# Services for cloud evolution

CGI

# Today's demands for improved customer experience, scalable operations and development have raised the bar/demand for IT services to a new level.

**Megatrends, such as emissions reduction targets, an ageing population, and the accelerating development of technology, create new requirements and boost the emergence of new services in all market sectors. Companies and the public sector must have the ability to scale up their own operations while simultaneously seeking cost-effectiveness.**

For years, organisations have looked to cloud technologies to provide the required scalability and a faster development cycle. However, the development has also posed new challenges: How to avoid the accumulation of technical debt and excessive charges based on usage, and how to ensure the maximum benefits for application development and the IT infrastructure from shared components, automation, and the utilisation of data.

Cloud environments also create a new security environment, and organisations must adopt a new approach to address the related risks.

This material presents our views on how to ensure that cloud solutions genuinely add value and do not create a conflict between business and IT goals.

Establishing a common goal is one of the most important drivers for the overall solution. Our priority is to help our customers clarify their objectives and find the right solutions for them – without partial optimisation or dependence on specific cloud providers.

Read more on our website at cgi.fi/pilvipalvelut

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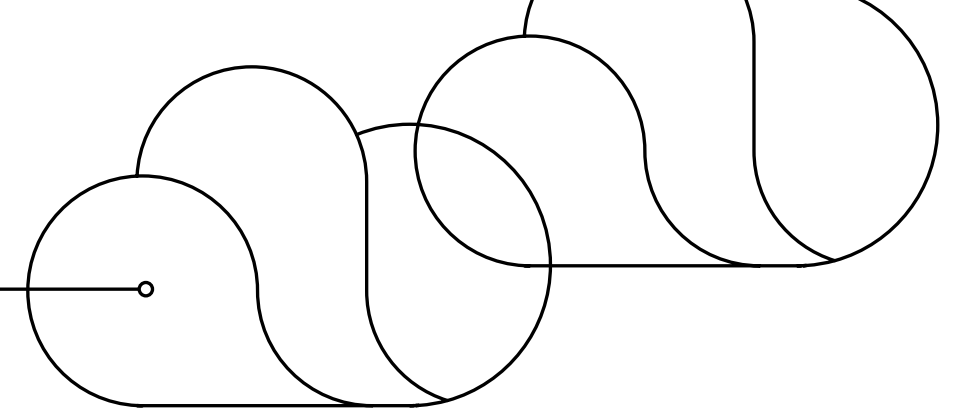
## The cloud benefits business

› **Improved customer experience and competitive advantage:** Improving or developing new services in an agile way

› **Speed:** Significantly shortening the development time from idea to execution

› **Autonomy:** Developing services based on business needs without compromising IT infrastructure

## The cloud benefits IT

› **Saving costs and reducing technical debt:** Cloud Infra, systems, and services reduce need for maintenance and can lead to cost reductions of up to 40–90%

› **Maintaining control without reducing time for new development:** The developed application and IT environment follows the defined architecture guidelines

› **Ensuring security:** Mitigate cyber security risks across the organisation

# Steps to transformation

**In the traditional (legacy) world, resources are heavily focused on IT platform and it's maintenance tasks, for which reason only a small share of investments can be directed to the needs of new application development based on business requirements.**

Cloud transformation enables this situation to be reversed: The main investment can be directed to the development of applications for the customer interface, as there is no need for up front capital investments to on-premise data centers as cloud compute and storage involve only operational costs paid by use.

This also supports business needs for relatively low cost and agile application development. With the increased development speed, organizations are tempted to implement point-to-point solutions fast but without proper attention to coding Ops side features such as self-diagnosing and self-healing into their cloud solutions. Unfortunately, when implemented in this manner, cloud transformation creates a technical debt for the organization. At worst, this increases operational costs significantly in the absence of cloud platform operational optimization, maintenance tasks automation and service integration.

## Costs today

L1

L2

L3
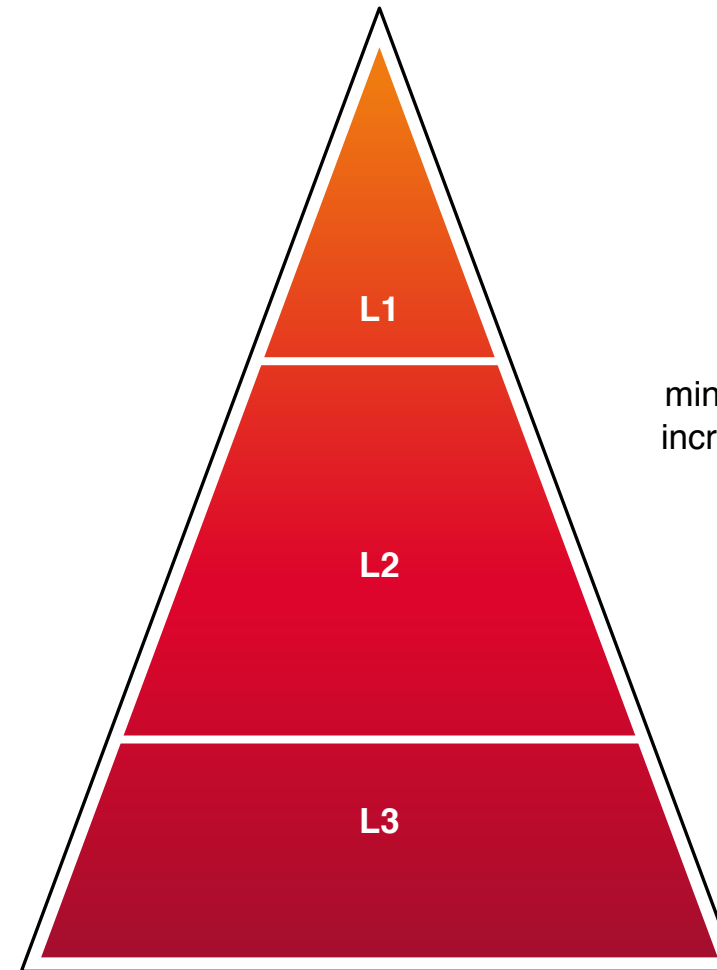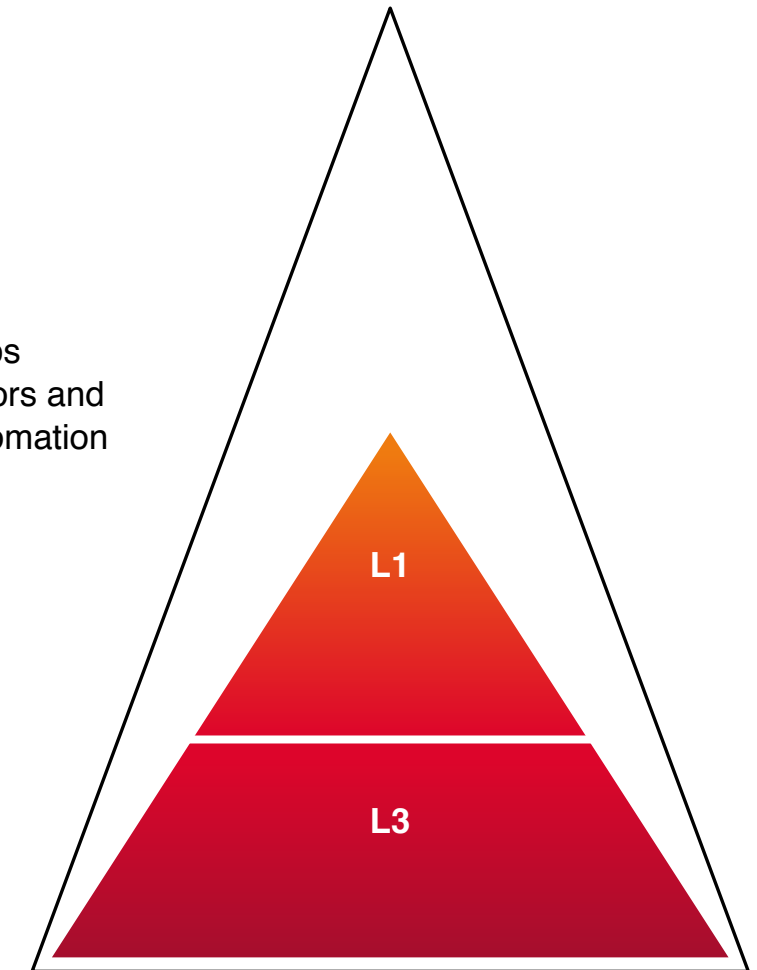
CloudOps minimizes errors and increases automation

## Costs after

L1

L3

*L1 = Level 1 support (HelpDesk), L2 = Level 2 support (applications & infrastructure management), L3 = Level 3 support (DevOps teams)*

# What do the costs consist of?

Instead of the desired cost savings, many IT departments have found that maintenance costs are higher than anticipated after the IT infrastructure, application development, and various services have been transferred to the cloud.

Large companies may have several DevOps application development teams, which, on the flip side of agility, create software and architectures that are scattered across cloud environments and are completely separate from each other. For IT management, the end result is a chaotic situation in which the technical debt and resulting costs grow uncontrollably.

**According to the studies, 40-90% of the total costs of a system are incurred after the system is created, as the number of cloud applications increases rapidly.**

**With the CGI CloudOps service, it is possible to reduce maintenance costs dramatically.**

# What is worth developing and when should you stick to the old?

The benefits of the cloud are maximised by automating traditional infrastructure maintenance tasks to enable application development to focus on creating new solutions.

## The three levels in switching to the cloud

We have defined three levels for organisations' cloud maturity. The highest of these can be attained using NoOps methodology. At the same time, we recognise the need for on premises extension in terms of cloud infrastructure as a service in many organisations, whereas in some situations it may makes sense to follow traditional On Premises models only.

See the three levels of cloud evolution explained on the next page.

**We help our customers determine the appropriate level of cloud maturity for their situation.**

**We bring strong expertise to our customers in each of the three areas, and we help them unlock the full potential of the cloud.**

# Cloud evolution towards NoOps

**On premises**
## IMS + AMS

A traditional model may be most sensible when legislation or contracts impose certain requirements on data management, for example. Transforming the existing system may also not produce sufficient efficiency to justify the investment; in this case, cloud technologies bring the greatest benefit when developing new solutions.

› Physical hardware
› Virtual machines
› Operated by humans

*Migration*

**Cloud infrastructure**
## Cloud service models

Business scalability can also be sought by using the public cloud as part of the IT infrastructure. However, this still requires human operators and various maintenance service models.

› Infrastructure as a Service (IaaS)
› Technical debt
› Operated by humans

*Modernization*

**Cloud native solutions**
## NoOps

The NoOps model delivers significant benefits due to cost savings. Thanks to the high degree of automation in the cloud environment, traditional Application Management (AM) is not needed to maintain services, and the use of capacity can be flexibly optimised according to need.

The productivity of software development is also improved, as development teams can focus on developing applications that add value for the business, rather than infrastructure maintenance tasks.

› Serverless
› Platform as a Service (PaaS)
› Automated infrastructure (IaC)
› Automated monitoring
› Self-healing applications

**Cloud evolution**
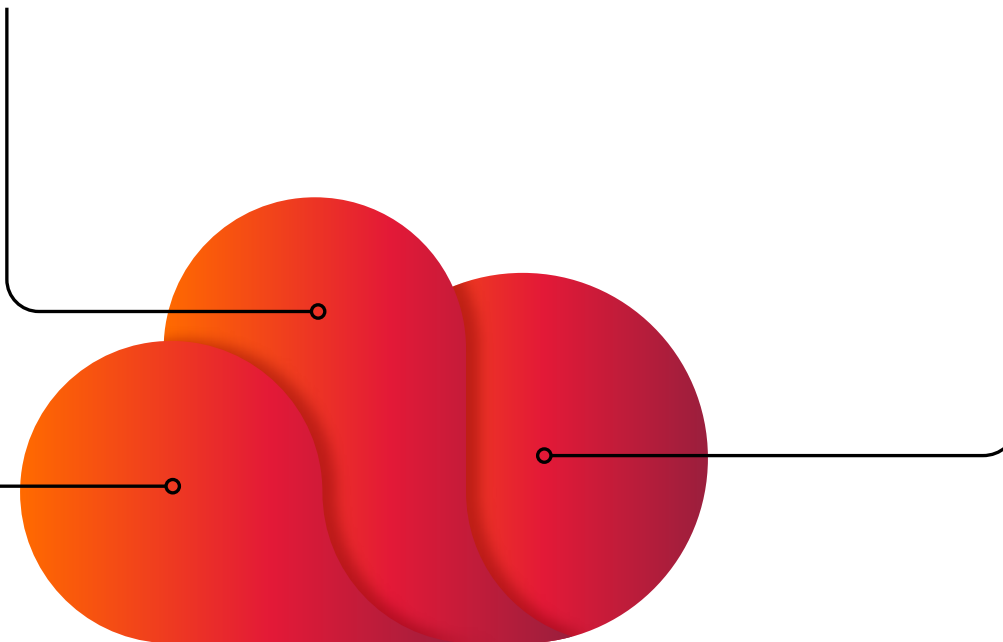
# Added flexibility with containers

**When application portability is a key requirement containers could be the right solution, providing added flexibility in business decisions when quick movements between the cloud and on premises are a requirement.**

Containers make it easy to manage and secure applications independently of the infrastructure that supports them.

We are seeing the industry consolidating around Kubernetes for managing containers at scale. We offer our customers services based on this portable, extensible, open-source platform to manage containerised workloads and services with a framework to run distributed systems resiliently.
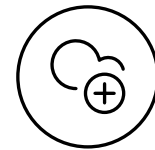
## Containers bring added value with:

› **Fewer overheads** – Containers require less system resources than traditional or hardware virtual machine environments, because they do not include operating system images.

› **Increased portability –** Applications running in containers can be deployed easily to multiple different operating systems and hardware platforms, with more consistent operation. DevOps teams know applications in containers will run the same, regardless of where they are deployed.

› **Greater efficiency –** Containers enable applications to be more rapidly deployed, patched, or scaled.

› **Better application development** – Containers support agile and DevOps efforts to accelerate development, test, and production cycles. They are a platform for all application deployments, both legacy and cloud native.

# Six dimensions of the cloud

CGI manages cloud services from containers to the most advanced serverless technology with the same quality and scalability as traditional IT services.

This means that we can expertly manage your overall system with the professionalism and experience of a big organisation equally well in cloud environments, traditional environments, and combinations of these. In our projects, we place particular emphasis on user experience through service design.
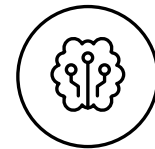
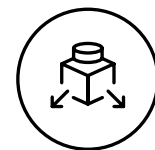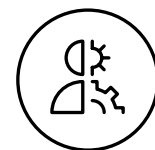Our cloud services cover the following six dimensions.

| | On premises **IMS + AMS** | → *Migration* | Cloud infrastructure **Cloud service models** | → *Modernization* | Cloud native solutions **NoOps** |
|---|---|---|---|---|---|
| Cloud advisory | ███ | ██ | ███ | ██ | ███ |
| Security services | ███ | ██ | ███ | ██ | ███ |
| Advanced analytics & intelligent automation | | | | ██ | |
| Cloud native development | | | | | ███ |
| Workload migration & transformation | | ██ | | | |
| Managed services | ███ | ██ | ███ | ██ | ███ |
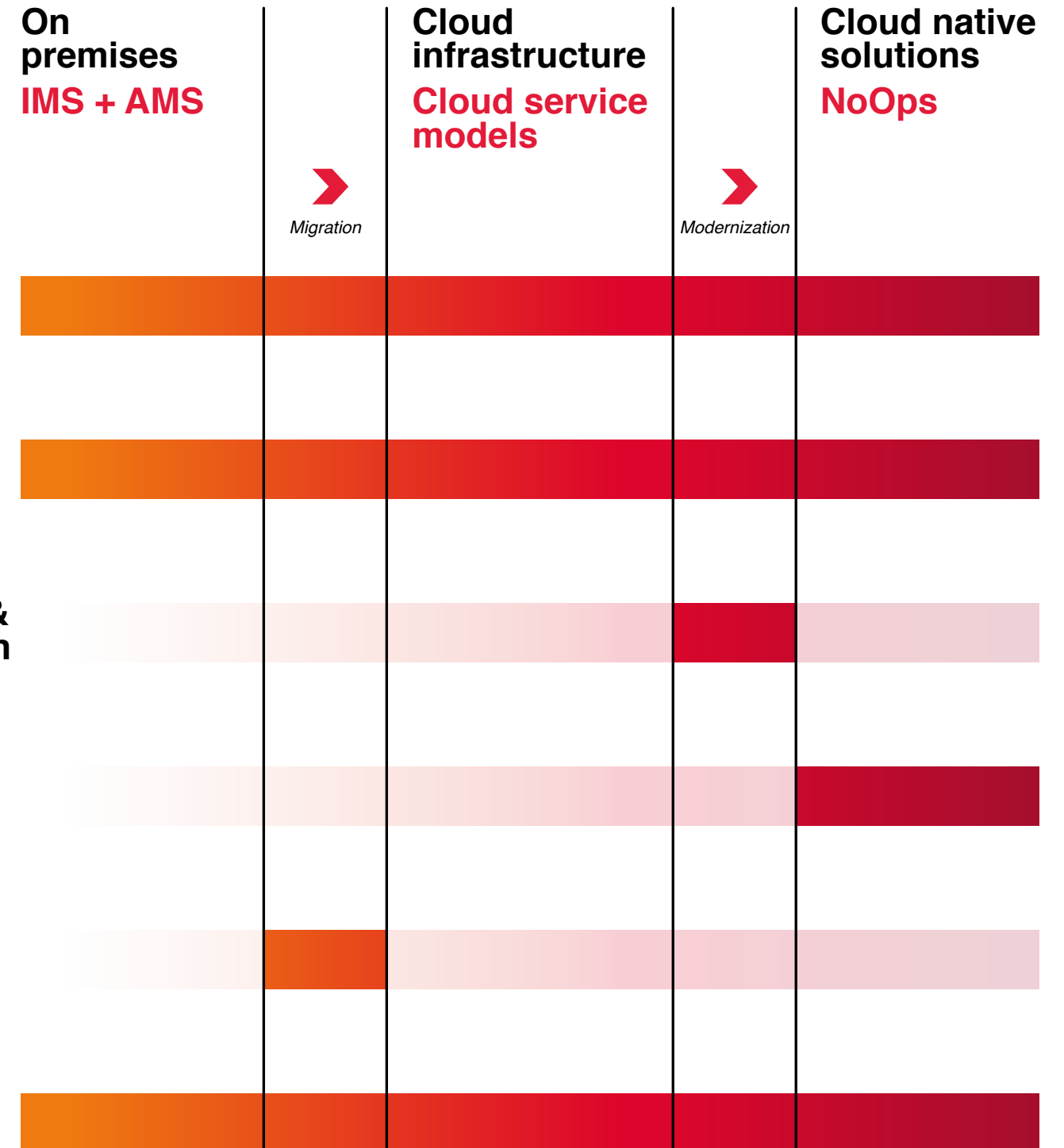
# Cloud advisory

We help you through transformation by improving your understanding of what you have and what is required for successful change(s). A good cloud implementation strategy takes drivers from strategic targets and initiatives, and on a domain level answers where, when, and how to get there.

Enabling you to:

› Make correctly timed development with a transformation roadmap

› Provide speed and flexibility for business with improved business alignment

# Security services

Ensuring confidentiality, integrity, and availability in public cloud environments requires a holistic approach to security along the whole journey. Cloud platforms provide advanced security capabilities, but they are also exposed to new attack vectors. That is why security management is a crucial part of the cloud journey, and we are here to assist you.

Enabling you to:

› Remain in control and mitigate cloud risks across the organisation

› Always have access to the latest cloud security tools

› See the big picture with combined visibility to organisation on-premises and cloud security.
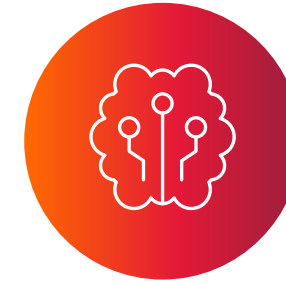
# Advanced analytics & intelligent automation

We help our clients to transform their business with data and increase their productivity through intelligent digital solutions and hyperautomation.

Enabling you to:

› Optimise your operations with increased insight and automated manual tasks

› Have new revenue streams with new data-based business models and improved customer experience

› Enhance time-to-market

# Cloud native development

We deliver cloud native development using the latest technologies, frameworks, principles, and methodologies, blended with the client proximity model to create the most valuable solutions for clients. Service design ensures a great user experience for developed applications.

Enabling you to:

› Save money on maintenance with quicker application development

› Have a more efficient application development process

› Bring transparency to quality and business tracking

› Have increased stability in the production environment

# Workload migration & transformation

We help you onboard and migrate your applications and platform services to business-optimised cloud services.

Enabling you to:

› Reduce technical debt and control cost "leakage"

› Significantly improve the value of onboarding cloud services

› Leverage cloud adoption frameworks and best practices for improved efficiency
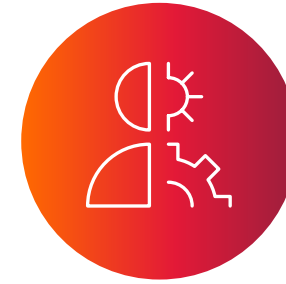
# Managed services

We manage and operate your cloud platforms and environments to ensure the best practices, policies, and cost efficiency are implemented and optimised in cloud-based development and application platforms.

Enabling you to:

› Bring cloud use to the whole organisation

› Increase agility for business

› Optimise cloud usage and costs
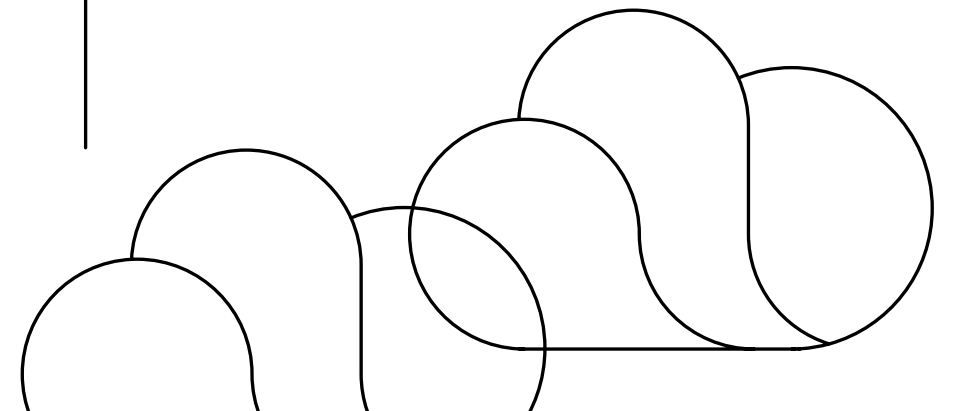
# You decide the desired end state in cloud evolution – we make sure you get there

We provide hyperscale public cloud services in addition to existing high-quality legacy services. At CGI, we have the experience and know-how to provide new world services with the quality and discipline that clients are looking for and that are seen in the old world. Our vision is to provide clients with a full range of services for both old and new worlds from one counter: services that are scalable, high quality, and provide seamless delivery and quality experience.

## Our value proposition

› Our services support agility and self-service in cloud services. Taking into account the reasons for cloud service development: speed and scalability.

› The nature of cloud services involves continuous development. CGI's service development keeps an eye on emerging platforms and provides customers with a constantly evolving service package.

› Customers have the option of choosing from a number of public cloud services, as well as various data centre solutions. CGI's services take account of and support all these scenarios.

› Compliance is particularly important in public cloud services. Security and continuity are built into all service components and can be expanded with a variety of cybersecurity services.

› Public cloud providers are constantly developing their services to meet the needs of development and maintenance. CGI's services always first exploit native features to implement services.

**CGI**

# Your preferred partner

**The NoOps culture is at the heart of all we develop**

– we maximise the benefits of the cloud and bring our
cross-industry knowledge to your game.

**Transformation is the way to move forward**

– we optimise your cloud usage and top it with our deep knowledge of cybersecurity.

**Maintain on premises in the most beneficial way**

– we bring cost efficiency with established service models and ensure
top-of-class management for systems that remain on premises.

**Let's continue your journey
to the cloud together!**

**9/10**
Customer
satisfaction

**95%**
Projects on time
and on budget

**500**
Cloud developers
and designers

## Check out CGI's CloudOps Centre

› Smooth projects with almost 500 experienced cloud
developers and architects with several succesful projects

› Cloud development centre ensuring you
have access to the latest technology

› Maximising cloud value with no capex and low opex with NoOps
development (% proven savings) supporting transformation

**cgi.fi//pilvipalvelut/cloudops**

# About us

At CGI, we are insights-driven and outcomes-based
to help you accelerate returns on your investments.

We provide comprehensive, scalable, and
sustainable IT and business consulting services
that are informed globally and delivered locally.

**CGI**