As-a-service: Scalable, flexible and sustainable

IaaS without the cloud – when security and sustainability are the focus

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Table of content

Foreword	3
The core business under pressure	2
Increasing business profitability and flexibility through as-a-service models	é
As-a-service is gaining momentum	-
Only a few laaS hurdles for the companies	Ç
Willingness to enjoy a flexible future in the IT infrastructure	10
Leveraging data potential requires scalable IT infrastructures	1
Consumption-based models as the basis for sustainability and adaptability at transparent costs	12
Conclusion	14
Sampling and study design	15
Full list of all statements from the survey	17
Further information	20

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Other Information

For reasons of better readability, the masculine form is used for personal designations and personal nouns in this study. Corresponding terms generally apply to all genders in terms of equal treatment. The shortened form of language is for editorial reasons only and does not include any rating.

Foreword

The "as-a-service" idea has become an integral part of our lives today. Services charged on a subscription basis are ubiquitous. Whether it be streaming services for digital products or the leasing of physical goods such as vehicles. The advantages of scalability and flexibility predominate immensely, which is why these service billing models are becoming increasingly popular. In the digital era, companies have also entered into long-term service contracts or licence agreements in the B2B sector, where they make regular payments for the use of services or hardware. Why should companies make high initial investments when instead a wide variety of offers can be used on demand, consumption-oriented and cost-effectively? In the field of IT, such services are labelled with various billing models and are being used more and more. The core objective in this is avoiding initial investments and instead maintaining transparent cost structures through defined payments. This enables companies to flexibly deploy resources and react to new requirements and changes in their business in real time.

As-a-service models are flexible and highly scalable to the actual needs of a company. Especially at the hardware level, this can massively improve the cost efficiency, resilience and flexibility of a company. Workloads that occasionally reach peak utilisation do not become costly expenses and oversized systems do not have to be available for workloads with weak minimum requirements.

Infrastructure-as-a-service (IaaS) vendors in particular recognise the relevance of consumption-based models for their customers. But what does the application of as-a-service models look like in general in Western European companies? And what is the role of IaaS and consumption-based approaches? 725 companies from 10 countries were asked to answer these and other questions. They thus provide important insights for companies who are currently reviewing their IT infrastructure or will be in the near future, and are looking for new, sustainable, and use-efficient as-a-service solutions.



The core business under pressure

Whether it is increasing energy prices, delays in the supply chains, shortages of skilled workers or general cost pressure, companies are facing increasing challenges in the ongoing struggle to maintain their competitiveness – this also not least because of continuously rising market demands. Those who want to survive in an increasingly competitive and at the same time more demanding market have no choice but to adopt measures of cost optimisation. But it is precisely in the area of cost control, which significantly influences all corporate decisions, where large parts of the IT decision-makers (41 percent) still see significant challenges.

Due to tight budget planning and the volatility of the currency markets as well as the Russia-Ukraine war, one in two mid-sized companies (50 percent) is struggling with financial pressure. Some of the workload had to be drastically reduced or the operation even stopped and the prices for fuel oil, gas, and electricity were at a record high. The problems caused by inflation are already being felt and are turning this struggle into a seemingly impossible race. Banks and insurance companies are also feeling the financial strain: Every second company (52 percent) needs to pay close attention to their expenses. In addition to companies from Portugal (58 percent), whose tourism-oriented economy suffered greatly under the drastic drop in travel numbers in recent years, it is mainly Western European companies from France (44 percent) or the United Kingdom (47 percent) that are affected. Industrialised countries, whose economies have high energy requirements, were afraid to see their economic power wane away due to the skyrocketing energy prices.

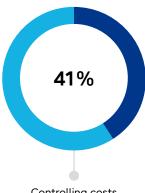


Given these rapidly changing competitive conditions, IT decision-makers do not want to worry about the reliability and long-term performance of their IT infrastructure. Two in five companies (40 percent) complain about difficulties in the stability and performance of their IT infrastructure. But this is, if it were to lose its reliability and sustainability, exactly what would cause productivity losses, security weaknesses, or even total failure. Threatening consequences can thus fuel the financial pressure even more. At the same time, increasingly sophisticated software and services also require more powerful and modern hardware, the acquisition of which has no less influence on the financial situation of companies. It is therefore not surprising that mainly industrial companies often complain about difficulties in this field particularly. The relentless competition and the rapidly developing technology force them to invest in order to keep pace. This effect is particularly felt in France (52 percent) and Germany (46 percent).

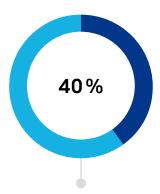
Increasingly necessary investments and new hardware also make it more difficult to manage devices or IT infrastructure. Growing companies face the problem of losing track of their company's IT landscape. Many still manage the procurement procedures of their hardware themselves. Two out of five IT decision-makers (39 percent) reported that it is difficult to reasonably keep up this overview. In addition, legacy systems and infrastructure that have grown over many years must often be managed simultaneously: headquarters, branches, endpoints, cloud, and data centres compete for the budget and take up IT resources.

> In the face of continuously increasing hardware requirements in terms of stability and performance, which continually demand high investments, laaS solutions offer an attractive alternative. They combine efficiency with stability, performance and clarity. Those who want to keep costs low and output high at the same time will not be able to avoid such a model in the long term.

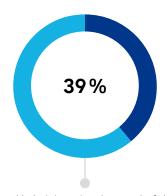
Top 3 challenges in the core business



Controlling costs



Infrastructure performance/reliability



Operational/administrational control of devices or infrastructure (e.g. via software)

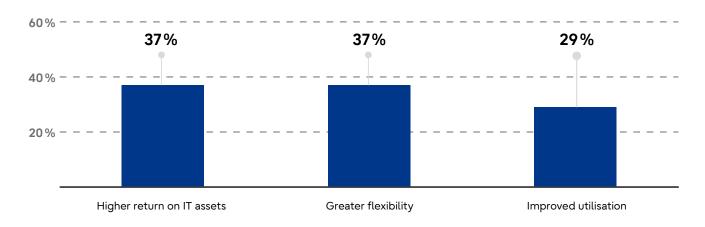
Base: 725 Companies | Multiple answers

Increasing business profitability and flexibility through as-a-service models

Consumption-based as-a-service models therefore offer an effective approach in view of the challenges listed above, as they allow for the combination of cost optimisation on the one hand with clear, flexible scalability on the other hand. Increasing profitability is the core idea here: high profitability and greater flexibility (37 percent each) are by far the most important benefits of such an approach for companies. These aspects are becoming increasingly important, especially for companies with 500 employees or more (40 percent each). Large companies often invest huge sums in their IT infrastructure and are faced with oversupply in crisis situations. This can cost them dearly if that money is needed elsewhere more urgently. With such large expenditure it is therefore particularly important to orient it as closely as possible to requirements. The more this gap grows, the less profitable investments in oversized IT structures become. Companies from Ireland (44 percent), Belgium (43 percent) or the Netherlands (41 percent) recognise this and therefore attach particular importance to lower upfront investments. However, since the corporate landscape is also characterised by many SME, they must pinch their pennies.

A consumption-oriented approach prevents costly investments in significantly more hardware than really needed and clearly reduces the time between purchase and demand – with 84 percent of companies agreeing: "This enables us to quickly scale our IT infrastructure to accommodate changes in the business".

Top 3 advantages of a consumption-based IT model



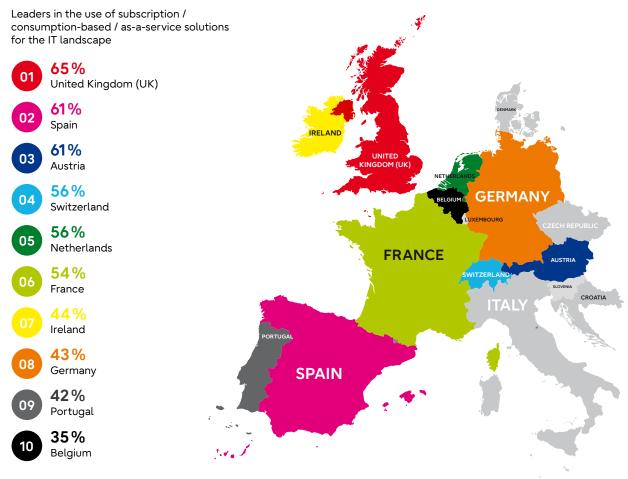
Base: 725 companies | Multiple answers

As-a-service is gaining momentum

Due to the various benefits, 55 percent of the companies surveyed already use an as-a-service approach and a further 26 percent plan to follow suit in the next two years. A glance at Western European companies reveals that the United Kingdom, Spain and Austria in particular are the countries with the highest degree of use of aaS models. Germany, the country with the strongest economy, is in 8th place and investment inhibitions in Belgium put the country in last place.

The very high usage rate in combination with the future users illustrates the high value that as-aservice models have for long-term competitiveness in an increasingly demanding business environment.

Ranking of Western European countries in the degree of use of as-a-service



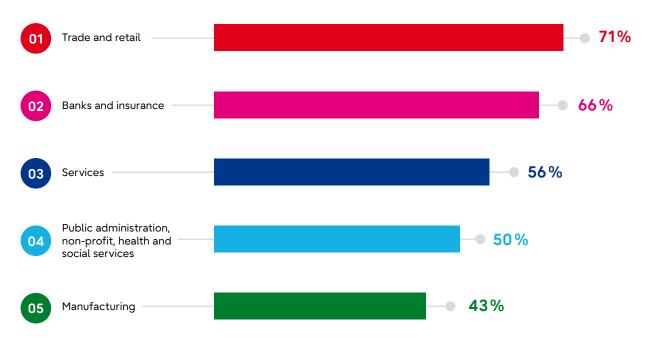
Base: 725 Companies

Focussing the analysis on the different industries shows that especially companies from trade and retail (71 percent) have recognised the possibilities for optimisation that such models offer them. Given the many uncertainties of the past few years, many companies have been more cautious in their spending, and during the lockdown periods, demand in online trading has risen sharply.

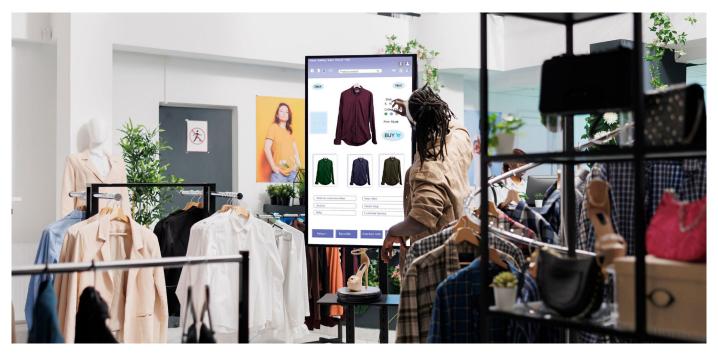
Such fluctuations in the demand of their products caused a paradigm shift within the trade and retail sector. However, one in ten small businesses (13 percent) still has difficulties in recognising the benefits of as-a-service models. They are reluctant to hand over their hardware to external service providers.

Ranking of the industry sectors in the degree of application of as-a-service models

Leaders in the use of subscription / consumption-based / as-a-service solutions for the IT landscape



Base: 725 Companies

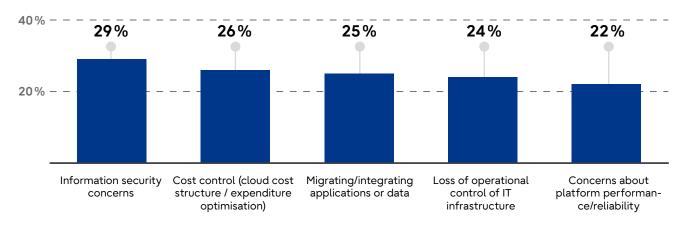


Only a few laaS hurdles for the companies

In many countries, the necessary change to laaS models is already on the right track. However, others still have to catch up. Such large infrastructure changes, which have an impact on the entire enterprise, are often associated with hurdles that have to be overcome before you can start, causing a delay in the implementation. The list of possible hurdles is long: from integration difficulties to internal resistance through to security concerns. Nevertheless, the asked IT decision-makers only named a very small number of problems. Only occasionally do companies have concerns about the future use of laaS models due to their size or industry-specific requirements. The upper middle of the list includes a number of concerns about laaS performance or vendor reliability (22 percent), as well as the ability to migrate/integrate applications or data, which is a concern in one in four companies (25 percent). Very individual, demanding IT environments make them doubt the compatibility. Furthermore, a quarter of the companies (24 percent) fear the loss of operational control of IT infrastructure and cost control in the course of the cloud cost rate structures (26 percent). Since these are two of the main problems in the operation of the core business, their importance in the laaS context is not surprising.

However, information security is at 29 percent the top impediment to a broader implementation of laaS of ferings in the overall average of all surveyed Western European companies. In particular, four out of ten institutions from the public administration, non-profit as well as the health and social services sectors (39 percent) express their concerns regarding this topic. They fear for the protection of personal data. But above all, they fear they would not be able to fulfil their obligation to protect the rights of their customers and partners as well as their personal information from unauthorised access, loss or misuse. In order to prevent this, a pronounced and sophisticated IT governance structure has developed in the mentioned sectors. Taking an IaaS approach to a public cloud platform, nearly a third of respondents from public administration, non-profit, as well as health and social services (30 percent) consider this to be a challenge preventing them from switching to laaS. On average, this is a fundamental issue for 22 percent of companies. However, these companies often do not realise that laaS does not have to be connected to the cloud. It turns out that one in five companies associate laaS purely with a public cloud. But there is also the possibility of implementing as-a-service models on-premises, i.e. in the company's own data centre.

Impediments to wider implementation of IaaS



Base: 648 Companies | Filtering: if involved in decisions regarding IT infrastructure | Multiple answers

Willingness to enjoy a flexible future in the IT infrastructure

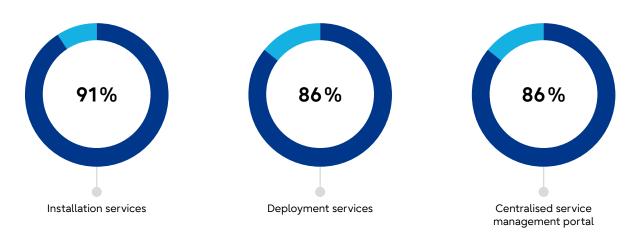
The low barrier threshold for IaaS observable in the overall average of all companies in Western Europe, is reflected in a high willingness (84 percent) of the large majority to use an IaaS offer. Such a high average willingness across all required performance areas promises a strong future potential of the market and the services offered. However, despite an already very high basic level, individual offers can be identified whose scope of services is increasingly used:

Extensive expenditure at the start of operation, such as installation services (91 percent) or deployment services (86 percent), is preferably outsourced in order to reduce upfront investment and effort and thus keep the main focus on the own core business without having to provide additional personnel for this purpose. This is especially the case since there is already a shortage of know-how and personnel due to the shortage of skilled workers. Even long-term offers such as break and fix, maintenance support and warranty services (83 percent), which require closer cooperation with a service provider, are therefore consistently high across all industries, company sizes and countries.

Outsourcing these aspects is particularly attractive for Swiss companies (92 percent), as it allows them to save on personnel costs and to be able to access external expertise in a flexible manner.

Given the consistently high level of interest in IaaS services, it is not surprising that central service management portals (86 percent) are becoming quite popular among IT decision-makers for the clear management of the corresponding services. A company who is willing to hand over large parts of, for example, the implementation or maintenance of their infrastructure would like to get a clear and centralised overview of the services booked and performed. The consistently high level of willingness to use such services suggests that the number of services used will continue to increase rapidly in the future, which is why a service management portal will become indispensable.

Top 3 services which create willingness to use laaS services



Base: 648 Companies| Filtering: if involved in decisions regarding IT infrastructure | Mentions with "Very high" and "High" | Multiple answers

Leveraging data potential requires scalable IT infrastructures

The apparent willingness to use an IaaS model over large parts of its scope is due to the generally perceived need for flexibility in terms of scalability in countless areas. Flexible scalability is by far the most widely needed in data processing (91 percent). In view of the new technologies and data models, German IT decision-makers (96 percent) see the need to keep their investments in data processing scalable to a greater extent.

Increased scalability in terms of data processing inevitably also entails the requirement for a higher flexibility of the databases (86 percent). Increased data volumes, combined with different focus areas of data processing and storage methods, result in the need for improved scalability of the data centres of companies in order to be able to adapt to the prevailing requirements. The storage (87 percent) and the associated backup of data (85 percent) are also areas in which IT decision-makers consider a strong scalability to be indispensable.

So, the core areas for more flexibility and scalability are focused on processing, storing and backing up data. Since companies are reluctant for particularly critical data to be stored in the cloud for security reasons, laaS models not requiring a cloud offer an attractive alternative.

Top 3 needs for flexibility in scalability



Base: 648 Companies | Filtering: if involved in decisions regarding IT infrastructure | Mentions with "Very high flexibility" and "Rather high flexibility" | Multiple answers

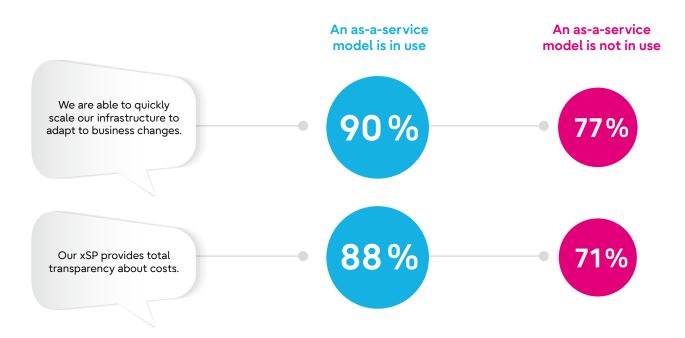


Consumption-based models as the basis for sustainability and adaptability at transparent costs

With such a high need for scalability and flexibility, the question arises as to how satisfied IT decision-makers are with their IT infrastructure and their service providers if they already use IaaS or have not yet decided to do so. In this way, it becomes clear in which aspects the purchase of as-a-service models can offer added value in order to be able to tailor a company's IT landscape to needs or market requirements.

At first, the apparently obvious: Flexible adaptability to business changes is significantly easier for surveyed companies who do use an aaS model (90 percent) than for those who do not (77 percent). As a result, companies using as-a-service for their IT infrastructure are more flexible when it comes to upand down-scaling. The mainstay of every consumption-oriented approach – a massive improvement in flexibility and scalability – does actually noticeably work, as is regularly emphasised.

Agreement with specific statements in the comparison of laaS usage



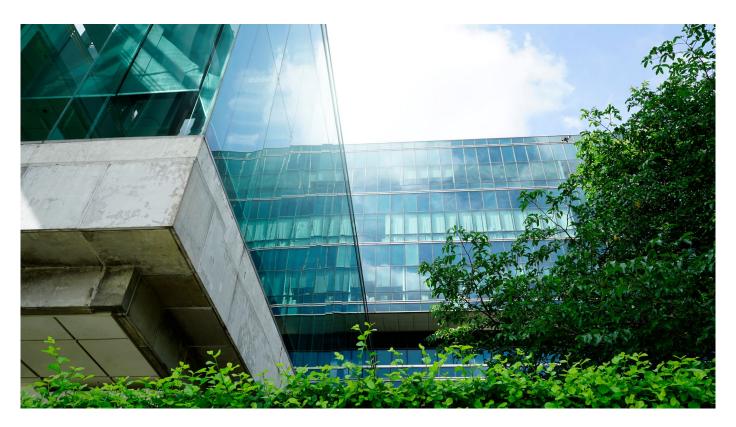
Base: 648 Companies | Filter: IaaS-Entscheidende | Mentions with "Strongly agree" and "Rather agree" | Multiple answers

Companies using an IaaS model also report significantly more frequently that their service provider ensures complete cost transparency (88 percent) than companies that have not yet implemented such a model (71 percent). In the previously strongly emphasised issue of cost control, companies that rely on a business model that includes consumption-based models are thus benefiting more. A clear and transparent cost overview makes financial planning extremely easy and provides future reliability for the own financial development. Small businesses that are afraid of consumption-oriented IT models becoming financial traps can therefore consider such approaches with less trepidation.

Generally speaking, the vast majority of companies (87 percent) consider a sustainable IT infrastructure particularly important in order to be able to meet the challenges and external influences as well as to be able to make their contribution to climate protection. It is apparent that companies that align their infrastructure to actual needs also place more emphasis on sustainability in their IT infrastructure (93 percent). They have recognised that consumptionand performance-oriented operation in an laaS model paves the way towards Green IT. They can add or remove virtual machines and storage resources in real time, depending on how much capacity is required. This enables them to use their resources more efficiently and avoid buying hardware that remains unused. This leads to a reduction in energy consumption, cooling costs and CO2 emissions.

Improved scalability and flexibility, which inevitably lead to cost optimisation, can be combined with sustainable measures in this way. Therefore, the company can be built up more sustainably in the long term, not only economically but also ecologically, and can be positioned as a green pioneer in the market. It is not only companies who are paying more and more attention to their ecological footprint, but customers will also increasingly be looking at such aspects in their purchasing decisions in the future.

Green IT is considered groundbreaking for the future. Economic sustainability is increasingly being combined with or even achieved through environmental sustainability. More and more companies are aware of their corporate responsibility and want to exert their influence on a sustainable future.



Conclusion

Business requirements are becoming more and more challenging and the cost pressure is increasing immensely. Moreover, the global economy is in a period of great uncertainty. The risk of a crisis is showing no sign of diminishing in the future, also in view of climate change. Anyone who continues to follow the traditional concept of purchasing hardware and the possible over-provisioning associated with it will, in case of doubt, jeopardise their competitiveness and blindly invest large sums up front without knowing the actual requirements.

Generally speaking, the broad willingness to use as-a-service models and the already high degree of utilisation of laaS services shows that companies are well aware of this and are counteracting with flexible aaS models. They want to maintain the stability, quality and availability of their services and products at a competitive level. By outsourcing infrastructure workloads to full-service providers that cover installation, deployment, maintenance and warranty services, companies can better focus their IT resources on core operations rather than having to provide additional staff for these specific tasks. This is particularly important because IT staff are already overburdened in many industries and countries. Companies are having difficulty finding the necessary expertise and personnel among their own staff. Above all, because companies are gravitating towards technologies around artificial intelligence (AI). So, it is not surprising that the loudest call for flexibility and scalability in IT infrastructure comes from the data processing segment. The workloads in this field require powerful hardware and extensive computing resources. Own deployment with additional scalability options is becoming increasingly impossible for company-internal IT structures.

Even though there are still doubts about the service concept, these are clearly below the expectation level than at the beginning of the as-a-service era. Only small companies are reluctant to hand over their IT infrastructure to external service providers. Concerns among them about loss of control or financial overburdening are too high. There are also specific concerns about information security. These originate specifically from the sectors of public administration, non-profit organisations as well as health and social services. These sectors have very strict data governance standards and requirements. Long documentation and retention periods must also be met. As a result, considerable amounts of money are invested in the operation of in-house data centres and storage capacity is provided in advance for possible workloads. But as-a-service models for the IT infrastructure do not need to come exclusively from a cloud to provide information security or flexibility for peak loads. IaaS is also increasingly taking place in company-owned data centres such that it fulfils the requirements of compliance.

In addition to the classic aspects such as costs, security and control, the topic of sustainability is also becoming increasingly the focus of companies and their customers. A consumption-oriented approach minimises the amount of unused IT resources. The hardware is optimised for the occurring workloads and eliminates the need for large upfront investments. As a result, companies that have implemented a consumption-based approach across the enterprise are visibly more satisfied with the sustainability of their infrastructure.

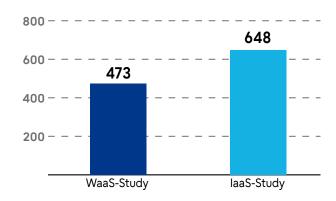
So, companies with concerns about security, compliance or loss of control should pay closer attention to the market-leading IaaS offerings. It is not always a cloud model that hides behind the offering. And companies do not always seem to realise that. Over-provisioning within the IT infrastructure is by no means "with the times", economically viable or sustainable.

ANNEX A:

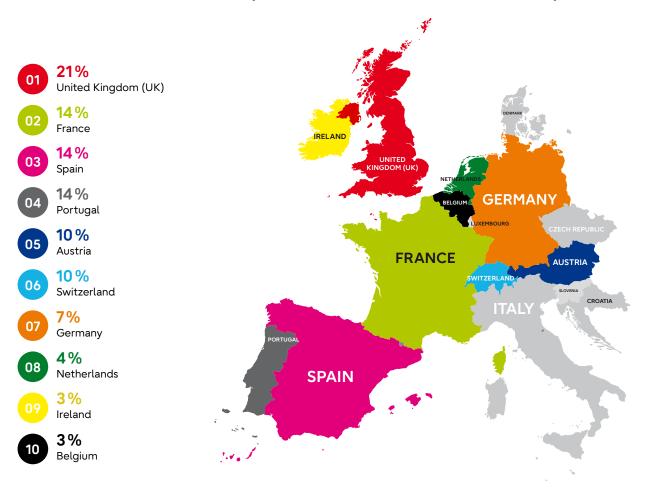
Sampling and study design

This two-part study carried out a Europe-wide survey in 10 countries. In addition to the DACH region (Germany, Austria, Switzerland), this included the Benelux states (Belgium and the Netherlands) as well as France, Spain, Portugal, Ireland and the United Kingdom (England, Scotland, Wales and Northern Ireland). A total of 725 companies took part in the survey, of which 648 (89 percent) stated that they were part of the decision-making process regarding laaS offerings and 473 (65 percent) reported that they were part of the decision-making process regarding the (potential) use of WaaS offerings. The high degree of overlap indicates a concentration of decision-making powers with regard to consumption-oriented services.

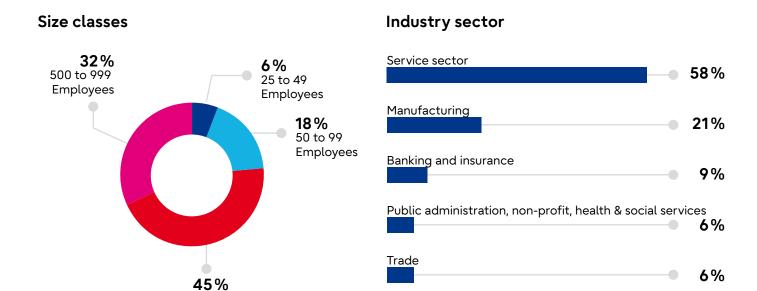
Distribution and population



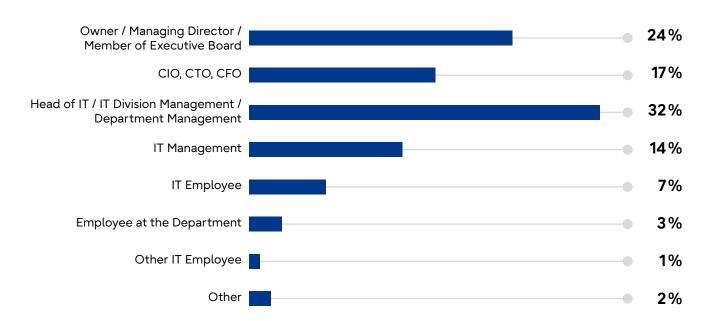
Distribution of the interviewed companies in the countries of Western Europe



100 to 499 Employees



Position



Due to rounding adjustments, some totals may not add up to 100%.

ANNEX B:

Full list of all statements from the survey

Table 1: Challenges in the core business

Controlling costs	41%
Infrastructure performance/reliability	40%
Operational/administrational control of devices or infrastructure (e.g. via software)	39%
Flexibility/scalability	37%
Talent acquisition / employee satisfaction	36%
High complexity (manageability challenges)	35%
Data compliance/sovereignty	34%
Response time to new business requirements	33%
Lack of expertise	26%
Other	1%

Base: 725 | Multiple answers

Table 2: Benefits of a consumption-based IT model

Greater flexibility	37%
Higher return on IT assets	37%
Improved utilisation	29%
Reduced risk	28%
Higher security against malware and cyberattacks	28%
Faster resource scaling	27%
Reduced environmental impact	24%
Lower upfront capital investment	23%
Consolidated billing	20%
Holistic approach of provisioning	19%
Other	2%
None of the above	1%

Base: 725 | Multiple answers

Table 3: Impediments to wider implementation of IaaS

Information security concerns	29%
Cost control (cloud cost structure / expenditure optimisation)	26%
Migrating/integrating applications or data	25 %
Loss of operational control of IT infrastructure	24%
Difficulty applying existing IT governance to public cloud platforms	22%
Concerns about platform performance/reliability	22%
Lack of expertise in managing IT infrastructure	21%
Maintaining compliance with industry regulations	20 %
Internal resistance to the operation of workloads off-premises	19%
Existing investments in owned/leased infrastructure	19%
Data localisation / data sovereignty concerns	17%
Concerns about vendor lock-in	17%
No impediments	3%
Other	1%

Base: 648 | Filtering: if involved in decisions regarding IT infrastructure | Multiple answers

Table 4: Willingness to use IaaS services

Installation services	91%
Centralised service management portal	86%
Deployment services	86%
Asset and configuration management	86%
Operational monitoring	85%
Service Level management	84%
Break & fix, maintenance support and warranty services	83%
Process management	82%
Dedicated Single Point of Contact	82%
Capacity management	81%
Onboarding services	80%

Table 5: Need for flexibility in scalability of the following aspects

Compute	91%
Storage	87%
Databases	86%
Backup	85%
Virtualisation of IT resources	82%
HPC	82%
ERP/CRP	79%
SAP	79%
AI, ML, Analytics	77%
VDI	76%
HCI	76%

Base: 648 | Filtering: if involved in decisions regarding IT infrastructure | Mentions with "Very high flexibility" and "Rather high flexibility" | Multiple answers

Table 6: Agreement with specific statements in the comparison of laaS usage

Given our current infrastructure, we attach great importance to sustainability	87%
We are concerned about the security of our data in the cloud	85%
We are able to scale our infrastructure quickly to adapt to business changes	84%
Our current on-premise IT offers the flexibility to adapt to changes	83%
We tend to buy more infrastructure than we need to avoid under provisioning	82%
Our xSP provides total transparency about costs	81%
We are trying to switch from CAPEX to OPEX	79%

Base: 648 | Filtering: if involved in decisions regarding IT infrastructure | Mentions with "Very high flexibility" and "High flexibility" | Multiple answers

Further information

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About techconsult GmbH

techconsult GmbH was founded in 1992 and is one of the most well-established analyst firms in Central Europe. Thecompany's strategic consulting services focus on the IT and communications industries. Through long-standing standard and individual studies, techconsult has a unique collection of data in German-speaking countries, with respect to both the continuity and depth of information. It is therefore an important consulting partner for CXOs and the IT industry for product innovation, marketing strategies and sales development.

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About Fujitsu uSCALE

Fujitsu uSCALE is the smart alternative when looking for operating models outside of the cloud for compliance, regulatory or security reasons. Enjoy the benefits of a cloud-like as-a-service solution by using servers for your own data centre, with capacity tailored to your needs, including an intelligently calculated scaling reserve for peak loads. You can thus benefit from all the advantages of a cloud model, but the data remains completely under your control.

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