

A hand in a white glove holding a silver tray against a blue sky with clouds. The background is a blue sky with a large white cloud. A hand in a white glove is holding a silver tray horizontally. The tray is empty. The hand is wearing a white glove and is holding the tray with the fingers. The background is a blue sky with a large white cloud. A hand in a white glove is holding a silver tray horizontally. The tray is empty. The hand is wearing a white glove and is holding the tray with the fingers. The background is a blue sky with a large white cloud.

E-BOOK

Everything-as-a-service

Cloud Trends and Success Stories
for Managers

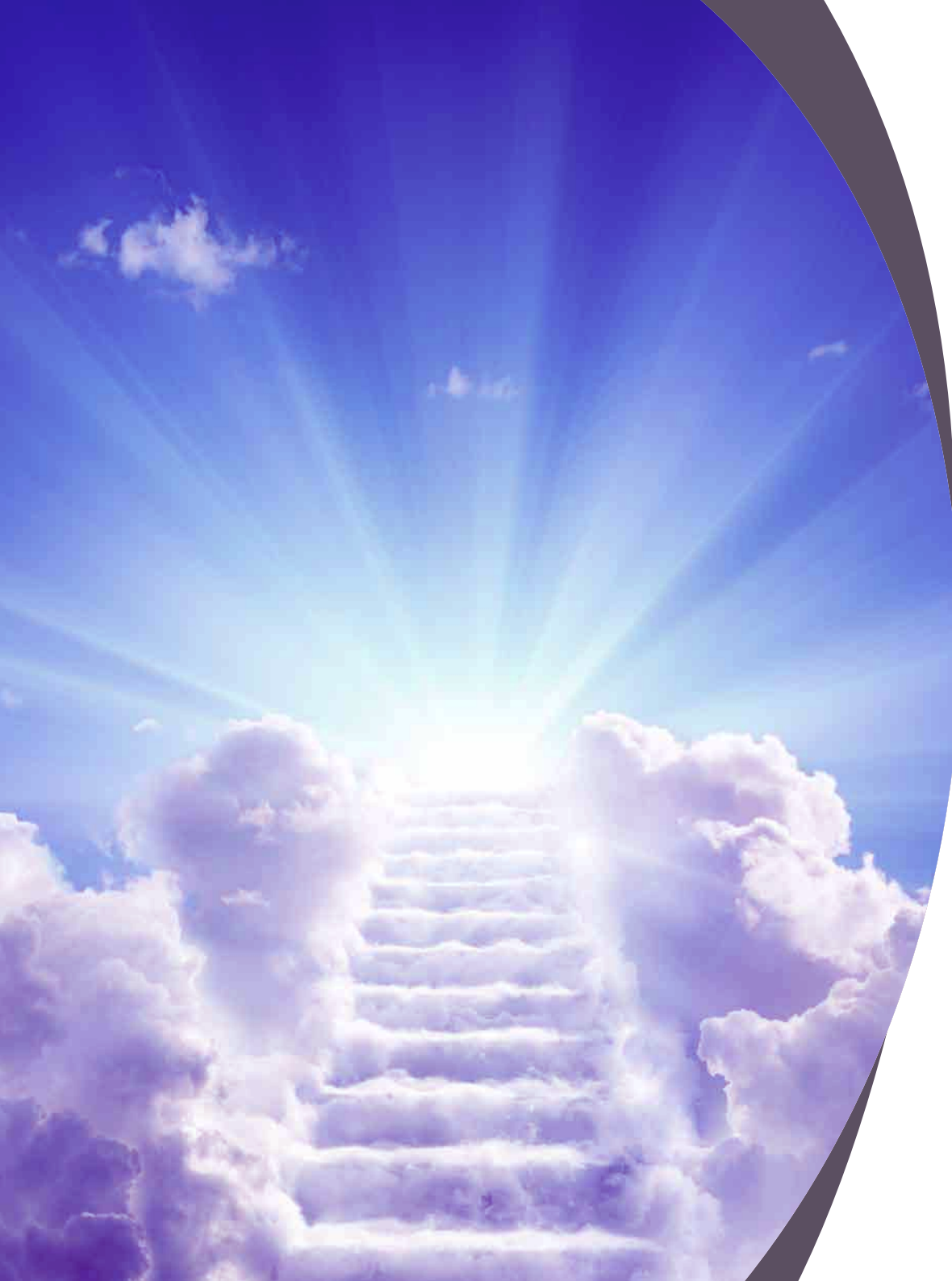
Cloud Services Are Now Available for (Almost) Everything

Thanks to the digital transformation, the application of technology in business is no longer exclusively the domain of the IT department. The cloud makes advanced features accessible to a wide audience. This way, anyone can get started with services for image recognition, fraud detection or marketing analysis, without having to first complete a master's degree. The advantage is that organizations have continuous access to the latest technology and can introduce new functionalities faster.

The Xebia Cloud survey conducted among 300 cloud professionals shows that increased flexibility (44%) and increased capacity for innovation (41%) are the main reasons for migrating to the cloud.

When it comes to technology these days, achieving added value is the goal and cooperation is the motto. But how do you really add value as an organisation with cloud technology? And how do you set up the organisation accordingly?

This ebook is for business leaders who want to accelerate the pace of innovation and are interested in opportunities to develop valuable applications with cloud services. Read this document to gain more insight into how organisations such as Royal FloraHolland, Pathé and Knab make cloud technology available within their organisation. Take advantage of the tips for organisations migrating their system processes to the cloud and become familiar with terms such as data democratisation, FinOps and cloud-native design principles.



Contents

Pathé: Getting a Grip on Data With Managed Data and ML Services	04
Data Democratization: Self-Service Analytics Makes Data Available to the Entire Organization	06
Planning to Migrate Critical Business Systems to the Cloud? Remodeling Is Something You Do With the Store Open!	07
The Business at the Helm	08
Cloud Centre of Excellence	08
Experimenting	08
The Magic of Cooperation	08
Royal FloraHolland: Machine Learning Services at the Flower Auction	10
Cloud-Native: The Rules for Software Development in the Cloud	11
Architecture	11
Configuration Management	12
Quality Assurance	12
Knab: Cloud Services Made Available to the Entire Organization	13
Making Accounts Available in a Structured Way	13
Managing Cloud Usage and Expenditure with FinOps	14



Pathé: Getting a Grip on Data With Managed Data and ML Services

With 30 theaters in the Netherlands, Pathé is the largest cinema chain in the Netherlands. Every year 15 million visitors enjoy the latest projection techniques, comfortable seats and Pathé's innovative food and beverage concepts.

Pathé's ambition is to remain the most popular Dutch cinema chain. Pathé has therefore recently begun optimizing business processes and marketing through the use of smart analytics and insights. In order to centralize the data and make it available to the organization, Pathé chose to work with Xebia to develop a data platform with the managed services of Amazon Web Services. Creating a safe environment that is easy to maintain was central to this. In addition, Pathé partnered with Xebia to introduce data applications such as recommendations and visitor behavior analysis.

“We know we have a lot of data. We are sitting on a pot of gold, as it were, and we have to do something with it.”

– Rick Stammes, Business Analyst at Pathé

Pathé has been using data to guide the organization on a managerial level for several years. These valuable insights inspired Pathé to expand the use of data to other departments, such as marketing. The ultimate goal of the cinema is to optimise the visitor experience and business processes with data it collects from multiple sources, such as the website, app and the POS systems, as well as data related to the weather or major sporting events that can affect visitor numbers.

It is clear how involved everyone at Pathé is in the development of data applications. Pathé has seen data and applications literally come to life within the organisation. Colleagues from other departments, for example, will often drop by the data team with questions and concrete ideas. Pathé's data team collected a list of potential applications. A film recommender emerged from this as something with high potential. “If you've seen movie one, two, three, you'll probably like movie four. By comparing your viewing history with people with similar search or viewing histories, or by making selections based on your favourite actors or genres, we can recommend new movies,” explains Rick. The data team worked closely with the content team and the e-commerce department to achieve the set targets. Naturally, a lot of testing was done. “We see that on the basis of the personalised recommendations, the conversion rates have improved significantly,” Rick adds.

Another important use case was predicting the number of future visitors. Pathé was familiar with analysing the number of visitors per theatre for the purposes of purchasing and planning. Xebia's consultants started working with the (historical) data that was available in order to develop a model. To do this, they make use of the AWS Sagemaker Machine Learning as-a-Service platform. "We would like to be able to predict the number of visitors per day and per theater six weeks in advance, for staff planning, among other things. In addition, we want to respond to trends with a long-term projection in cooperation with distributors," Rick adds.

"By using data, we now know how we can stay relevant for individual visitors. I want to go beyond predicting theater attendance and introduce smart applications to help optimize the number of visitors. But that's not all. Data also helps us better understand the lifecycles of members and to retain members."

– Rick Stammes, Business Analyst at Pathé



Watch the interview with Manager BI Rick Stammes.



Data Democratization: Self-Service Analytics Makes Data Available to the Entire Organization

For a long time, making data available and developing data applications was the domain of highly trained data professionals. Their job was to explore this rapidly increasingly complex terrain and find the right tooling. It is not for nothing that data applications in the cloud are one of the most important cloud trends. Of the cloud professionals surveyed, 70% say that storing data centrally is the most important development in the cloud, followed by Machine Learning in the cloud (57%). In order to create value with the use of data, specialised data teams have recently been introduced in numerous organisations. For many of those organisations, it now appears that working with a central data team also has its limitations.

Organisations are generating, collecting, storing and analysing exponentially more data, leaving centralised data teams unable to meet the increased demand. To prevent data teams from forming a bottleneck it is important that data is made available in a different way.

Data democratisation is a development process whereby organisations make data accessible to a larger group of (not so IT-skilled) users. Thanks to services that are easier to use, the options offered by data-driven applications are becoming available to people who do not have a specific IT or data background.

An important aspect of data democratisation is imparting the right knowledge and skills so that this new group of users also know how to use the available tools and self-service analytics.

“As soon as you open the ‘data tap’, it keeps flowing. The capacity of a central data team remains limited, however. If the central data team has to transform all the data, this team will sooner or later become a bottleneck. Self-service tooling means departments can get started with the development of data applications themselves. It’s an efficient way to scale up and achieve more value through data.

— Niels Zeilemaker, Xebia Data

Planning to Migrate Critical Business Systems to the Cloud? Remodelling Is Something You Do With the Store Open!

In order to accelerate the pace of innovation in their organisations, organisations are increasingly looking for ways to simplify and consolidate the IT environment. The introduction of a cloud-native way of working often turns out to be a good solution. As such, the cloud is the way to a goal-oriented business model. But how do you migrate critical business systems without disrupting the process, and how do you manage the organisation in such a way that the emphasis is on adding value? In short: how do you stay open during the remodelling?

By investing years in the development of their own systems, organisations often have to deal with top-heavy frameworks that run on their own servers. Rebuilding these systems with services specifically designed for the cloud increases manageability and often costs a fraction of what it used to cost to set up. It's not for nothing that 24% of organisations believe that their own IT landscape is too complex, making it impossible to get the most out of the opportunities that the cloud offers (Xebia Cloud Survey).

To better align business and IT, and thereby become more agile, organisations can opt for a layered approach. The first option is to turn off systems whenever possible. Following that, it's wise to check whether a suitable SaaS solution is available. More than 45% of organisations see SaaS as the most important application when it comes to cloud technology. If this isn't possible, migration to the cloud remains an option, for example, by using virtual machines in the cloud (34%) or

rolling out cloud-native applications (33%). Xebia's survey of 300 cloud professionals also revealed that the most popular cloud strategies are to start small by migrating individual workloads to the cloud (13%) and to add cloud-native solutions to existing processes (13%).

Migrate While the Store Is Open

Large traditional business systems that have been in use for years often contain large amounts of data and require a lot of memory capacity. This leads to high costs, especially if the system is also run by the organisation itself. In many cases, migrating to the cloud turns out to be considerably cheaper than the existing model. Nevertheless, a cloud migration is not always easy to carry out, either from a technological or functional perspective. It is important to think outside the established frameworks. What is important in the bigger scheme of things is to assess how the organisation can set up, roll out and expand things further. Also, the adjustments often take place 'with the store open', as critical systems must remain available to customers and other users. One option is to manage and maintain the old and new systems in parallel during the migration process.

The Business at the Helm

When migrating to the cloud, and certainly when it comes to large-scale systems, the key to success is in cooperation. Not only between the organisation itself, the cloud provider and the consultancy partner, but also internally. People are used to working with existing systems, a cloud migration generally means that the way of working changes. Research shows that 22% of organisations find that the existing organisational structure and responsibilities make it difficult to get the most out of the deployment of cloud technology.

"In principle, in order to be able to accelerate, it is necessary to put the business at the helm," explains Michiel Sens, Principal DevOps Consultant at Xebia. "In order to reap the rewards from these new opportunities, you want to ensure that the business and the people who develop the products start working together in a new way. Then you end up relying on DevOps, whereby you focus on a different way of organising things that's much more oriented on the business capabilities, in order to gain speed this way. It's one thing to adopt cloud technology, for example, to access infrastructure faster and roll out software faster. But to really get the most value out of this, you also have to take a good look at how you can organise your organisation in a different way at the front end, in order to integrate functionality into the production process more quickly." Working in this way increases the scope for experimenting with your services, allowing teams to quickly develop and market new products and services, or phase them out just as quickly if results are not forthcoming. This is a frequently used method, especially in the financial world."

Cloud Center of Excellence

This shift requires the support and insight of management. Traditionally, IT is often seen as a cost centre. A CFO looks differently at a cost item than they do at investments on the business side of things. When IT is seen as a way to make yourself stand out from the competition, it is easier to integrate the capacity into the business. That's not to say that IT doesn't cost money, but there is a difference between seeing it as a mere cost item or as an opportunity to accelerate business and provide opportunities," says Sens. When structuring the migration process to the cloud, organisations often set up a Cloud Centre of Excellence (CCoE). This creates a link between the specialists and the migration objectives.

Once the migration reaches the final stage, the CCoE can focus on guiding, advising and correcting the people working with the cloud infrastructure. For the successful deployment of cloud technology, it is important that people find solutions themselves and embrace the new way of working. Innovation is and remains subject to human error. Technology is just a part of the innovation process.

Experimenting

When an organisation applies technology well, it provides a powerful foundation for innovation. That's where the added value lies, says Renald Buter, COO at GoDataDriven, the Data & AI division of Xebia. "Innovation is crucial if you want to stay ahead of the curve. Cloud, machine learning and also the mindset that DevOps encapsulates, enable you to accelerate the wheels of innovation. It is easier to experiment, to collect data and then to test the outcomes of innovation. This makes it easier and quicker to see what works and what doesn't." Sens emphasises the importance for employees to look at their work in a different way. "People are often used to performing tasks, but they are now being asked to develop far more innovative products. More focus on the customer and on the necessary data to assess how the organisation can maximise value. It takes time to get people acclimatised to this different way of working and thinking."

The Magic of Cooperation

Cloud migration is therefore more than just a technological process. In fact, the entire organisation is innovating. Buter: "It is important for people to learn to think in terms of value creation. For every new project it is important to answer the question of how you add value." One of the ways to do this is by building teams with people from different backgrounds. "That means working together on a challenge, from different perspectives within an organisation. This increases the support base and allows you to implement much more decisive

changes", adds Sens. "You make the shift from being directive to being cooperative. Organisations migrating to the cloud often see the magic start to happen once the operations staff join the project team. The insights of the product owner and the knowledge of the operational team then come together. The teams no longer have to wait for each other but actually strengthen each other."

NN Investment Partners is an example of an organisation that chose to migrate to the cloud. Watch the interview with Rémon van Gijn, Head of the Cloud Centre of Excellence at NNIP.



Royal FloraHolland: Machine Learning Services at the Flower Auction



Royal FloraHolland brings buyers and sellers from all over the world together through the online auction platform Floriday and the world-famous live flower auctions. Xebia implemented the cloud infrastructure on AWS and made cooperation between buyers and growers easier by introducing machine learning applications.

In order to expand its services to buyers and growers globally, Royal FloraHolland, the world's largest flower auction, had to go digital, create an IT infrastructure and become more data-driven. The flower industry is expansive with 145,000 transactions per day and 400,000 varieties of flowers and plants. Royal FloraHolland, thanks to its rich history, the number of transactions and the enormous size, is in a category of its own: the enormous auction complex in Aalsmeer, which extends over more than 128 hectares, serves as a tourist attraction where visitors can immerse themselves in the international flower trade.

Data plays an important role in the transformation that Royal FloraHolland is going through. Together with Xebia, Royal FloraHolland has internally rolled out a data science program with the aim of setting up

cloud infrastructure and developing machine learning (ML) tooling and applications. Royal FloraHolland now uses ML to make better predictions about the delivery of the flowers via trolleys and to improve operational efficiency. The company, for example, also uses a deep learning model to provide growers who use photos with tips to sell their product, (including info about image quality) and to make recommendations to buyers who use the auction app.

Xebia has helped Royal FloraHolland build a modern architecture on AWS to deploy data-driven applications. The “Digital Greenhouse” applications and the ML technology now run on this platform.

Royal FloraHolland is fulfilling the ambition of using data to improve business results and keep the auction at the top of the flower industry, with the help of AWS and Xebia.



Watch this video an interview with Remco Wilting, Manager BI and Data Science at Royal FloraHolland.



Cloud-Native: The Rules for Software Development in the Cloud

As is so often the case in life, you only start to see it once you realise it's there. The same can be said with the value of cloud services. The technology is accessible to everyone, it is up to the users to apply it in the right way. Transferring existing systems to the cloud without any changes will bring few, if any, benefits to an organisation. In order to optimise cloud services, organisations will have to learn to look at systems in a different way. In this article, we dive into cloud-native design principles, tools for engineers and developers to get the most out of the cloud and maximise the level of quality.

The cloud-native design principles fall into three categories: architecture, configuration management, and quality assurance. The first two mainly serve as guidelines, while the last principles can actually be used as a checklist.

Architecture

During the design phase, architects determine what a product will look like. This forms the basis for the quality of the end product. The main thing here is simplicity, minimising unnecessary and manual work, and being prepared for things that don't go as expected.

The simplicity of the solution largely determines the quality in cloud-native system designs. The simpler it is, the more reliable it will be. This is also reflected in such principles as minimising unnecessary work and manual handling. By automating more and eliminating unnecessary steps, processes remain orderly and manageable. But as simple as this may sound, the world isn't perfect. Cloud-native architects therefore always keep in mind that

things can go wrong. This setting allows them to detect errors, backtrack the service in a sophisticated way and automatically resolve errors.

It is important in this phase to look closely at the way teams operate. Autonomy is critical - especially for Agile companies - and so is the well-known “You build it, you run it” principle, which means sharing responsibility for development, continuous improvement, reliability and availability of the applications that have been put into production.

Finally, these principles determine the choices that the architects make. Consequently, building it yourself is not a bad choice, but, as already mentioned, if a SaaS solution is available, then that is a sensible first choice. After all, why reinvent the wheel, right? It is also wise to opt for open platforms, to avoid creating vendor lock-in.

Configuration Management

The principles governing configuration management ensure that systems continue to perform as intended over time. In particular, it's important to pay attention to things like version control, infrastructure as code, and infrastructure that's immutable.

Version control does not allow manual changes, but developers are expected to make improvements through the code so that they are replicable. The second principle - infrastructure as code - offers benefits such as better traceability, testability, and built-in recovery capacity. In practice, it often turns out that when errors occur, it's usually caused by changes that have been implemented manually. Preventing manual changes to the infrastructure makes it immutable and consequently ultra-reliable.

Quality Assurance

An emphasis on quality has already been mentioned; the principles surrounding quality control are in fact a checklist for engineers and developers.

Automation underpins most of these principles. The less manual work, the less room there is for human error and the smoother the processes will be. Changes go through an automated pipeline (Continuous Delivery Build Pipelines) and all services undergo tests (Automated System Test). If there is an error, nothing is put into production.

A primary feature with cloud-native is that applications and infrastructures are self-healing and capable of solving everyday errors. It is important to continuously monitor business services. Availability is often thought of as systems that are up and running, but if development teams can't meet their customers' expectations, then availability is irrelevant. Finally, cloud-native developers use a so-called active-active high-availability set-up, in which the infrastructure consists of two active data centres that guarantee seamless recovery after system errors.

Knab: Cloud Services Made Available to the Entire Organization

More and more teams are using AWS services within Knab. It is important for these departments to be able to quickly and easily make their own account available in the AWS environment. The introduction of a so-called Account Vending Machine means the bank has control over the use of the cloud within the organisation and it takes much less time to create new accounts. This change also brought a lot of flexibility, making it much easier for Knab to develop new innovations on Amazon Web Services.

As an online bank, you need a secure, scalable and easy to maintain infrastructure. Knab's ambition was to give everyone within the organisation easy access to AWS functions. This requires an environment that is optimised in terms of performance, efficiency, cost control, reliability and security.

Teams had different ways to deploy infrastructure and software on a variety of devices. It was important to make this process more manageable and scalable.

Knab's Data Lake was already running on Amazon Web Services; however, no flexible solution was in place to make accounts available within the organisation.

Making Accounts Available in a Structured Way

Xebia proposed setting up an Account Vending Machine (AVM) to standardise the roll-out of new cloud accounts. The aim of the AVM is to offer accounts that fully comply with all rules that are imposed on financial institutions. The accounts are implemented using

infrastructure-as-code best practices, standard pipeline tooling, and with all infrastructure code in one central location.

The AVM provides Agile teams with instant access to third-party solutions, such as machine learning analytics and Cloud Security Posture Management, as well as pre-configured AWS Services.

Thanks to the Account Vending Machine, Knab can now manage dozens of accounts simultaneously and account life cycle management is more efficient. Thanks to this more efficient and flexible working method, Knab's innovation capacity has increased. The new Data Lake gives Knab a cloud environment that is cheaper, faster and more secure. The environment is also more scalable and faster, thanks to the application of cloud-native principles such as serverless functions and an infrastructure-as-code-based design.

Managing Cloud Usage and Expenditure with FinOps

As you have already read, cloud services have made the introduction of new systems a lot easier. Whereas previously departments had to go through a lengthy process to (be able to) implement new software, the desired functionality is now often already available within a cloud platform. This means that other questions are suddenly relevant. For example, is your team sure that the service they are using is secure and do they know what the costs are and how to manage these smartly? And how do you prevent your team from entering into long-term obligations with the cloud provider, for example?

Many organisations see costs skyrocket if everyone can make unlimited use of the cloud. As long as the scale is limited, the required control is often manageable. Therefore, it is relatively safe to experiment with new cloud services and explore various data sources. But once teams pick it up, a large number of users can quickly lead to unforeseen costs. Teams are often not used to being called to account for what they actually use, or were previously only charged[TIIB1] for the tip of the iceberg. There's also a point where the lack of hygiene starts to have an impact on costs. But how do you make sure the costs are transparent and, above all, remain within limits?



And that's where FinOps comes in. FinOps provides a way to understand and better manage the operational costs of cloud services by accounting for variable costs associated with the cloud. For example, by defining guidelines with regard to budgets, tagging things (who incurs which costs, why), making usage transparent, detecting deviations, ensuring that expenditure remains within certain limits and providing insight into how the processes make a valuable contribution to the operating result.

"In modern organisations, more and more people have access to cloud services. As a result, we see a shift from the IT budget to corporate responsibility. It is, therefore, important to provide the users of cloud services with knowledge and skills and to make them aware of the best possible way to deploy these services. In practice, 31% of organisations (Xebia Cloud Survey) indicate that there is an insufficient level of knowledge within the organisation to get the most out of the cloud. 27% of organisations indicate that they evaluate the cloud environment at least every 6 months.

It is also important to keep costs under control. FinOps takes all aspects into account: people, processes and technology, combined with speed, quality and costs", according to Bart Verlaat, Xebia Cloud.

"The biggest challenge with the cloud is not technology, but organisational change. Change management is therefore becoming increasingly important. Making the most of cloud services directly impacts the way teams work together. That is why companies are increasingly asking themselves what the bottlenecks are before they take the step to the cloud. These may involve a lack of skills, knowledge, awareness, preparedness, or financial insight. The six pillars of the AWS Well-Architected Framework provide a good starting point. These pillars reflect how cloud services affect the entire business organisation, not just the IT department. For organizations to survive, it is crucial to reinvent themselves in a good way", concludes Steyn Huizinga, Xebia Cloud.





Creating Digital Leaders

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