid	-47	-229
<b>EBT</b>	<b>2,255</b>	<b>691</b>
Tax	-933	-649
<b>Annual Profit/Loss</b>	<b>1,322</b>	<b>42</b>
For information: EBITDA	4,243	2,750

***Always at the forefront  
of the digital revolution***



**Ivo Ivanov**

Chief Operating Officer, DE-CIX Group AG

## Strategic Outlook

### *DE-CIX: Always at the forefront of the digital revolution*

Ever since its inception, DE-CIX has been motivated by the ambition to improve the quality of the Internet and access to information around the globe, and to grow new markets. This ambition remains just as valid today, as we pave the way for the 2020's and 2030's. In the digital world of today and tomorrow, access to global data flows is as essential for business as the provision of electricity was for the industrial world. DE-CIX, and its customer base that interconnects over DE-CIX's ever-growing global family of Internet Exchanges, brings connectivity to the world, and will continue to provide access to information and digital services to an increasing number of developed and developing markets in all corners of the world.

### *DE-CIX around the world – geographically placed where our customers need us to be*

To date, we have created and are growing eighteen Internet Exchanges on four continents, including Europe, North America, the Middle East, and India. Our goal for the coming years is to enable new and existing ecosystems in all major telecommunication markets across the globe. The geographic coverage of DE-CIX, paired with the variety of our interconnection services, will allow connected networks, whether they are acting regionally or globally, to get DE-CIX interconnection services customized to their needs from both a geographical perspective and in terms of their respective business models.

### *Digital is reshaping how business is done*

We are at the cusp of a completely new age in global economics, with organizations redefining their activities and their sectors on the basis of digitalization. As they become more digital, organizations will need a new interconnection service regime for their new services. New and transformative technologies, like IoT, Artificial Intelligence, and 5G are accelerating the pace of change in markets around the globe.

Long and well-established digital companies are changing their business models and going into new sectors. The classic network operator as the historical core customer of DE-CIX is no longer just a network operator: tech companies are entering different sectors and the variety of different products is increasing. We no longer have the clear delineation of network operators that we had even five years ago.

But it's not only the digital companies that are transforming. Old industry is redefining itself and its products in the digital era. Organizations are leveraging their digital strength to reshape their own business models, in turn transforming how business is done within and across entire sectors, including the automotive/mobility, healthcare, finance, and media sectors.

Classic network operators as we know them today are historically the core for DE-CIX, and remain key to DE-CIX's activities. However, we see a need for new interconnection services for enterprises, paired with cloud connectivity and with global capacity interconnection needs.



### ***Digital markets demand high-performance, flexible, and customized interconnection***

For this reason, the DE-CIX platforms and ecosystems need to be able to cater for a variety of different services. The interconnection regime in the future will require flexibility in terms of different interconnection models and will need to cater for different types of capacity needs, such as peering, cloud connectivity, security services, and many more.

To satisfy modern enterprises' requirements for reliable, high bandwidth, and secure connectivity within their exclusive supply chain networks, DE-CIX is preparing the ground for the "Enterprise-IX". Enterprise-IX will tailor the benefits of the cutting-edge DE-CIX Apollon connectivity platform to the requirements of digital enterprises, with specialized security services, SLAs, and easy-to-manage connectivity to distributed production facilities and corporate partners. The goal of Enterprise IX will be to generate greater value for verticals through world-class connectivity, allowing them the freedom and flexibility to optimally profit from the digital revolution.

### ***DE-CIX: Growing vibrant ecosystems to serve customers' diverse needs in connectivity marketplaces across the globe***

At DE-CIX, we have created extremely successful and vibrant interconnection ecosystems over a period of decades. We are using these ecosystems to introduce new services following the route of innovation, disruption, and neutrality. At the heart of the DE-CIX strategy is the continued promotion of the direct, cost-efficient, and resource-efficient use of interconnection.

And we at DE-CIX will continue to follow the path of terrestrial and sub-sea traffic flows; new, non-terrestrial dimensions are now being added to global connectivity potential. The combined power of the DE-CIX interconnectivity platforms and the ever-stronger satellite industry can be leveraged to bring connectivity solutions to hard-to-reach corners of the planet, opening up new locations and new market potential for connected customers. With the vision of the "Space-IX", DE-CIX continues to lead the way in developing innovative connectivity solutions for a changing world, and wants to do justice to its mandate of improving the quality of the Internet and access to information around the globe.

With these approaches and with all our activities, our goal is to improve the quality of the Internet and access to information wherever it is required. Digital infrastructure is essential to allowing people to gain access to information, education, and improved health care services, and to have the chance to enjoy full and equal participation in digital life. This is all the more important in rural areas that do not have proper connectivity today.

We invite everybody who is digital today, or is on the road to digitalization, to think about new ways of using our interconnection services. The DE-CIX ecosystems as a whole and the participants within these ecosystems create the ideas together with us to map the journey into an interconnected digital world.

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