

Cloud: Driving Growth & Innovation

What can cloud services do for Nordic companies? How did others succeed? What are the best practices and pitfalls, when driving digital value and accelerating modernization through the cloud? In this guide, we outline how a well-orchestrated adoption of the cloud helps businesses gain competitive advantages.



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A Nordic cloud-check: status, drivers and opportunities

During 2021, 51% of Nordic organizations are predicted to reach IDC's highest level of cloud maturity. How will the cloud adoption, accelerated by COVID-19, advance in the coming years? What's stopping businesses from fully embracing the cloud, and what is the best way forward? Cognizant's cloud specialist Sophus Slaatta shares his insights, gained from over a decade's experience, helping businesses adopt cloud services.

Cloud adoption has increasingly become a key enabler for digitalization and for realizing data-driven businesses. Whether it's migrating the entire core infrastructure to one or more cloud service providers, aka hyperscalers, or just simplifying a handful of processes using software as a service (SaaS) tools, the cloud represents the digital future.

Which country is leading the cloud adoption race? The US by far; by 2022, cloud adoption for all other countries will lag behind the US by one to seven or more years according to [Gartner's research on cloud spending and growth](#) per country.



Cloud-first strategies are the norm

What about the Nordics then? Businesses have now advanced on their cloud journeys, according to Sophus Slaatta. He joined Cognizant in 2021 as the Commercial Leader of the Cloud, Infrastructure & Security business in the Nordics, after heading the Amazon Web Services (AWS) Professional Services business in Norway.

Historically, the business drivers behind cloud adoption have been about innovation needs and faster time-to-market for digital services, less about cost. Unsurprisingly, startups were in the frontline, as the cloud gave them access to cutting-edge technology and the ability to go global in seconds, without significant upfront investments.

Digital teams at businesses got inspired by how the startups worked. They wanted to work with modern cloud technologies and became impatient with waiting for “slow internal IT”. Thus, they bypassed the internal IT departments and started to use cloud services, utilizing the self-service model of cloud. The main goals were to increase software developer productivity, release new digital services faster to their users or customers, and attract skilled digital talent. Communication, media, entertainment, and telco companies have been among the first to adopt cloud, while the public sector still is lagging.

“By now, the majority of large Nordic businesses have deployed a cloud-first strategy and prefer to rent specific cloud services rather than investing and managing infra services/apps themselves,” says Sophus Slaatta. “Finland is most mature, then Sweden, followed by Norway and Denmark.”

Multi-cloud environments up next

Businesses started to use software as a service (SaaS) solutions for specific end-user needs, then enabled digital projects with infrastructure as a service (IaaS) and platform as a service (PaaS) environments, followed by the widespread adoption of cloud. A [survey conducted by IDC](#) shows that 85% of Nordic organizations currently use more than one SaaS solution, while 70% are using multiple IaaS solutions. The same survey states that 51% of Nordic organizations will reach the analyst’s highest level of cloud maturity during 2021.

“What we see among our clients is that after a period of siloed cloud initiatives, the complexity of managing the IT estate increases. Integration, monitoring and IT security become obstacles, as the on-premise and cloud environments are often not fully connected across the organization,” says Sophus Slaatta, businesses are dependent on these technologies to work seamlessly, to manage risk and IT security, and to maximize the benefits of adopting cloud”.

Hyperscale data centres and multi-cloud

Nordic businesses are increasingly turning to multi-cloud strategies and seeking help from cloud and data center providers to achieve their business goals, according to an [ISG survey](#). More than half of companies surveyed in the Nordics said they were planning to migrate their applications to a multi-cloud model.

This is where the hyperscalers come in – Amazon Web Services (AWS), Microsoft Azure and Google Cloud. They have all built cloud data center regions in the Nordics, which is important to align with EU regulations and [Schrems II](#), and they are all partners to Cognizant.

“Cognizant has limited investments in own data centers but rather built competence around the hyperscalers with a dedicated business group for each one. This is beneficial to clients; we are tech-agnostic, providing cloud-native, hybrid cloud and on-premise IT infrastructure services, based on the client’s needs.”

Any advice to those exploring multi-cloud alternatives? [Gartner recently warned against mixing the three major hyperscalers](#) because “it is a full-time job keeping up with a single cloud”.

“Managing several hyperscaler platforms is complex and requires significant competency. Creating multiple cloud centers of excellence (COEs) is a good start.



There’s a job to be done to keep multiple cloud COEs in synch, and this requires a holistic approach. The best frameworks simultaneously consider multiple elements of your cloud adoption strategy, such as business assessment, economics, operating model, roadmap and operations.”

COVID-19 as cloud catalyst

[Forrester predicts that cloud infrastructure will expand by 35% in 2021 alone](#). For hyperscalers, the pandemic proved to be more of a stimulus to growth rather than a barrier, with continuous extremely strong growth in revenue, CapEx and data centre spending, [according to the Synergy Research Group Q2 2021 market](#) report.

Amid COVID-19, the use of cloud has exploded as the need for more agile and flexible solutions is topping many companies’ wish lists. In the US, leader of the cloud pack, a significant number of large organizations have shut down their own data centers and moved everything on the cloud. What could be hampering this development in the Nordics?

“Lack of cloud competency is the major obstacle, combined with the complexity of managing the technical debt that large organizations have built up over years, with a rich flora of on-premise servers, databases, applications and hardware. What should you move, what can you turn off, what parts can be replaced with SaaS, how do you ensure compliance like Schrems II, etc? This is far from an easy task – it’s crucial to upskill internal teams and bring in an experienced partner like Cognizant,” ends Sophus Slaatta.



Foundations

In the digital economy, the capacity to respond effectively to changing market and customer needs is essential.

Why cloud?

Cloud helps transform how businesses innovate and operate

To stay competitive in 2021 and beyond, organizations must transform their applications and embrace developer velocity, without compromising security or the customer experience.

This is recognized and accepted at the very top level. According to KPMG's 2020 CIO survey, boards are increasingly looking to their organizations' technology functions to deepen customer engagement, develop new products and services and bring them to market at pace, cloud is a critical enabler for this.

Top three business issues that management boards are looking for the IT function to address:

52% Improving customer engagement

45% Developing new products and services

40% Improving agility and speed to market



The CIO's two big challenges

- **Extract new value from existing applications to fund modernization**

Solution: Operate leaner, automate, rearchitect for platform-native development, accelerate and scale-out applications to meet new demand.

- **Stay ahead of the competition**

Solution: Innovate faster, meet consumers' continuous demands for digital features and engagement, and drive business agility to adapt to market speed.

In 2020, McKinsey & Company published *Developer Velocity: How software excellence fuels business performance*, following an in-depth survey among senior executives at 440 large enterprises. "Companies that excel in providing the right tools, culture, product management, and talent management not only develop software faster but also deliver significantly stronger business outcomes."

Source: *Developer Velocity: How software excellence fuels business performance*, McKinsey & Company.

In order to deliver against these two challenges, a CIO will also need to address skills and experience limitations within the current IT team. Migration to cloud is not just a technology play. It also has a people, organization and process dimension to it. What is the new organization's structure? What new roles and responsibilities are needed? How is all this managed as a change program in line with the technology refresh? These are all important conversations to have. This is where specialist partners like Cognizant add significant value, as any given organization will only do this once, while Cognizant helps clients across many industries and accelerates the adoption of cloud services across all of these themes.

Improving developer velocity means modernising processes

It means putting better product management processes in place, breaking down barriers to innovation, adopting best-of-breed tooling, retaining top talent and embracing open source. All of which can be tricky when a business is reliant on legacy software, stacks and services. But it's well worth doing. Enterprises that accelerate and innovate end up with flexible, modular architectures that they can scale up or down as and when they need to. And, as developers get used to working in open source and InnerSourcing models at traditional enterprises, the lure of these stacks makes it easier to attract and retain talent.

A man and a woman are smiling and looking at a laptop in a modern office setting. The man is wearing glasses and a blue shirt, and the woman is wearing a white shirt. They are both looking at the laptop screen. The background is a bright, modern office with large windows and a white brick wall.

What about edge computing?

Forrester predicts that edge computing, computing that is done at or near the source of the data, will start to rival cloud by 2024. The explosive growth of IoT, faster networking technologies and new applications that require real-time computing power, drive the edge-computing systems. Will it outrival cloud or not?

”Edge computing is far from a cloud competitor, but rather a cloud enabler and a natural combination of on-premises and cloud technologies, to create business value. For example, in a large factory, there are local machines and hardware to support these, while the advanced processing and optimization of the production are happening on the cloud. Cloud is a crucial bridge to the long-term viability and increased efficiency, and is a prerequisite for any modern digital organization,” says Sophus Slaatta.



The new normal: after the pandemic workplace

During the initial economic downturn brought on by COVID-19, enterprises with existing cloud infrastructure footprints focused on cost-cutting, taking advantage of the scalability of cloud. Enterprises also provided staff – that suddenly had to work from home – the cloud-based digital productivity services required to perform their jobs virtually. For end-users, a cloud centric digital workplace became the new normal. Remote working triggered the need for flexible end-user environments, and the adoption of SaaS productivity cloud services skyrocketed. Zoom as an example grew 317% year-on-year in 2020. A cloud based workplace is the new normal, and this initiates the cloud journey and “breaks the seal” so to speak. Delivery of corporate apps is often a challenge to a remote workforce, and the logical next step for clients is to move the apps to cloud-based delivery models.

How will businesses perform as the uncertainty ushered in by the pandemic intensifies?

According to Forrester:

- 20% of businesses will not be able to weather the volatility; they won't last
- 23% of companies will merge business and technology management into a single leadership role (e.g. an EVP of business and tech strategy becomes Chief Technology Officer)

Fostering an innovative culture

Bring in new technologies – but don't forget about the people

Businesses can't break new ground without also cultivating the right workplace culture. Trying to superimpose traditional structures (think: line departments, big teams, waterfall projects) onto transformational processes will hamper progress. Drop old management habits, instill new mindsets at the executive level and eliminate silos with collaboration among different teams.



Upskill and reskill: Businesses must reskill and upskill employees for cloud-based working, which demands agile ways of thinking and prioritizing.

Involve people: Stimulate an innovative culture by making people an integral part of the change. Share information and invite bottom-up input, from the factory floor to customer service, development and operations.

Stakeholder input: Request input from external stakeholders too; adaptability and creativity depend on everyone's participation.



Harnessing the business potential of cloud

To meet today's challenges, businesses must integrate a combination of accelerators, platforms and strategic partners to modernize core applications.

Accelerating into the cloud

Realize the real value of cloud by understanding the importance of interconnectedness

How do you create a future-ready ecosystem? Winning companies are bringing together applications and infrastructure to leverage the full business potential of the cloud. Getting there requires a business ecosystem of one or more hyperscalers, modern software development and IT infrastructure management processes and tools, SaaS platforms, and the acumen to orchestrate across it all. The platform, app and data paradigm describe the IT transformation well, but the staff, customers and partners experience is also crucial to focus on. For example, I want my customers to find us easy to buy from. What platform, app and data initiatives need to happen to support this new “experience”.

By aligning modernization initiatives around the three pillars – platforms, applications and data – organizations, achieve digital transformation at scale and speed:



Platform modernization

Modernizing and optimizing legacy infrastructure platforms on the cloud delivers agility, improves time to market and builds scale. At a platform level, modernization via cloud migration encompasses a range of transformation initiatives, including managing workloads cost-effectively and creating a resilient technology backbone.



Application modernization

To meet the dynamic needs of the digital world and improve their ability to respond to the accelerated pace of change, legacy applications need to evolve, too.



Data modernization

Data is now a competitive advantage, and digital-native organizations are winning against less agile incumbent companies. The key to fighting back against this existential threat is to consolidate siloed data sources and migrate legacy systems onto the cloud, to generate actionable insights that inform everything from operations process automation to customer experiences.

Unified access to data is a critical business requirement in any modern business; securely share, discover, create, update and govern data. A multi-cloud setup for data needs a carefully considered data fabric or data blueprint to avoid silos, costs, latency and complexity. This is no small matter. As companies expand their services and applications, their data grows exponentially. However, the amount of data is rarely the cause of the issue. Rather, it's where the data resides. Too often this is left up to where the service or application collects and resides itself. The answer is a data fabric that guides how data will be maintained and governed. This blueprint goes across and above infrastructure and cloud requirements. Often it is grouped by “hubs” or “lakes” for visibility and access. The data fabric's most important role is to accommodate for different use and agility to business processes, while at the same time remaining stable and predictable in terms of accessibility and discoverability and latency. The right data strategy and fabric is fundamental for succeeding in enabling a data-driven business through anticipating change, scale and flexibility.

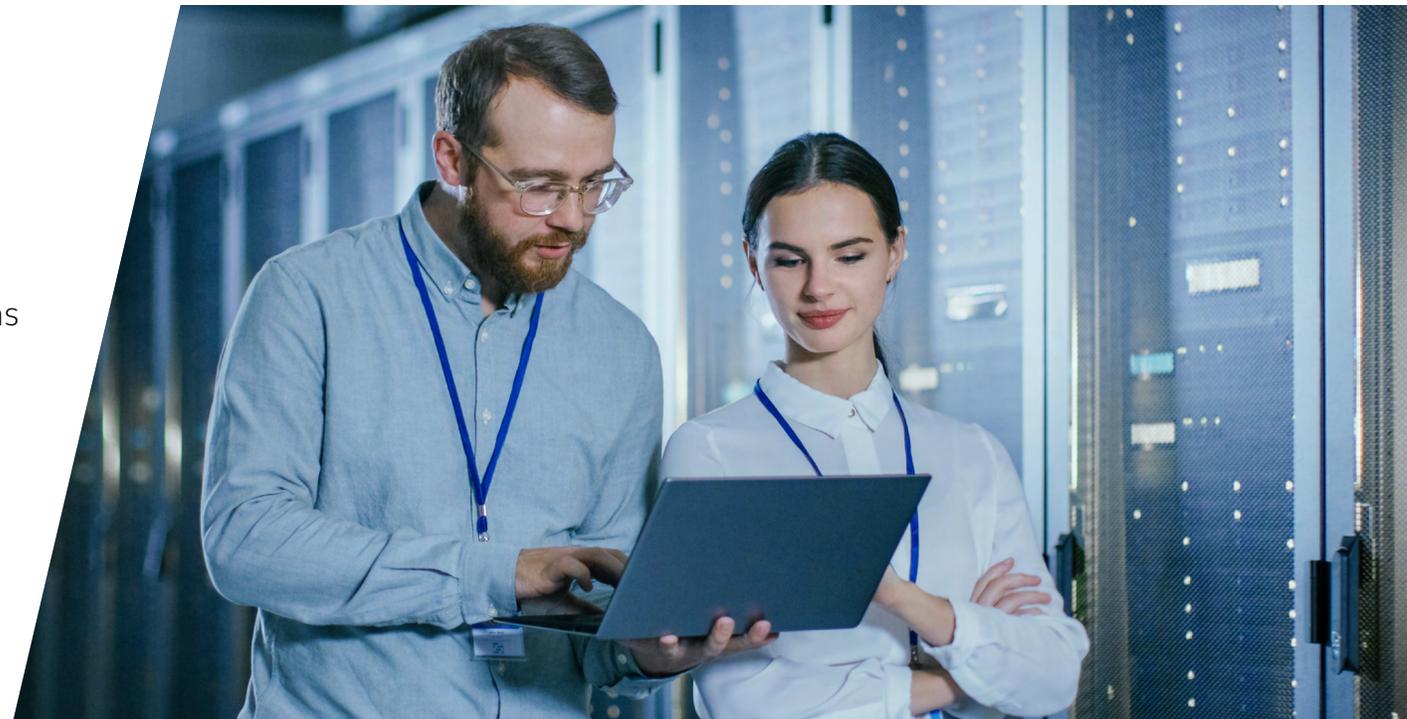
Transitioning from legacy systems to modern platforms enables sharper insights, deeply informed decisions, and exceptional customer experiences. Improving customer satisfaction sits atop the modernization agenda for businesses. Cloud can produce real-time data, keeping a business aware and responsive to customer desires as they emerge.

Learn more about acceleration into the cloud in the [latest research by Forrester and Cognizant](#).

Achieving a smoother cloud migration

IT security, compliance and choice of provider(s) – what to consider when migrating to the cloud

Migrating to the cloud can be a bumpy road for traditional businesses that rely on legacy in-house systems to deliver services and revenue. What about IT security? How do you choose the most suitable cloud provider? How are the data sources integrated? These are Cognizant's insights, gained from thousands of cloud projects around the globe.



Ensuring IT security and compliance

IT security, from implementing the appropriate controls to regulatory compliance, presents one of the biggest migration challenges. However, the hyperscalers have vastly more certifications and dedicated resources than businesses have in their own data centers.

Finding the right provider(s)

In a fast-developing market, businesses find it challenging to choose the right cloud provider from a capability, performance, price, and IT security perspective. Opting for a single hyperscaler's platform as a service (PaaS) offerings increases the vendor lock-in and dependency on their strategy and roadmaps, at the same time resulting in the quickest time to market. Going with multiple hyperscalers, on the other hand, increases the complexity and the internal competency requirement for management and further development of the cloud platforms, but results in less vendor lock-in. In a successful cloud strategy, finding the right balance between using vendor specific services and general services available across the hyperscalers, is crucial.

Speeding up application modernization

Cloud technologies enable faster modernization of digital products and services

Organizations are under immense pressure to accelerate innovation. They need to continuously improve user experience, flexibility, performance, IT security and turnaround times through short, frequent and sustainable software release cycles for greater agility.

None of this is easy. Legacy technology and application landscape, coupled with high operating and maintenance costs, adds to the complexity. This is where the cloud comes in: By retiring technical debt and starting to leverage cloud-native technologies like containers, serverless computing, microservices and modern frameworks, organizations design and build customer-centric digital products and services, faster than ever before.

Follow our guiding principles

Modernizing applications requires more than cloud hosting and microservices architectures though. Whichever phase of modernization an enterprise may be in, success necessitates innovative culture, agile execution and collaborative teaming.

At Cognizant, we have helped numerous companies succeed with their application modernization initiatives. Based on our experience, we have developed 10 application modernization principles that help organizations:

1. Align the application modernization roadmap with prioritized business capabilities
2. In application portfolio rationalization, balance business factors with technology factors
3. Enable the workforce on emerging technologies; adopt agile/DevOps and transform into new ways of working
4. Establish an engineering culture with a focus on software craftsmanship and mastery
5. Streamline processes to identify and eliminate redundant functionalities and invest in new features
6. Identify performance baselines and KPIs to measure outcomes
7. Define a maturity path to measure and upgrade application modernization initiatives

8. Modernize data; data are an essential aspect of application modernization
9. Unlock business value: Elevate systems of record to systems of engagement or systems of insight, thus creating opportunities to kick-start new business models
10. Identify white spaces and build new digital products

Adopting these principles results in positive consequences in terms of improving revenue and profits, reducing costs, improving staff productivity and customer experience, enhancing scalability and accessibility, improving speed and security, enhancing application agility, improving digital readiness, and establishing the right culture to modernize and run digital applications.

Learn more in the whitepaper [10 Application Modernization Principles that Enhance the Digital Journey](#).





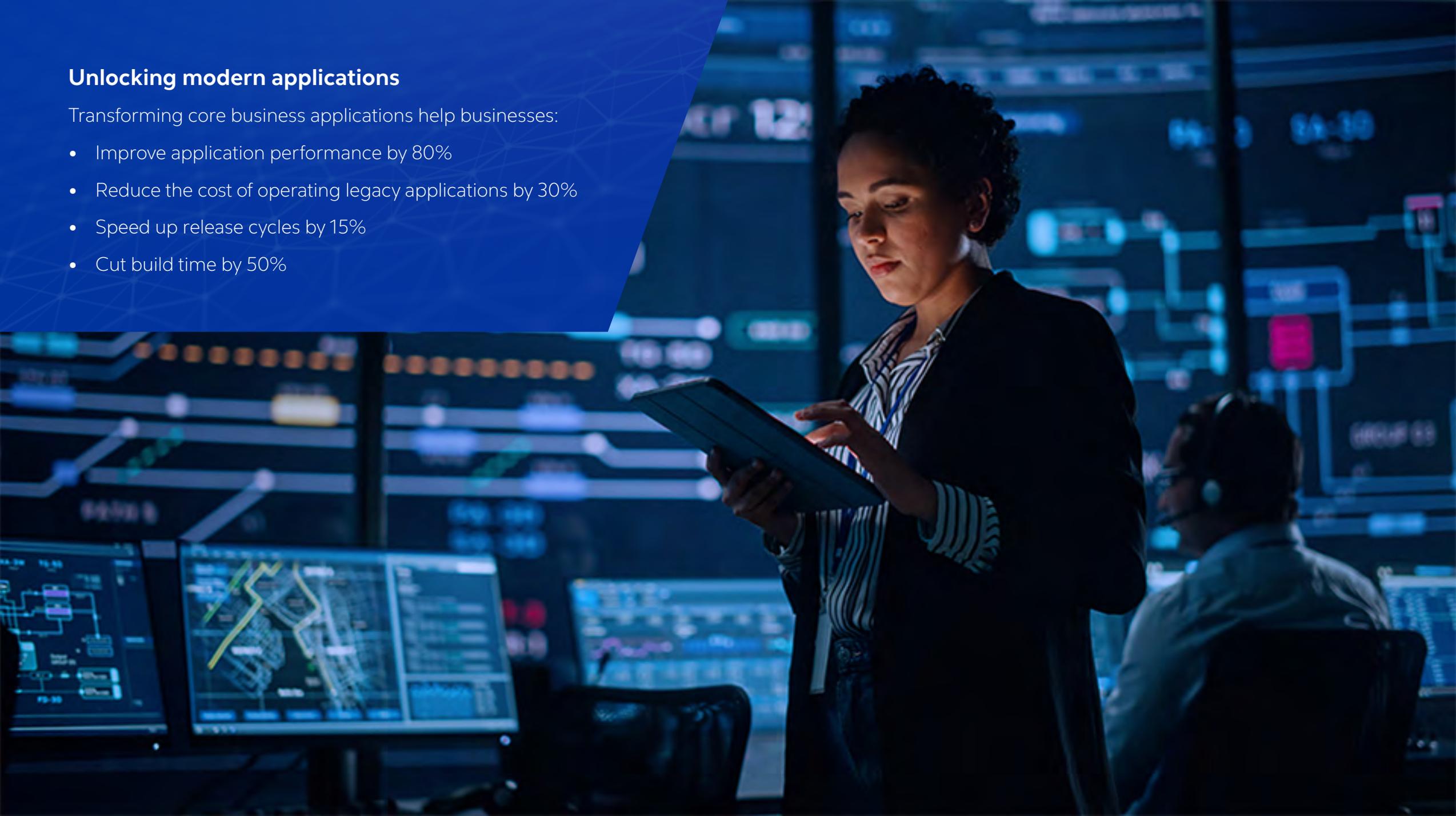
Software engineering and the cloud

Businesses depend on software: it is an enabler of operational efficiency and innovation, and the basis of a growing range of products and services used at work, in the car, at home or anywhere people connect. The pandemic has turned typical consumer behavior inside out – and has spurred businesses to quickly develop customer-focused software, resulting in changes to software engineering approaches and cultures. A robust, secure and scalable cloud foundation is more than ever a prerequisite to succeed with innovation, value-creation and customer-centricity.

Unlocking modern applications

Transforming core business applications help businesses:

- Improve application performance by 80%
- Reduce the cost of operating legacy applications by 30%
- Speed up release cycles by 15%
- Cut build time by 50%





Case study

Leading Danish insurer

New AWS-based cloud platform migration supporting future growth

A few years ago, the third-largest life insurance and pension company in Denmark, with 650 employees and 350,000 customers, demerged from its former parent entity. To support and enable growth in a scalable manner, and to serve their customer network effectively, the company engaged Cognizant to build their new Amazon Web Services (AWS) based cloud platform.



Challenge

- To ensure a successful transition, the client wanted to migrate its systems to a new cloud-based platform seamlessly and quickly, adhere to industry governance and compliance standards, and meet a fast-approaching deadline for the data center exit.
- The client considered public and private infrastructure as a service (IaaS) options, and required a scalable, elastic cloud-based environment with end-to-end service delivery.
- With limited time to establish a new IT platform of its own, the company turned to Cognizant to provide guidance and services.



Solution

- To meet the business requirements, Cognizant leveraged its Cloud Steps Framework and executed a DevOps-led migration to Amazon Web Services (AWS), using cloud-native services.
- After building the cloud platform, the production workloads were seamlessly moved to operations.
- As a result, the client was able to better monitor and optimize the workloads, providing improved services and new digital solutions to its customers.



Outcomes

- Over the 24-month migration, Cognizant successfully migrated 40 key business applications from on-premise to AWS, as well as over 750 mailboxes, two terabytes of Microsoft OneDrive data, and 200 SharePoint sites, without disrupting the client's end-users.
- Cognizant also implemented new IT service management (ITSM) processes, secured the client's network, and created a digital one-stop service desk supporting Danish and English.
- This new cloud platform allows the company to contribute positively to its customers' well-being and good health while remaining an industry leader.

A man with short brown hair, wearing a light blue button-down shirt and a black lanyard, is looking down at a silver laptop he is holding. He is standing in a server room, with rows of server racks visible in the background. The room is dimly lit with blue ambient lighting, and the server racks have many small lights glowing. The background is slightly out of focus, emphasizing the man and his work.

To drive growth and innovation in the digital world, businesses must pave a path that leads from costly legacy systems to resilient cloud-powered models.



Sophus Slaatta

Cloud, Infrastructure & Security Nordics Commercial Leader

As an experienced cloud specialist, operating from Oslo, Sophus helps Cognizant clients across industries to accelerate their cloud initiatives, cloud migrations and app modernizations for better and faster business outcomes.

Sophus' expertise builds from 10+ years of experience in the cloud, IT infrastructure and security area. Sophus has led the Amazon Web Services (AWS) Professional Services business in Norway and has worked at Microsoft as well as with Google Cloud as a business partner.

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About Cognizant

Cognizant (Nasdaq-100: CTSI) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 185 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us [@Cognizant](https://twitter.com/Cognizant).

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