

STUDY OPENSTACK 2018

A current study project
in six European core regions

by



and its
exclusive study partner



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The OpenStack train gathers pace

First of all, the good news: following some dogged persistence, the topic of the Cloud has now caught on in most European countries. Almost half of all businesses now use Cloud services. In this respect, however, the big three – i.e. Microsoft, Google and AWS – dominate the Cloud business in Europe. Many businesses now consider OpenStack to be an option – although right now, deciding to use it is something of a bet on the future.

Considering the findings of the study, it is clear that only half of European decision-makers in the area of IT are familiar with the term OpenStack. This means that further clarification work appears necessary in the market in order to anchor the topic in the awareness of those responsible more deeply. OpenStack's baptism of fire is now over, and it can point to major customers such as CERN, Disney, Time Warner Cable and Walmart.

At the same time, however, it is necessary for all of those who champion OpenStack to foster a sense of confidence among the users,



Jürgen Hill,
Team Leader for Technology
and Leading Editor,
COMPUTERWOCHE magazine

as the key supporters that are collaborating in the development of the platform, such as AT&T, Hewlett-Packard Enterprise, Intel, Huawei, Cisco and IBM, do not appear to be sufficient for alleviating the concerns of the decision-makers. Above all else, doubts surround the availability / fail-safety, reliability, as well as possible compliance risks.

Even if the OpenStack service providers are faced with a considerable amount of work, there is one result of the study that they can be pleased about: OpenStack plays a key role in the Cloud strategy in many European companies. Even if the users of OpenStack primarily expect future-proofness and a higher degree of flexibility, the service providers shouldn't forget one thing: when choosing the Cloud platform and the service provider, the price-performance ratio is among the key decision-making criteria. Such an argument may be the best response to any scepticism.

So, here is our "OpenStack" study, and I wish you happy and informative reading.



Disruptive inspiration

Disruptive ideas have been around for a long time. As long ago as 1880, Thomas Edison turned the world of lighting upside down with the first ever market-ready light bulb. For this purpose, he required infrastructure in the form of an electricity grid, however. This was available in two forms, direct and alternating current. Although alternating current, which was more widely used and remains so to this day, offers advantages, the inventor insisted on using direct current for his standalone solution.

In terms of conquering the market, this decision set Edison several years back, until his company finally changed over to alternating current in the year 1896.

This experience can also be transferred to Cloud-native applications. It is widely agreed that the Cloud is the basis for the digital transformation. Two thirds of all businesses already make productive use of the Cloud. The question remains open, however, as to how many of them are still in an orientation phase, particularly in terms of the choice of the technological basis for the Cloud infrastructure. This study reveals that more than 62 percent of businesses are still in the orientation phase and evaluating a combination of several offerings. In this respect, it is noteworthy that at present, no individual provider of Cloud services has a market share of more than 33 percent.

In choosing their Cloud service provider, the impression is given that businesses attribute considerable importance to avoiding a vendor



Dr. Clemens Hardewig,
VP Delivery Open
Telekom Cloud

lock-in, and therefore plan to work with several service providers from the outset. Multi-Cloud approaches of this kind are especially successful if the application programming interfaces (APIs) of the offerings are compatible. Therefore, it should come as no surprise that more than half of the top 15 Cloud service providers offer a solution which is based on OpenStack. The open platform, which is developed by a global community of software developers and to which more than 300 enterprises contribute, therefore plays an important role with more than 71 percent of the study participants, forming part of their Cloud strategy.

Deutsche Telekom plays an active role in the OpenStack community, and with the Open Telekom Cloud, we offer an attractive Public Cloud offering on the basis of OpenStack. Businesses whose applications are compatible with the OpenStack APIs can operate these without any problem and without adaptations in our secure Public Cloud.

The fact that openness to new ideas pays in the long run was something that Edison only recognised at the end of his career. He described his battle over electricity as his biggest mistake. Alternating current remains the main method of distributing electrical energy to this day. You can read about the views of European businesses on OpenStack as an open basis for the conceptualisation and operation of Cloud solutions in this study.

I hope that you gain fascinating insights and inspiration for your Cloud strategy.

Yes to using the Cloud, but ...

47.8 percent of businesses have been making productive use of the Cloud for some time, but most (initially?) only use it for non-critical standard applications.

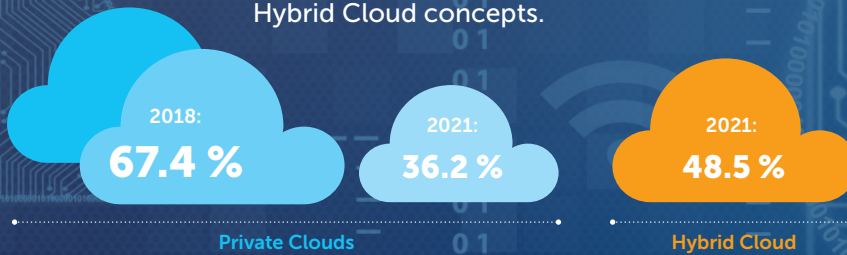


Management Summary

Overview of the key findings

Private or Public Cloud? Hybrid!

The use of Private Clouds remains dominant: 67.4 percent. It isn't the Public Cloud that will benefit from the future decline however, but solely Hybrid Cloud concepts.

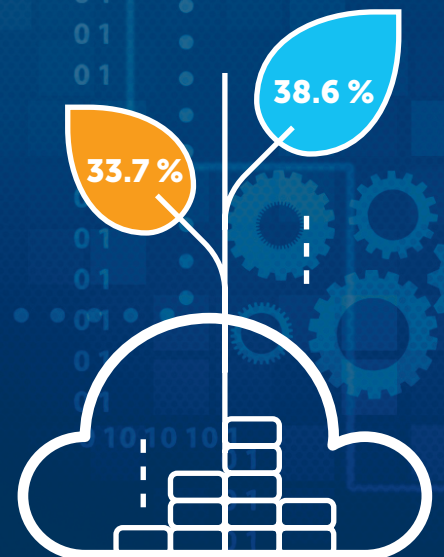


A rosy (IT) future

Above all else, the users of OpenStack are hoping for **future-proofness** and **flexibility**.

Not necessarily disruptive

The IT evolution is slowly taking place in the Cloud. For the most part (to start with?), the Cloud is a straightforward replacement for traditional IT workloads.





It's Greek to me

A large share of IT managers does not feel sufficiently informed about OpenStack. Almost one in four doesn't even know what OpenStack is.

The price has to be right – and a little more.

The previous scepticism to the Cloud is ebbing away. It is being replaced by high aspirations regarding Cloud platforms and service providers.

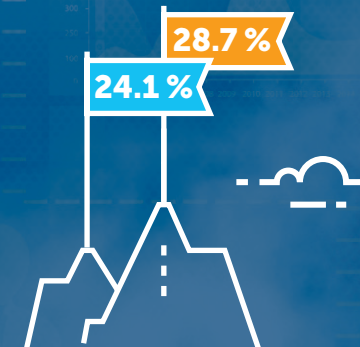
OPEN SOURCE
 Service Level Agreements
OpenStack-Compatibility
 Helpdesk Function **Scalability**
 Technical Personnel
Technical Interfaces (APIs)
 MANUFACTURER INDEPENDENCE
Price-Performance Ratio
 Platform Services **QUALITY**
Sector Know-How
 Technical Know-How Data Protection
 DEVELOPMENT ENVIRONMENTS

Four out of ten businesses

now use OpenStack:
 18.9 percent for (quite) a long time,
 19.7 percent since more recently.
 Another fifth are planning to use it.



OpenStack is gathering pace



It needs to be reliable

In terms of OpenStack, users talk of certain challenges that need to be resolved: **fail-safety** and **reliability** of the platform are particular discussion topics.

The key findings in detail





1. The Cloud can be right – with caution.

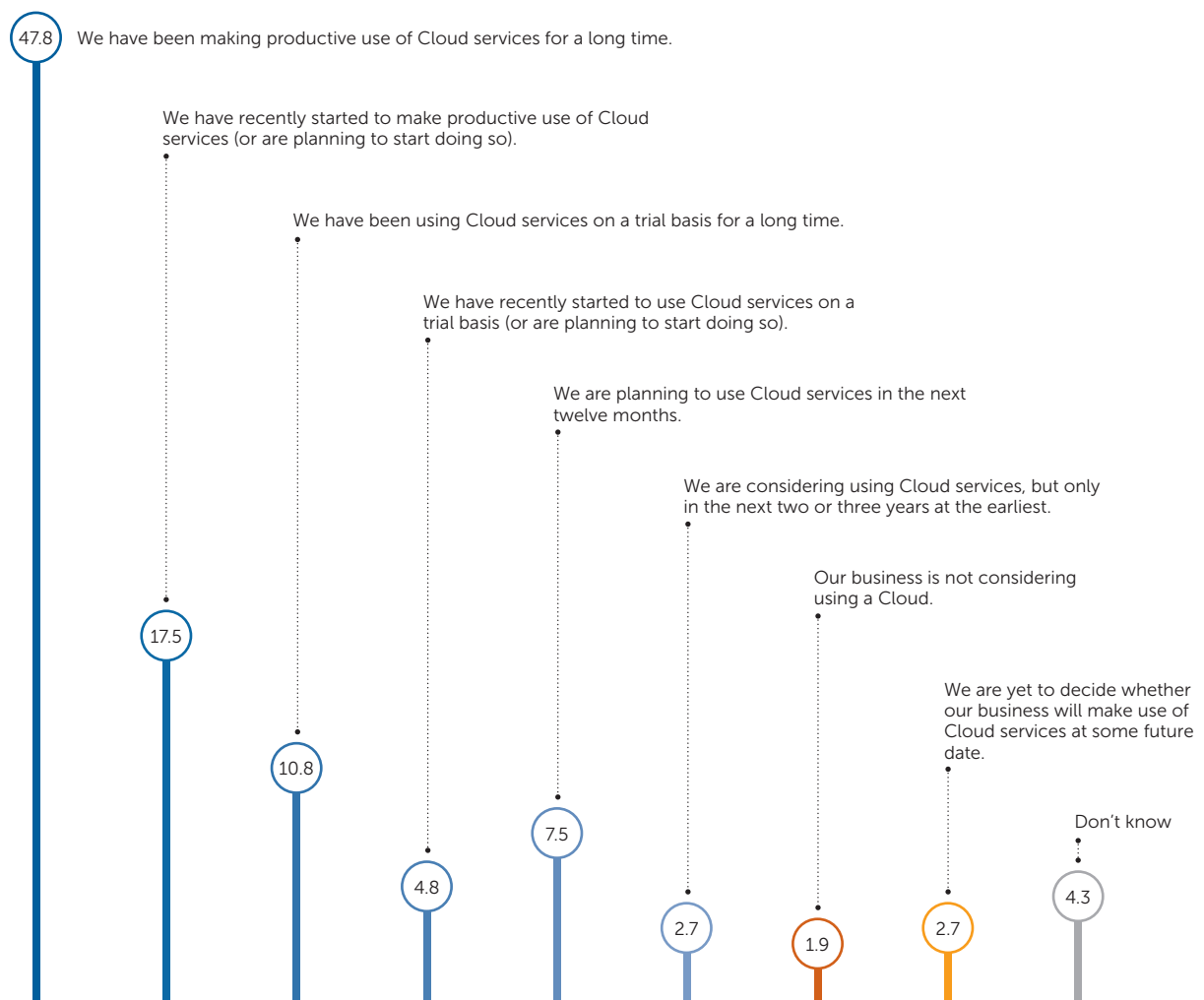
The use of a Cloud in some form or other is very widespread – but sensitive data and critical business applications mostly remain in-house.

The scepticism has dissipated, and working with and in the Cloud has become part of daily life: two thirds of businesses now use one of the different manifestations of Cloud Computing. And almost half of those surveyed reported that Cloud services have been in productive use in their business for a long time.

As the study shows, however, one third of the users only operate non-critical or standard applications in the Cloud. Just 15 percent entrust it with their business-critical applications, and only one in twelve businesses have moved their complete IT services to the Cloud.

Please describe the way in which your business makes use of Cloud services.

Details in percent. Basis: n = 372



2. Increasingly in the Clouds – in hybrids.

Cloud Computing is encompassing more and more areas of IT, whereby Hybrid Clouds are the strategic choice.

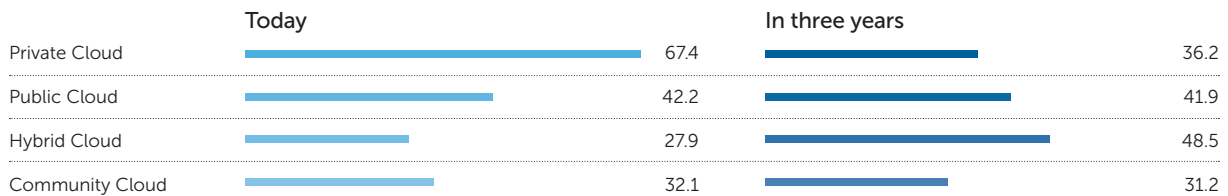
More than two thirds of businesses are using Software-as-a-service. Platform- and Infrastructure-as-a-service are used by one in two businesses, with many more planning to do so.

The Private Cloud, which is used by two thirds of businesses, is currently dominant. However, according to the users' plans, over the next three years, its standalone use is set to fall to 36 percent.

In this respect, it isn't the Public Cloud which is used by approximately 42 percent of businesses that is gaining in importance, however. On the contrary, it is Hybrid Cloud concepts and approaches. These are now being used by one in four businesses – a proportion which is set to double over the next three years.

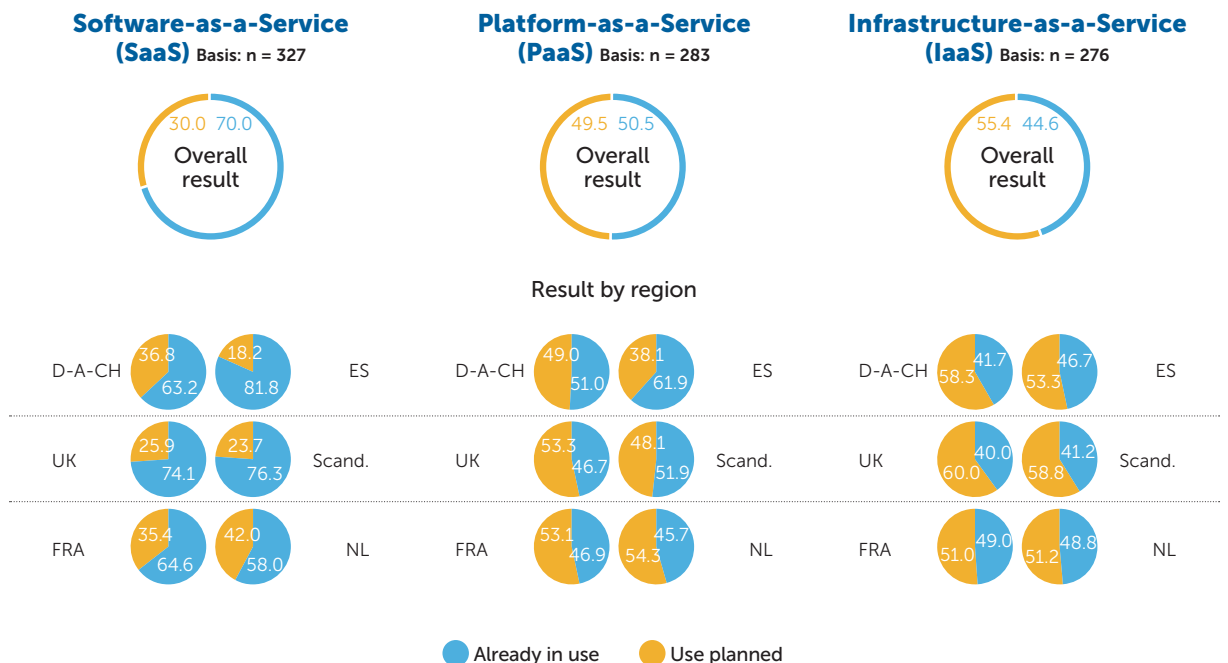
What kind of deployment models and/or delivery models is your business currently using? How is that set to look in three years' time?

Details in percent. Several answers possible. Basis: n = 365



Which of the following types of Cloud services are already used in your business and which in particular are planned for use?

Details in percent.





3. The key factor: the price is right.

No surprises: when deciding on a Cloud, the price-performance ratio is key. On closer inspection, however, the selection processes are much more complex. There is a wide range of different criteria, all of which are important.

Accounting for 30 percent, the key criterion for a choice of Cloud offerings is the price-performance ratio. Related to this is the fact that one in four users values the quality of the service.

Otherwise, the standards of the users are very different and the requirements are very specific. Between 15 and 25 percent mention a total of 16 different factors.

Frequent criteria in the public discussion such as compliance, data protection, data security and the GDPR only have a middling ranking (20 percent) in the user evaluation. Manufacturer independence, OpenStack compatibility and Open Source are even less important to businesses (16 percent).

According to what criteria does your business choose its Cloud service provider and/or Cloud platform?

Details in percent. Several answers possible. The top 15 responses to 22 possible answers.
Basis: n = 365

Price-performance ratio	30.1
The quality of the platform services offered	25.5
Scalability	24.1
Technical know-how	22.5
Availability of the technical personnel who know how to use the platform	21.4
Test and development environments	20.0
Availability of application programming interfaces (APIs)	19.5
Compliance factors, data protection, data security, GDPR	19.5
Helpdesk Function	18.4
Scope/number of platform services offered	16.7
Sector know-how	16.7
Service level agreements	16.4
Manufacturer-independent Cloud technology	16.4
OpenStack compatibility	16.2
Open Source as the basis of the platform	15.9

4. The IT evolution is slowly taking place in the Cloud.

Most users make use of the Cloud as a simple replacement for traditional IT workloads, and not for new technological concepts.

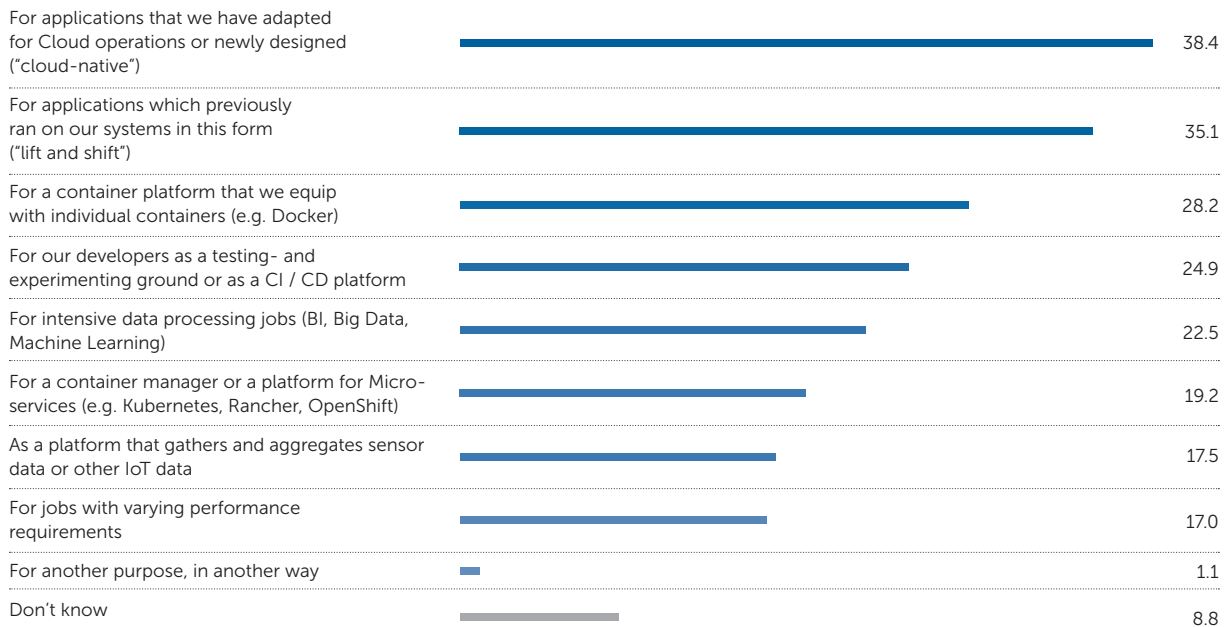
One third of businesses have moved existing applications directly to the Cloud, while 40 percent have adapted such applications so they are cloud-native or redesigned them.

The Cloud is only used as a test environment or CI/CD pipeline or for intensive data processing work, such as Business Intelligence, Big Data or Machine Learning by fewer than a quarter of the users.

Its use as a Container Platform has only caught on at 28 percent of businesses, and as a Container Manager or for Microservices at 19 percent. So far, the possibility of using the Cloud as a platform for sensor data or as an aggregator in the Internet of Things is only considered by 18 percent of users.

How do you use your Cloud platform?

Details in percent. Several answers possible. Basis: n = 365



5. The information deficit is hampering OpenStack.

A considerable proportion of IT managers does not feel sufficiently informed about OpenStack.

However, almost one in two of those surveyed are familiar with the term OpenStack. And yet: 30 percent don't have any detailed knowledge of it. And almost one in four admits to never having heard of OpenStack or not having any idea of what the term actually means.

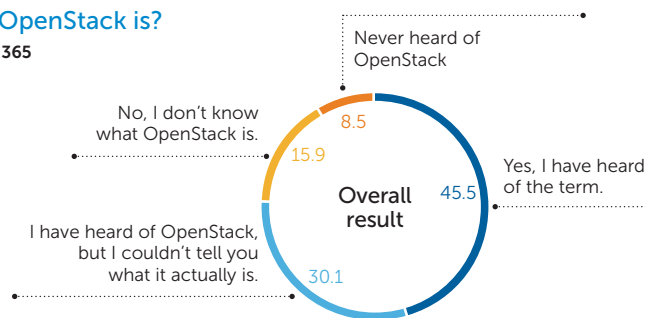
More than two thirds of those responding agreed with the statement that OpenStack would only be considered in their business or use in the Private Cloud.

A majority of those surveyed are aware that they are not yet able to correctly assess the possibilities offered by OpenStack. Education and training are certainly necessary when only one in four claim to be in the picture.

Almost 70 percent are convinced, however, that the use of a Cloud only makes sense with the simultaneous use of automation tools.

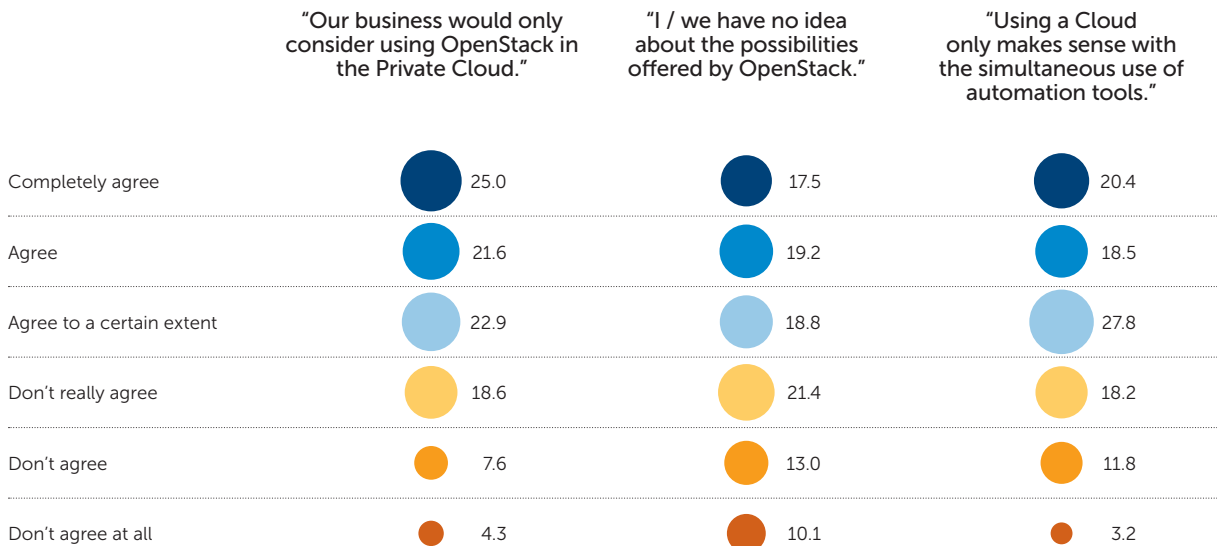
Do you know what OpenStack is?

Details in percent. Basis: n = 365



To what extent do you agree with the following statements regarding OpenStack?

Details in percent. Assessment on a scale of 1 (completely agree) to 6 (do not agree at all). Basis: n = 328 / 308 / 313



6. The trend towards OpenStack gathers pace.

Despite the feeling of not knowing enough about OpenStack, its potential is recognised nonetheless. OpenStack is on the IT agenda and is making its way into the strategic considerations.

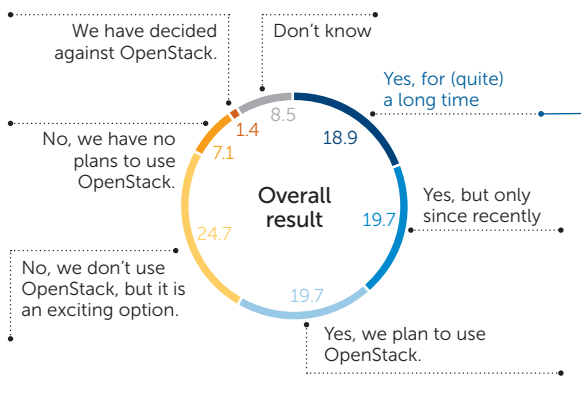
One in every five IT organisations in Europe have now been using OpenStack for a long time. The fact that another fifth has recently started to use it points towards an increasingly widespread use of OpenStack.

The trend towards OpenStack is therefore clear by the fact that one in five businesses are planning to use it, and one in four are considering its use as an option. OpenStack is not considered as an option by fewer than ten percent of those surveyed.

30 percent of the businesses consider OpenStack to play an important role in their Cloud strategy. For approximately 20 percent, OpenStack plays a key role or is – at least – part of their Cloud strategy. Another quarter believes that the platform will gain in strategic relevance.

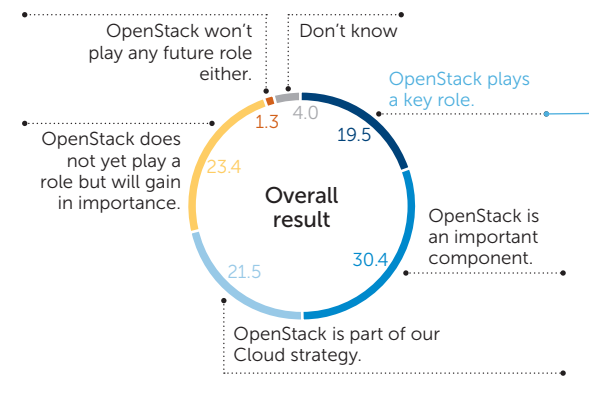
Does your business use OpenStack?

Details in percent. Basis: n = 365



What role does OpenStack play in the Cloud strategy of your business?

Details in percent. Basis: n = 303



Result by region

Region	Does your business use OpenStack?	What role does OpenStack play in the Cloud strategy of your business?
D-A-CH	14.8	17.0
UK	26.2	23.6
FRA	24.2	24.5
ES	19.7	18.5
Scandinavia	14.5	16.7
NL	13.8	15.2

7. OpenStack stands for the future of IT.

Above all else, the users of OpenStack are hoping for future-proofness and flexibility.

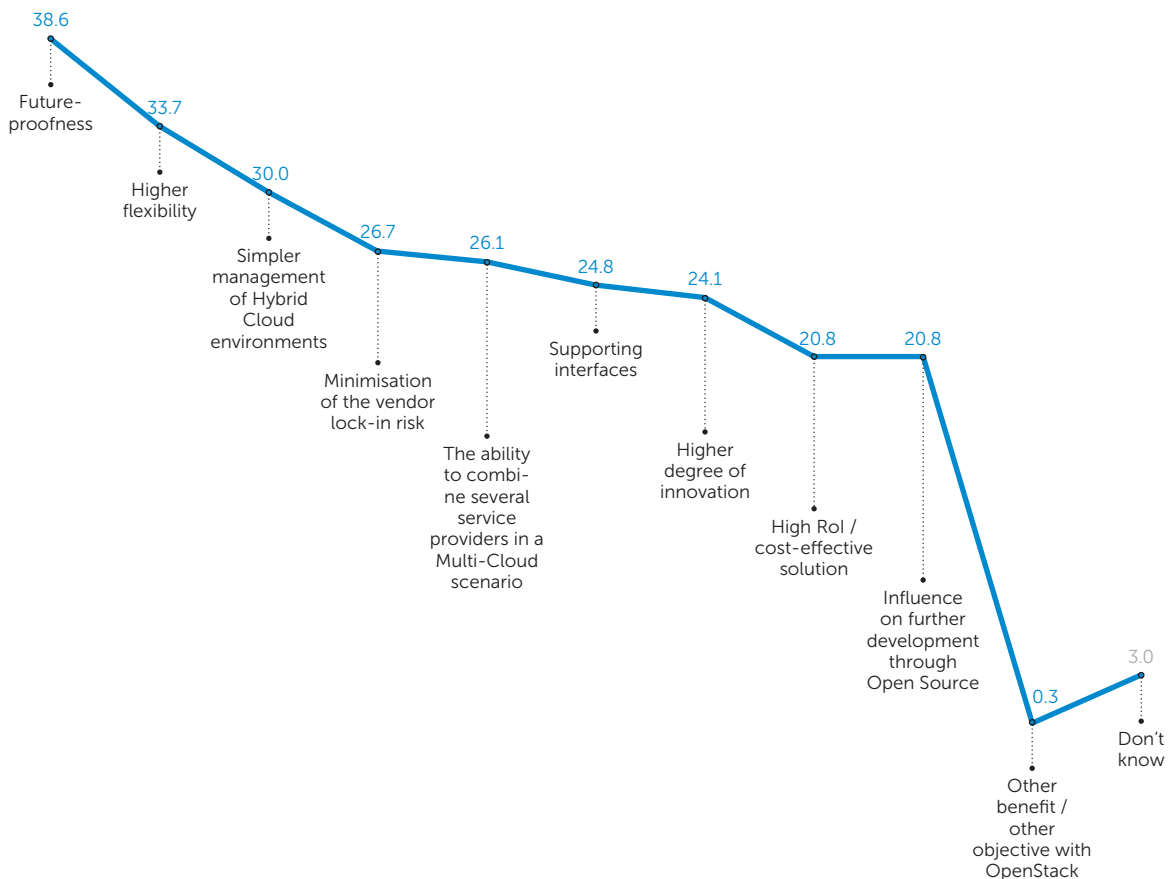
More than two thirds of businesses hope that OpenStack offers them future-proofness and greater flexibility.

The hopes for being able to manage such environments with OpenStack more easily are also high – which isn't surprising considering the orientation to Hybrid Clouds (30 percent). 26 percent hope to be able to combine several service providers via the platform in the form of a Multi-Cloud scenario.

Avoiding a vendor lock-in is only important to one in four users. A similarly low level of expectation surrounds the support for interfaces, higher rates of innovation, rapid RoI and/or a cost-effective solution and influence on the Open Source development.

What, above all else, is your business hoping to gain from OpenStack?

Details in percent. Several answers possible. Basis: n = 303



8. The complexity of OpenStack creates uncertainty.

The variety of challenges that arise for user businesses in connection with OpenStack is wide-ranging.

Users consider the major challenges to surround two interrelated topics: the availability / fail-safety (29 percent) and reliability of the platform (24 percent).

Some 40 percent are afraid of not having any OpenStack expertise in their business and of there being a shortage of appropriate experts in the labour market.

The range of concerns is varied. They include compliance risks, the adaptation of business processes, interface support, the scope of the services offered, finding an appropriate service provider, scalability, the complexity of the topic, a lack of technology, platforms and standards, as well as the release cycles of the individual OpenStack modules. These concerns were expressed by between 16 and 22 percent of those surveyed.

What challenges do you believe need to be overcome in the context of OpenStack?

Details in percent. Several answers possible. Basis: n = 303

Availability / fail-safety	28.7
Reliability of the platform	24.1
Compliance risks (data protection / data security)	21.8
Development of OpenStack expertise in own company	21.5
Adaptation of business processes	19.8
Interface support	19.1
Shortage of experts	18.5
Scope of services offered	18.2
Finding a suitable partner / service provider	17.8
Scalability	17.5
Complexity of the topic	17.2
Lack of technology / platforms / standards	17.2
Release cycles of the individual OpenStack modules	16.8
Other challenge in the context of OpenStack	1.0
Don't know	4.0

Comparison of results by country





Country-specific findings



Great Britain:

The study shows that British users are considerably more open to Cloud Computing and have more practical experience with it than users on the European Continent. The use of Private Clouds is at its highest in Great Britain, although future trends show a gradual adjustment is taking place towards other forms of Cloud. In Britain, the use of Software-Platform- and Infrastructure-as-a-Service far exceeds the average. The “big three” have roughly the same shares, and Strato and Telefónica are also of importance. When deciding on service provider, the key criteria for British users are, above all, scalability, the price-performance ratio and technical know-how.

British users also have a much better knowledge of OpenStack than their continental European neighbours and have the longest-standing practical experience with it. The relevance of OpenStack to their Cloud strategies is therefore exceptionally important. Above all else, they associate the Open Source Framework with greater flexibility and future-proofness. They consider the availability and reliability of the platform to be the most critical factors.



France:

In the “Grande Nation”, the Cloud is frequently used for sensitive, business-critical data. This is taking place before the backdrop of a clear preference for Private Clouds over Public Clouds, however. In France, a preferential trend towards Hybrid Clouds is also clear. The use of AWS and service providers from the second tier (without national preference) is also clearly above average. As in the D-A-CH region, the primary concern of the French users is the price-performance ratio, with little attention being paid to compliance considerations or data protection / data security.

The use of OpenStack is wide and above average, with the framework being considered as a key or important component. French users hope OpenStack to allow them a more straightforward management of hybrid environments, a minimisation of the lock-in risk and future-proofness. At the same time, however, the concerns are also above the average widespread. Very few French users appear to associate the use of OpenStack with Private Clouds.



The D-A-CH region:

In the D-A-CH region, initially, users generally had greater reservations towards the Cloud, which is currently reflected in a lower level of use. Opinions have been changing, however, and the degree of future planning regarding the use of the Cloud is perceptibly above the European average. In this respect, the current preference is for Private Clouds, but there appears to be a high orientation to Hybrid Clouds for the next three years. Users from the German-speaking world tend to prefer working with local service providers, particularly 1&1 and Deutsche Telekom / T-Systems. Their price-performance awareness is above average, while factors such as compliance and data security, or Open Source, are less decisive to their purchasing decisions.

As may be expected for latecomers to the Cloud topic, users from the D-A-CH region have fewer experiences with OpenStack; despite this, however, a large number of new and planned OpenStack use cases is now set to be registered. An above average number of users further emphasizes that OpenStack is important to them or will gain in importance, whereby they primarily understand OpenStack as being the basis for Private Clouds. They are of the clear opinion that OpenStack offers them future-proofness. D-A-CH users consider compliance risks, the adaptation of business processes, finding a suitable partner / service provider and, above all else, the scalability and complexity of OpenStack to pose particular problems. Surprisingly, the shortage of experts which is often raised by others is rarely raised here.



Spain:

Users on the Iberian Peninsula have been joining the Cloud trend in considerable numbers. They are now using these external IT resources almost as much as is the case in Great Britain. They also have a clear preference for Private Clouds over Public Clouds, with the three-year trend favouring Hybrid Clouds. Users are currently viewing their previous use of the Cloud for sensitive data with a greater degree of criticism, as they now rate the importance of compliance factors and data protection / data security highly. Nowhere else in Europe is more importance attributed to manufacturer independence and Open Source.

Spanish users have only recently moved over to OpenStack, but they have done so in big numbers. They strongly represent the opinion that OpenStack can only be considered for Private Clouds. They appear very confident in their knowledge of OpenStack and its possibilities. Above all else, they hope it provides future-proofness, greater flexibility and the prevention of the vendor lock-in. They spend much more time than the European average on their search for providers of OpenStack services.



Netherlands:

Dutch users have an above average tendency to prefer Community Clouds, a clear trend towards the Hybrid Cloud is evident here, however. There is a sense of caution regarding the Cloud offerings of Microsoft and Amazon and a preference for second tier service providers (without national preference). Nowhere else is as little attention paid to compliance factors and data protection / data security as in the Netherlands. Manufacturer independence and Open Source are considered of below average importance.

Appreciable numbers of Dutch users say that they don't know what OpenStack is. Accordingly, the use and future plans regarding OpenStack are below average, being at best an option or not even planned. The users consider the key benefit offered by OpenStack to be future-proofness. Their biggest concerns surround availability and fail-safety.



Scandinavia:

In the north of continental Europe, there is a considerable sense of caution surrounding the use of the Cloud to store sensitive data. The use of Community Clouds is very widespread; in the near future, Hybrid Clouds seem likely to displace other forms of Cloud. Like German and English-speaking users, Scandinavian users have a high propensity to use in-house Cloud technology. In Scandinavia, however, a greater focus is made on compliance-related factors and data protection / data security than the price-performance ratio. It is evident that factors such as manufacturer independence and Open Source are considered of below average importance.

One third of Scandinavian users aren't familiar with OpenStack. Where this platform is known, however, it takes centre stage in the IT plans. The hopes and the associated benefits are not as pronounced as they are elsewhere, however. Above all else, the concerns of the users surround the reliability of the platform and the development of expertise in their own business.

A look to the future





We do the Cloud – only differently

The time to procrastinate is over; Cloud Computing is also the standard IT practice in Europe.

By Ludger Schmitz

The concerns surrounding Public Clouds have created a situation in which users are yet to have completely excluded the use of Public Clouds, but are deciding carefully which data they are prepared to entrust to the IT Cloud: they are keeping hold of business-critical data and applications. This is also possible in the era of the Cloud. Private Clouds are currently the preferred alternative.

While users are moving increasing numbers of IT services to the Cloud, however, they are analysing the advantages offered by the different forms of Cloud on a pragmatic basis. This has been accompanied by the increasing importance of Hybrid Cloud use which is set to become the dominant strategic goal in the near future.

The dominant motif for Cloud Computing is the high cost pressure on IT with simultaneously increasing aspirations surrounding their flexibility and the quality of the services. However, a certain degree of restraint and a critical assessment of Cloud Computing is characterised by the fact that users are, in particular, moving on-premise applications to the Cloud on an experimental and trial basis. The use of Clouds for new concepts such as Containers and Microservices, or for more challenging tasks such as Big Data, Machine Learning or the Internet of Things, is not yet standard IT practice.

Despite the dominant role of Private Clouds in Europe, the use of OpenStack is still in its infancy. This is also surprising because a large share of users associates this Open Source Cloud platform with Private Clouds. Despite this, a large proportion say that they are not sufficiently informed about OpenStack. At the same time, however, they not only expect OpenStack to find more widespread use in the future, but that it will become an increasingly strategic component of their IT orientation.

Above all else, the users of OpenStack are hoping for factors that could provide their IT with future-proofness, surrounding the management of Multi-Cloud scenarios, for example. They are not completely convinced though, and though, and feel confronted with a variety of challenges. In this respect, the lack of OpenStack experts in businesses and in the market plays a key role.

Study design



Study profile

Publisher..... COMPUTERWOCHE, CIO, TecChannel and ChannelPartner

Exclusive study partner T-Systems

Population..... Strategic decision-makers from the area of IT (IT executives, CIOs, CTOs, CDOs, GFs etc.), technical decision-makers (IT managers, IT specialists, application development, application operations)

Sample(s)..... Total: n = 372 completed and qualified interviews

D-A-CH region: n = 63

UK: n = 61

France: n = 62

Spain: n = 61

Netherlands: n = 64

Scandinavia (DK, N, S): n = 61

Generation of participants Personal email invitations for survey

Period of survey 6th until 13th July 2018

Method Online survey (CAWI)

Compilation of questionnaire..... IDG Research Services in agreement with T-Systems

Completion IDG Research Services

Technology partner Questback GmbH, Cologne

Survey software EFS Survey Spring 2018



Sample statistics

		OVER- ALL	D-A-CH	UK	FRA	ES	SKA	NL
Sector distribution *	Agriculture, forestry, fishing, mining	7.8 %	3.2 %	9.8 %	11.3 %	9.8 %	9.4 %	3.3 %
	Energy and water supply	7.5 %	6.3 %	8.2 %	9.7 %	3.3 %	12.5 %	4.9 %
	Chemical-pharmaceuticals industry, life science	14.5 %	14.3 %	18.0 %	17.7 %	9.8 %	17.2 %	9.8 %
	Metal manufacturing and metal-working industry	14.5 %	12.7 %	13.1 %	12.9 %	14.8 %	17.2 %	16.4 %
	Mechanical and systems engineering	15.6 %	9.5 %	19.7 %	19.4 %	6.6 %	21.9 %	16.4 %
	Automotive industry and suppliers	11.0 %	19.0 %	6.6 %	12.9 %	3.3 %	15.6 %	8.2 %
	Manufacturing of electronic goods, IT industry	14.2 %	17.5 %	13.1 %	14.5 %	16.4 %	14.1 %	9.8 %
	Consumer goods, food and luxury products industry	9.1 %	4.8 %	13.1 %	9.7 %	3.3 %	7.8 %	16.4 %
	Media, paper and printing trade	3.0 %	3.2 %	0.0 %	1.6 %	1.6 %	4.7 %	6.6 %
	Construction trade, craftsmanship	6.5 %	7.9 %	4.9 %	9.7 %	3.3 %	9.4 %	3.3 %
	Wholesale and retail (including online retail)	11.6 %	7.9 %	11.5 %	16.1 %	14.8 %	6.3 %	13.1 %
	Banks and insurers	9.9 %	11.1 %	4.9 %	9.7 %	11.5 %	7.8 %	14.8 %
	Transport, logistics and traffic	6.2 %	1.6 %	8.2 %	8.1 %	4.9 %	6.3 %	8.2 %
	Hotel and hospitality sector, tourism	7.8 %	4.8 %	4.9 %	11.3 %	4.9 %	12.5 %	8.2 %
	Business services	8.1 %	12.7 %	1.6 %	11.3 %	4.9 %	7.8 %	9.8 %
	Public administration, municipal authorities, social insurers	7.5 %	3.2 %	6.6 %	4.8 %	3.3 %	17.2 %	9.8 %
	Healthcare and social care	6.2 %	7.9 %	0.0 %	9.7 %	6.6 %	10.9 %	1.6 %
School, university, college	4.8 %	7.9 %	0.0 %	6.5 %	4.9 %	7.8 %	1.6 %	
Other sector group	8.3 %	6.3 %	11.5 %	4.8 %	9.8 %	4.7 %	13.1 %	
Size of business	Fewer than 100 employees	33.9 %	31.7 %	29.5 %	30.6 %	32.8 %	35.9 %	42.6 %
	100 to 999 employees	30.6 %	34.9 %	37.7 %	32.3 %	32.8 %	28.1 %	18.0 %
	1,000 to 9,999 employees	28.8 %	31.7 %	23.0 %	32.3 %	27.9 %	28.1 %	29.5 %
	10,000 employees and more	6.7 %	1.6 %	9.8 %	4.8 %	6.6 %	7.8 %	9.8 %
Revenue class	Less than 100 million Euros	37.4 %	44.4 %	32.8 %	27.4 %	36.1 %	40.6 %	42.6 %
	100 to 999 million Euros	29.3 %	27.0 %	31.1 %	33.9 %	23.0 %	31.3 %	29.5 %
	1 to less than 2 billion Euros	19.9 %	19.0 %	26.2 %	24.2 %	24.6 %	10.9 %	14.8 %
	2 to less than 5 billion Euros	10.2 %	6.3 %	3.3 %	11.3 %	13.1 %	15.6 %	11.5 %
	5 billion Euros and more	3.2 %	3.2 %	6.6 %	3.2 %	3.3 %	1.6 %	1.6 %
Annual spending on IT systems	Less than 1 million Euros	33.6 %	39.7 %	29.5 %	25.8 %	37.7 %	26.6 %	42.6 %
	1 to less than 10 million Euros	36.0 %	39.7 %	34.4 %	33.9 %	36.1 %	37.5 %	34.4 %
	10 to less than 100 million Euros	21.0 %	14.3 %	23.0 %	25.8 %	24.6 %	21.9 %	16.4 %
	100 million Euros and more	9.4 %	6.3 %	13.1 %	14.5 %	1.6 %	14.1 %	6.6 %

*Multiple responses possible

Our exclusive study partner T-Systems introduces itself



T-SYSTEMS YOUR DIGITIZATION PARTNER

T-Systems is partnering its customers as they address the digital transformation. The company offers integrated solutions for business customers. The Deutsche Telekom subsidiary offers one-stop shopping: from the secure operation of legacy systems and classical ICT services, the transition to cloud-based services (including international networks, tailored infrastructure, platforms and software) as well as new business models and innovation projects in the Internet of Things. T-Systems can provide all this thanks to its global reach in fixed-network and mobile communications, its highly secure data centers, a comprehensive cloud ecosystem built around standardized platforms and global partnerships, and the ability to offer top levels of security.

A CLOUD MADE IN EUROPE

Cloud solutions transport the data from myriad sources and sensors safely to T-Systems' data centers, where our corporate customers can use the accumulated information for analysis. That provides a firm foundation for both new and existing business models. Customers want to use the secure European cloud, as a reaction to current political events, scandals over eavesdropping or Internet crime. That is why Deutsche Telekom has developed a cloud ecosystem over the years that conforms to Europe's strict data privacy laws.

This cloud ecosystem already comprises as many as 150 partner solutions. Deutsche Telekom achieved revenues of about 1.6 billion euros in cloud business in 2016. That represents an increase of 12 percent, and more than two-thirds of that figure was accounted for by T-Systems. The business has long achieved its cloud revenues through its private cloud sales alone (that is through specialized solutions provided especially for a single customer). Now, however, proprietary public-cloud applications such as the Open Telekom Cloud are making headway.

Many T-Systems' cloud products are available from the "House of Clouds", the by-name for the company's high-performance data center in Biere, near the German city of Magdeburg. In the House of Clouds, all major cloud providers can be found side by side. Customers benefit from being able to process and analyze data swiftly – under one roof as it were. The data center in Biere provides customers with a "high-density cloud" service. It is considered to be the Fort Knox among data centers and has grown to become a European data hub. With its two sites „Biere 1“ and „Biere 2“ the high performance data center comprises more than 11,000 square meters IT production space which can accommodate up to 100,000 servers. As of September 2018, a total of 150 Petabyte are provided for storing and processing cloud data.

STRONG NETWORKS

Deutsche Telekom is constantly refining its net infrastructure as the motor of digitization and invests billions of euros for this purpose every year. The Internet Protocol (IP) is increasingly becoming the technical basis. Next-generation networks (NGN) and all-IP networks make it possible for companies to offer their services and applications over the Internet using new business models. A series of innovations for fixed-network and mobile communications form the basis of this integrated network strategy, such as the creation of a NarrowBand IoT network in eight European countries or investments in 5G, the core prerequisite for real-time communication.



“Cloud Computing is the key technology for the fourth revolution of industrialization, namely digitization. Almost all business areas will experience disruptive changes due to digitization in order to remain competitive. In this situation, it is crucial to have a partner at one’s side who can offer the right solution modules for the specific customer environment with its challenges and can link them optimally for the customer. Security, networks, a broad portfolio of cloud services in various ecosystems, functional solution modules for IoT and BigData as well as open interfaces are the basic prerequisites for optimally serving individual customer needs.”

Dr. Clemens Hardewig, T-Systems International GmbH, VP Delivery Open Telekom Cloud

THE INTERNET OF THINGS: CONNECTING EVERYTHING

Market researchers surpass each other with estimates of how many “things” will be connected to the Internet by 2020. As a matter of fact, millions of new things are already being connected every day. Most of them are products that had nothing to do with the Internet until now, from baby monitors, parking spaces and electricity meters to whole production systems. All these things not only send data via the cloud to the storage pools for later analysis, they also communicate among themselves. No wonder, then, that companies from SMEs to multinationals want to mine the “gold of digitization” and advance their digital business models together with partners. To this end, T-Systems offers its customers easy and fast access to public and private clouds, to the best network – be it mobile or fixed-line networks – and to tailored platforms in highly secure data centers that comply with Europe’s strict data privacy laws. Additionally, the services include also systems integration across all technologies. Thus, new applications for industry and the public sector are generated with the help of one key contact.

SECURITY AND QUALITY

Cloud computing, mobile solutions and big data all pose entirely new challenges for IT security. What is more, cyberattacks on corporate networks and IT systems are getting ever more sophisticated and have become a huge threat to the economy. Data privacy and data security are thus crucial criteria for success in all technical developments. That is why Deutsche Telekom established the new “Telekom Security” business unit under the umbrella of T-Systems. Telekom Security concentrates all the company’s security activities, and channels the experience of its some 1,200 security experts. The Group is doing everything it can to protect its own ICT systems and networks from Internet-based attacks. Furthermore, it offers customers – from citizen to corporation – new security solutions. To this end, Deutsche Telekom continuously adapt its Magenta Security portfolio to changing requirements. In addition, five years ago T-Systems launched the zero-outage quality program to ensure the uninterrupted availability of its systems and infrastructure. It also began establishing an ecosystem of partners who are all committed to the zero-outage principle and comply with shared quality management standards.



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