

Cloud in Germany 2023



Modern IT based on the cloud — success not a foregone conclusion

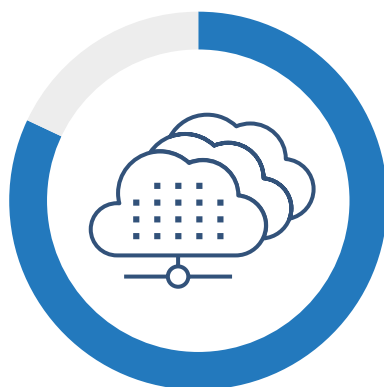
The cloud has become part of the fabric of enterprises across Germany. Even industries and enterprises that have traditionally treated the cloud with caution or skepticism are now willing to base the design of their IT environments on the cloud paradigm. German enterprises have been given an urgently needed nudge toward the cloud, prompted by the need for wholesale digitalization and the economic pressure of macroeconomic changes under which all enterprises labor. It is therefore no surprise that 82% of enterprises and organizations use the cloud to improve workload productivity. However, the extent to which the cloud is used across enterprises and in individual workloads varies greatly.

In February 2023, IDC conducted a survey across all industries, interviewing IT managers and departmental decision makers from 200 enterprises with more than 100 employees to gain in-depth insights into the challenges, approaches and plans for the use of business-critical applications in the cloud and for the optimization of cloud operations.

The survey findings show that the majority of decision makers favor cloud when it comes to modernizing their IT environment, though the breadth of use varies greatly. Only a small number of enterprises opt for a cloud-first or cloud-only approach. Most respondents prefer a balanced use of public cloud services and traditional infrastructure, in their own datacenter, with a hosting provider, or in a colocation. The brief is always the same — to select technology in line with business requirements.

Cloud a significant catalyst for agility and flexibility

Enterprises can now choose from a variety of options. A few years ago, this was not the case. However, the focus should be on using IT to best support the enterprise's business model and ensure its future viability. IDC advises decision makers to regularly assess their IT infrastructure, application landscape and delivery models in the light of current macroeconomic challenges. This is particularly important in the case of enterprises whose business-critical applications are still largely rooted in conventional IT. Although the latter is declining in status, for many decision makers it is still relevant for safeguarding investments or for the continued use of certain applications. However, conventional IT environments cannot achieve the high agility and associated high level of cross-process automation offered by modern solutions and technologies. This is why decision makers are increasingly investing in IT resource diversification with a strong focus on the cloud.



82%

of enterprises in Germany
operate workloads
in the cloud.



Five suggestions for making the most of cloud usage

IDC has five suggestions to help organizations make the most of their cloud use. These are designed to stimulate ideas for your future plans with the cloud and modern information technology.

Suggestion 1

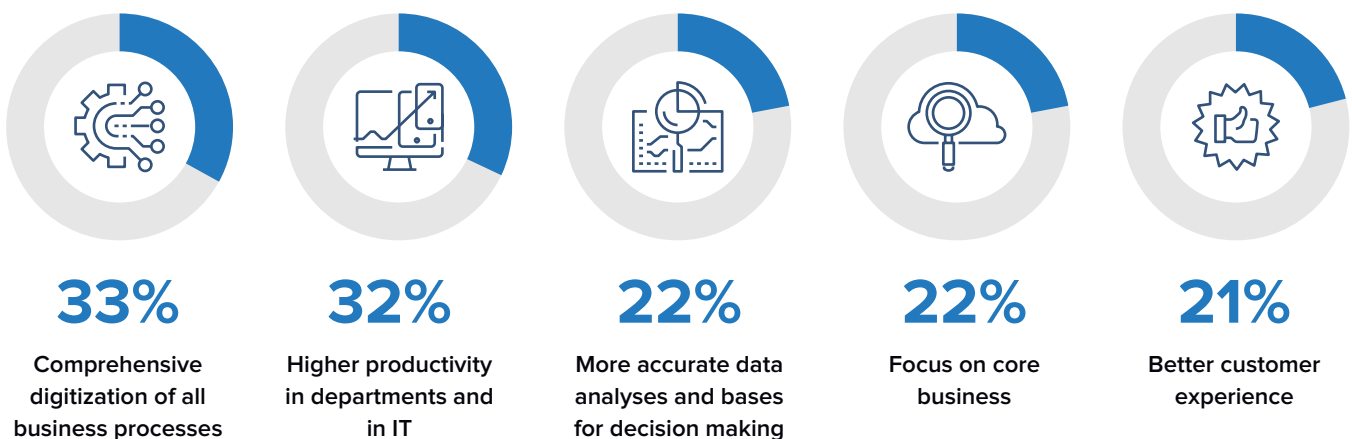
Focus cloud and modern information technology deployment on your digital transformation

Decision makers in IT and departments are called on to support the digital transformation of their enterprises and organizations. Although the terms “digital transformation” and “digitalization” are used excessively, this does not make them any less relevant for business and the public sector. Digital transformation can be distilled into the following equation: Modern information technology and business models together ensure an enterprise’s future viability through innovative business models, products and services.

This is why we always recommend looking at the cloud from a business perspective first of all. It is no surprise that 33% of respondents cite support of the wholesale digitalization of all business processes as the most common benefit of the cloud. 32% believe that higher productivity in departments and in IT is a fundamental benefit. This must not be underestimated because increasing efficiency is also a key objective of digital transformation.

Looking at the benefits of cloud technology, 36% of decision makers say reducing costs is the main benefit. Cost is always important. This also applies in the current macroeconomic environment. Transparency with regard to all costs is both a basis and a prerequisite for tapping into potential for cost reduction.

Figure 1: Top 5 Benefits of the Public Cloud



n = 200 enterprises, figure abbreviated
Source: IDC Cloud in Germany 2023 Survey



Providers and cloud users should not underestimate this. They are also more flexible with their cloud costs and can earmark budgets for other projects.

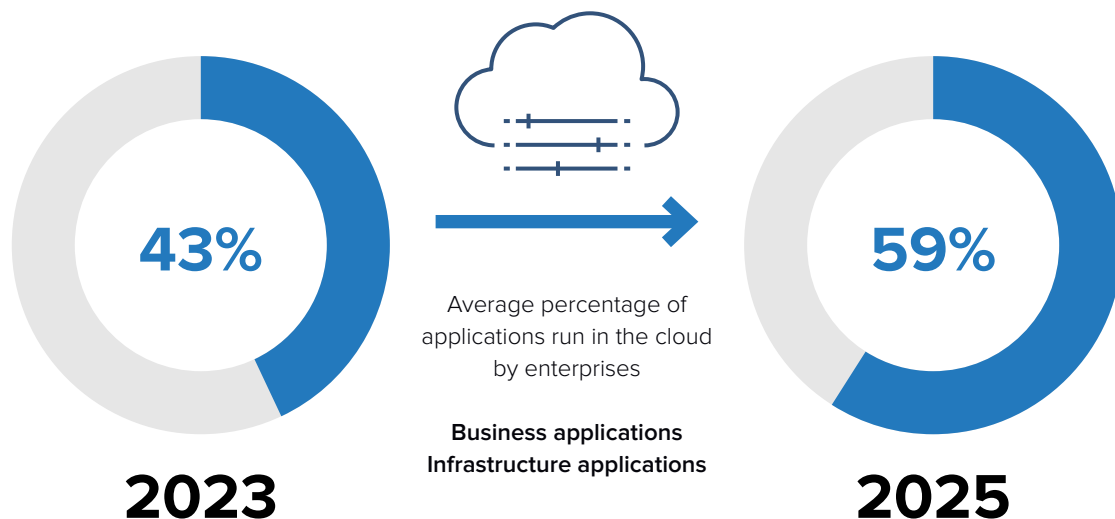
Modern information technology is always accompanied by high technological and process complexity, which you can only control with the right tools and expertise. It is no surprise that 27% of respondents cite a lack of qualified labor and absence of further training as the most common challenges when rolling out cloud. IDC believes this should be seen as critical because the speed at which technology, solutions and services develop calls for permanent training and up-to-date know-how. 25% say further challenges include the high complexity of regulations and governance, 23% have reservations about security, and 23% worry about identifying and meeting business KPIs. IDC believes greater account needs to be taken of this last challenge to improve digital transformation.

Suggestion 2

Move your business-critical applications into the cloud

The growing trend toward running business-critical applications in the cloud is clearly emerging in 2023. This trend is set to continue in the coming years. Currently, an average of 43% of business and infrastructure applications are run in a cloud deployment model. In the medium term, the decision makers interviewed expect this to increase to 59%.

Figure 2: Percentage of Applications Currently Run in the Cloud and Those That Will Be in 2025



n = 200 enterprises, figure abbreviated
Source: IDC Cloud in Germany 2023 Survey

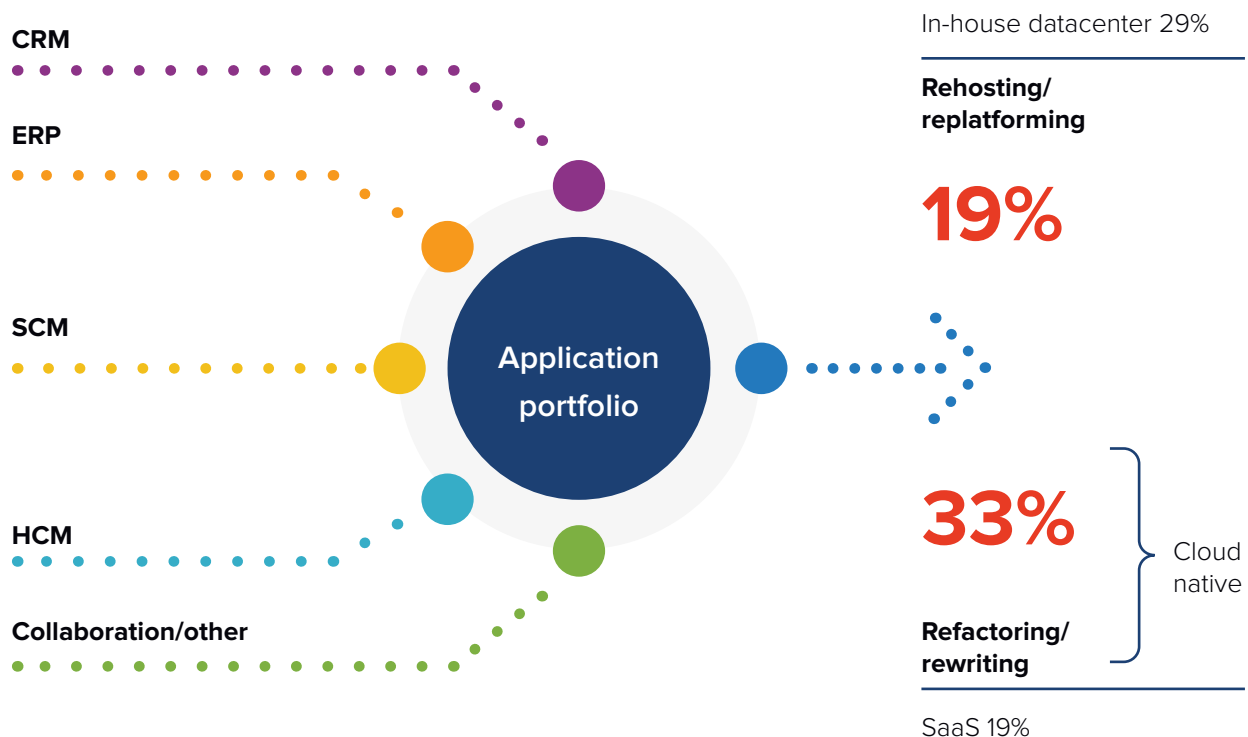
Solutions for HR, databases, CRM tools, collaboration tools, SCM and ERP are increasingly being run in the cloud. The picture is mixed when it comes to workloads that consist of different applications. Generally, the share of various cloud deployment models continues to tend toward multiple cloud scenarios. This will continue to be pursued because decision makers are keen to maximize the benefits yielded by the products of different cloud providers. The number of cloud services will continue to grow, as will the interconnection of different services. The bar will also be raised for requirements concerning the operation, management, transparency and governance of cloud services.

Suggestion 3

Keep cloud-native principles in mind when modernizing applications

In the cloud there is no "one size fits all." This applies to both the operation and modernization of business applications. Follow the migration path that maximizes the benefits for your enterprise. Modernization levels vary depending on the path taken.

Figure 3: Application Modernization Approaches



n = 200 enterprises, figure abbreviated
Source: IDC Cloud in Germany 2023 Survey

19% of the enterprises interviewed currently prefer rehosting or replatforming. This is often the first step toward wholesale IT modernization. It is aimed at dismantling the enterprise's legacy hardware and using the cloud services of a provider. 33% of the enterprises interviewed prefer code refactoring or solution rewriting. In this case, cloud-native principles and functions such as continuous integration/continuous deployment, DevOps, microservices, containers, orchestration and standards are implemented consistently.

Cloud-Native Attributes



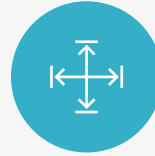
Microservices-based architecture



Automated upgrades, patches and test logs



Auto-redundancy



Auto-scalability



Automatic infrastructure provisioning capability

Most enterprises will pursue traditional and agile methods in tandem because they use classic and cloud-enabled and cloud-native applications. Long-term forecasts all clearly point to cloud native, as this is the best way to achieve the greatest application flexibility and agility.

Each department considers the applications for its workload to be the most important, and all decision makers can argue a good case for modernizing applications within their area of responsibility. But every enterprise needs to prioritize which applications are in most urgent need of modernization. By doing so, they will ensure that they are putting their efforts and resources to best use.

By modernizing applications in the cloud, 32% of decision makers intend to optimize their costs. This comes as no surprise. As already shown, cost transparency and cost reduction are crucial in the current economic climate. A further 24% of decision makers aim to push ahead with innovations and increasing their business agility. 23% of respondents plan to improve the resilience of their organization and processes. These all clearly support and shore up digital transformation.

Suggestion 4

Optimize your cloud use with FinOps

The cloud is very dynamic in terms of technological development, services, deployment models and commercial conditions. Models and concepts such as CloudOps, DataOps and FinOps are increasingly popular. FinOps is being quickly adopted by many enterprises. Around 50% of respondents are pushing ahead here, although the concept is relatively new. The underlying demands to involve all concerned from IT, departments, accounting and controlling in management processes, as well as creating full transparency and automating operational steps, has long preoccupied decision makers keen to permanently identify and tap into the potential to improve operations and optimize costs. Cost is clearly a priority for organizations.



Ops concepts focus on transparency, integration and automation. Cloud cost management can be implemented more efficiently and precisely with FinOps.

FinOps methods and tools are quickly developed and continuously evolve. Decision makers should keep track of ongoing developments. Cloud cost management tools from individual cloud providers are currently deployed in 56% of the enterprises interviewed. This figure will decline significantly by the end of 2023 as the emphasis shifts to tools from third-party providers to gain a holistic view of cloud processes and cloud costs. Two key aspects need to be taken into account here: absolute cloud costs and the cost of the cloud and its contribution to business success. Both are critical indicators.

Figure 4: Optimizing Cloud Financial Management with FinOps

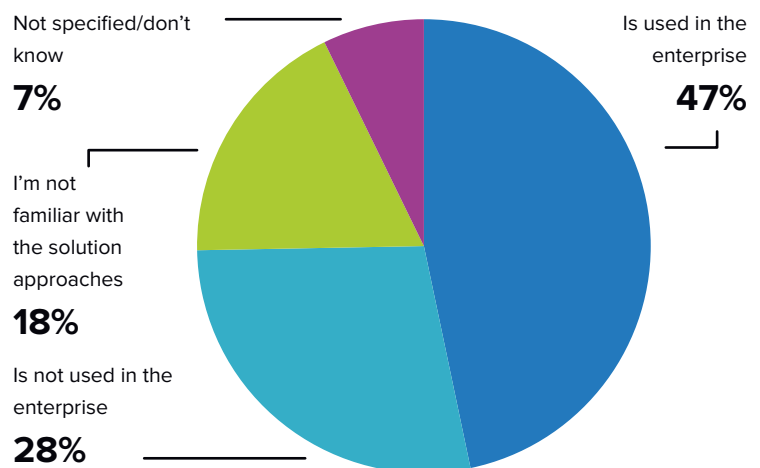
Definition: Cloud financial management discipline and cultural practice that enables enterprises to maximize business value by helping technology, financial and business teams to collaborate when making data-based budgeting decisions.



Challenges

- Variable costs
- Costs for digital products
- Complex cloud billing
- Cost/cost spread for software creation
- Intra-departmental calculation
- Total operating costs cloud and non-cloud

Current Level of FinOps Use



n = 200 enterprises, figure abbreviated
Source: IDC Cloud in Germany 2023 Survey

The challenges highlighted in the figure illustrate the complexity of FinOps. Cooperation between business and IT teams is not enough to tackle the challenges. It is, however, the basis for successful FinOps. You should engage colleagues from the above areas of responsibility and join forces to improve the cost management of your cloud to optimize overall costs.

Suggestion 5

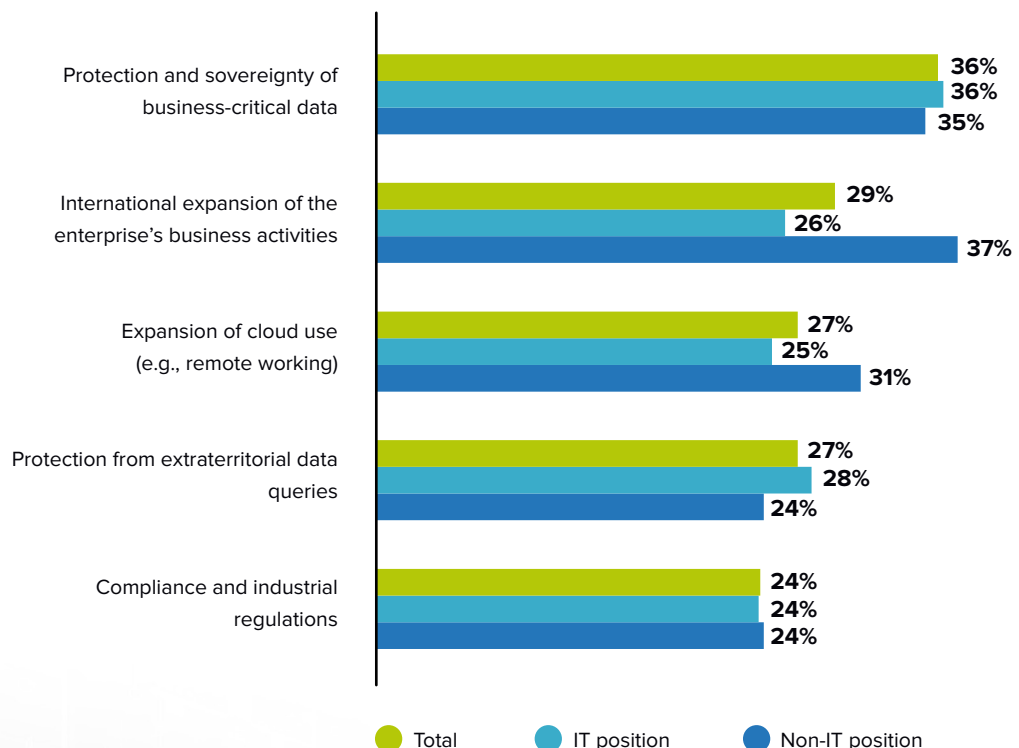
Make digital sovereignty a key element of your cloud strategy

Geopolitical uncertainty, politically motivated and industrial espionage, and cyberattacks spur decision makers' growing interest in digital sovereignty. IDC believes decision makers need to scrutinize what the market offers because the topic is complex. Sometimes "digital sovereignty," "data sovereignty," "data security" and "data protection" are used interchangeably, but there are significant differences. In daily business, this may result in ambiguity when it comes to the use of terms, for instance in communication between IT and other departments and the management or in communication with business partners. It always revolves around the self-determined control of the collection, storage, use and processing of your own data. So make sure you have a clear picture of your data. The sovereign cloud consists of data sovereignty, technological sovereignty and operative sovereignty. Demand full transparency from your providers.

There are many different reasons for using a sovereign cloud. For decision makers, the most important (cited by 36%) is the protection of and sovereignty over business-critical data. According to 29% of enterprises, the need for a sovereign cloud increases as the business expands. Closely related to this is the protection of extraterritorial data queries (27%). Digital sovereignty is always based on business and legal agreements, and on trust between all contracting parties cooperating in digital ecosystems.

Data sovereignty is not needed for every workload and all data, so classify your workloads and data. Unauthorized third parties' interest in your know-how and your enterprise's intellectual property will continue to grow. Establish the prerequisites for self-determined control of the collection, storage, use and processing of your data.

Figure 5: Main Reasons for Using a Sovereign Cloud and/or Data Sovereignty Solutions



n = 200 enterprises, figure abbreviated
Source: IDC Cloud in Germany 2023 Survey



Conclusion

IDC believes there is no alternative to cloud. The survey findings corroborate this. Digital transformation success hinges on the use of cloud services and cloud technology based on cloud architecture. This is why most enterprises already operate their workloads, at least partially, in the cloud. IDC believes that in the short term, many pilots and trials will progress into operative processes.

Decision makers are therefore taking significant steps to eliminate technological and process silos. In IDC's opinion, if they do not automate their processes wholesale, many organizations risk compromising agility and innovative power and becoming trapped in a cost spiral. To select the best approach for your enterprise from the many different deployment models on offer and to establish innovative concepts such as cloud native even more firmly in your enterprise, you need to regularly invest in experts and further training. Although long called for, there is still much to be done here. In addition, you should stay abreast of current developments because solutions, services and products are evolving continuously and you could risk overlooking the latest developments. The risk of not being able to maximize the benefit of your business-critical applications in the cloud increases. The cloud is developing quickly and connectivity within and between enterprises is deepening by the day. In this situation, full digital sovereignty and sovereign clouds are essential. Providers and users both need to ensure and implement trustworthy and secure business dealings in the cloud.

According to the survey, many enterprises are well on the way to modernizing their IT and applications, though gaps still exist. These need to be closed to remove many of the obstacles that stand in the way of successful digitalization.

Recommendations for users

Interviewees were asked to share their best practices for using business-critical applications in the cloud with other decision makers. Here are some of the unedited answers we received.

“

“Plan well in advance which applications can and may be relocated to the cloud.”

“Special security measures are called for, and they have to be weighed up carefully. Cloud services must therefore be chosen wisely.”

“Compare the security features of the different cloud providers.”

“Check the applications and data for cloud compatibility.”

“When selecting providers, go for value for money rather than bargain offers.”

“Be wary of becoming dependent on a single provider and losing control.”

“The cloud expects enterprises to be able

to furnish scalable environments easily and automatically.”

“We have to be sure that our data security is absolutely watertight.”

“Careful migration planning and implementation.”

“Rehosting simply means moving old systems into the cloud. Replacing is about swapping a current application for software provided as SaaS.”

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Methods

In February 2023, IDC conducted a primary market survey to gain insights into German enterprises' plans, challenges and success factors relating to the use of business-critical applications in the cloud and for the optimization of cloud operations. Based on a structured questionnaire, 200 organizations with more than 100 employees across industries in Germany were interviewed. IDC only interviewed enterprises that use or are currently rolling out cloud services and technologies.

The following information was supplied by HCLTech.

HCLTECH

Case study: multinational consumer goods company

HCLTech

[HTTPS://WWW.HCLTECH.COM/](https://www.hcltech.com/)

Strategic cloud transformation for a U.K. multinational consumer goods company

Customer profile

The company is a U.K. multinational consumer goods manufacturer headquartered in London. It operates research and development sites in China, India, the Netherlands and the U.K., as well as the U.S., and is divided into the following three main business units: Foods and Refreshments, Home Care and Beauty & Personal Care. The company is the world's largest manufacturer of body care products. Its products are available in around 190 countries.

Customer requirements

Due to the complexity of its datacenters, IT services were unable to keep pace with the required time-to-market speed, which developed into a serious problem. The company decided to cooperate with HCLTech to push ahead with its IT transformation based on a cloud-first strategy. The following challenges and objectives had to be taken into account with regard to the existing infrastructure:

- Large, complex on-prem infrastructure (DC footprint), resulting in high operating costs and a lack of agility
- Planning and implementation of a cloud-first strategy aimed at developing all new applications in the cloud from day one
- Establishment of a modern, agile, lean and resilient infrastructure to accelerate the market launch of products
- Empowering the in-house IT team to implement new business requirements faster
- Introduction of observability tools to further optimize the use of resources and reduce overall operating costs
- End-to-end automation to reduce recurring costs and increase business flexibility

Solution approach

HCLTech began the transformation project with a comprehensive assessment to identify established structures and product owners, reveal requirements and dependencies, and expose further potential for optimization. The result was a customized cloud road map revolving around a multicloud infrastructure as the core element. Along with avoiding vendor lock-in and optimized financial cloud management, key benefits for the customer included empowering them to manage and develop their own service platform. The HCLTech team provided the following support:

- Verification and definition of KPIs and implementation of a managed infrastructure to support cloud platforms
- Use of infrastructure-specific tools such as Ansible and Terraform to support DevOps and infrastructure-as-code (IaC) principles
- Provision of a PaaS and IaaS service catalog for several cloud platforms (multicloud) to meet the customer's complex and scalable requirements
- Customer empowerment for the self-provisioning and control of resources
- Introduction of DevOps principles for infrastructure development and tests
- Implementation of CI/CD pipelines in productive environments
- Integration of ITSM with a DevOps model and AI/ML-ready self-service
- Use of HCL-IP such as iAutomate and MyXalytics to identify optimization possibilities

Project highlights

Transferring the infrastructure into the cloud enables consistent application performance and higher service availability for customers. The company can now create a standard catalog to ease operation and shorten go-to-market times. Some of the main highlights include:

- The customer's service teams act in line with business requirements
- Availability of an optimized DevSecOps model
- Empowerment of a business-outcome-driven site reliability engineering (SRE) team to support an agile operations/KPI-based approach
- Provision of an agile infrastructure that can be scaled quickly as the situation demands
- Implementation of a single orchestration tool for the hybrid cloud

Customer benefits

As a technology transformation partner for the company's digital transformation, HCLTech is mainly responsible for rolling out a cloud-first strategy to improve business flexibility. The customer was able to achieve the following business benefits:

- ✓ Cost saving of 50% in the disaster recovery (DR) sector due to fully automated processes
- ✓ Improved user friendliness thanks to reducing ticket volumes by around 30%
- ✓ Reducing downtime by improving turnaround time (TAT) and mean time to recover (MTTR) by 20%
- ✓ Transparent measuring of all service levels (SLOs), recurring errors and necessary latency times to identify further optimization measures and improve internal and external customer experience





Interview

with Dr Frank Fehler, Senior Vice President and Country Head Germany, HCLTech

IDC: Modernizing IT tops the agenda for many enterprises, not least because of the current economic situation. Which aspects of the cloud do you regard as particularly interesting and worth keeping an eye on?

Dr Frank Fehler: The pace of digitalization and cloud usage really picked up steam in Germany during the COVID-19 pandemic. The macroeconomic situation revolving around inflation, the war in Ukraine, economic uncertainties and halted investments were other catalysts. Currently, there is no end to this trend in sight. We work predominantly for very large international companies and DAX groups. All our customers are very actively engaged in the cloud transition and many use multihybrid cloud solutions. In close cooperation with our customers, we tailor the solution to suit their particular requirements. We support more than 500 customers worldwide in cloud projects. Their scope and diversity practically knows no bounds. Lifting and shifting existing applications to cloud platforms was yesterday, now tasks range from mainframe modernization to the development of modern cloud-native solutions. At the conception stage, along with technical feasibility and the economic benefit, aspects such as data security and protection, resilience and compliance must be taken into account.

IDC: IDC believes cloud is entering a new phase, especially here in Germany. Do you share this view?

Dr Fehler: Absolutely. Leading enterprises started rolling out the cloud more than 10 years ago. The majority of German enterprises already use clouds. The next big step is to turn modern cloud solutions into the beating heart of business and technology strategy. Fast and effective business decisions require agile applications, which frequently only cloud solutions can offer. We are therefore talking about an extensive transition and transformation of corporate IT. An existing core application may require refactoring, that is a thorough application overhaul, in order to enjoy the benefits of cloud resources. Applications can be put out of service replaced by new applications, developed with agile methods to improve the use of resources. Standardized SaaS solutions

are available as an alternative.

Many enterprises adopt a gradual approach to their upcoming modernization. It is often combined with the rollout of new processes and structures. The aim is continuous adaptability, availability and efficiency of the cloud infrastructure to secure applications and data in the cloud. This calls for modern networks to connect the clouds, as well as advanced cybersecurity solutions. We have pooled the practical knowledge of more than 40,000 cloud experts and over 3,000 successful cloud projects in one over-arching method: HCLTech's CloudSMART. With it, we want to make the cloud journey as simple, efficient and successful as possible — in a word, smart. Our first priority is always the business benefit for our customers. It begins with migration into the cloud, modernization of existing applications and a seamless automation approach, and extends to cloud managed services. This also includes the continuous and flexible adaptation of cloud solutions to changing requirements.

IDC: Decision makers currently face a plethora of terms such as digital trust, digital sovereignty, sustainability, resilience and FinOps. How should decision makers tackle this from a cloud perspective?

Dr Fehler: New buzzwords are constantly joining the concepts mentioned above. Although in essence they all make sense, each new technical answer leads to new questions. Of course, for certain enterprises and applications it is important where — in which country — they are hosted in the cloud. Many enterprises have set themselves ambitious climate goals, and IT plays a key role in their implementation.

Security aspects such as resilience have increased exponentially in importance for many of our customers in the past months. Because, in the end, transitioning to the cloud is just the start of the journey. Making the most of the potential and, very importantly, staying in control of costs in the long run, are the greatest challenges.

IDC: You are in constant communication with your customers. In your view, what do enterprises need to take into account to set up or develop their cloud along the right lines?

Dr Fehler: Continuous adaptation hinges on agile processes and procedure. With the help of our FinOps solution, HCLTech's MyXalytics, we can continuously monitor and optimize cost structures for our customers. Flexible usage models such as HCLTech's U4X — Utility for Everything offer our customers an attractive cost model for the private cloud, with which they are familiar from the public cloud. Cloud-based data and analytics and AI applications support our customers' employees by means of improved transparency and structured information. From financial services to healthcare, life sciences, manufacturing, mining, telecommunications and consumer goods to the retail trade, we offer solutions tailored to the relevant industry to reduce the complexity of the day-to-day work of the experts. This way, faster and better results can be achieved. In the field of data and analytics, we create transparency for a leading industrial enterprise across its global production sites. Their productivity, efficiency and sustainability are constantly measured, compared and optimized. In healthcare, AI-controlled cloud computing enables a leading enterprise to carry out groundbreaking research and development in the fields of cancer diagnosis and automatic tumor contouring. An international fast food chain monitors and documents its entire supply chain by means of cloud and blockchain technology — from the seedling in the potato field to crispy French fries on the plate.

IDC: Looking to the future, the complexity of IT landscapes, IT infrastructures, applications and services will continue to increase or become more diversified. What technologies and measures should organizations include in their road maps now that from your point of view will be vital in the future?

Dr Fehler: AI is in the process of revolutionizing more areas than we could have imagined a few months ago. The new, recently published version of ChatGPT shows how rapidly the technology is developing and how AI will become a valuable technology for end users as well. I decided to pose the question above to ChatGPT. This is my summary of the IT trends for Germany that the AI tool named and described: cloud, cybersecurity, AI/robotics, Internet of Things (IoT) and blockchain. The interaction of cloud platforms with next-gen technologies such as 5G, robotics and IoT has accelerated digital transformation and opened the door to groundbreaking innovations. We are currently piloting HCLTech's NIO — Net Zero Intelligent Operations platform with one of Germany's largest car manufacturers aimed at reducing energy consumption across its worldwide production sites in the long term. This is environmental protection with an impressive business case. Solutions of this nature can help us to strengthen Germany's competitiveness in the international arena.



ABOUT IDC

IDC is the world's leading provider of market information, consultancy services and events in the information technology and telecommunications field. IDC analyzes and forecasts technological and industry-related trends and potential, providing clients with a basis for judicious planning of the business strategies and IT purchasing. Drawing on its network of more than 1,100 analysts in 110 or so countries with global, regional and local experience, IDC can offer clients comprehensive research findings on various segments of the IT, TC and consumer markets. Managers and IT professionals have been placing their trust in IDC for decision making for more than 50 years.

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