

CLOUD GOVERNANCE GUIDE- BUSINESS ALIGNED APPROACH TO CLOUD UTILIZATION





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Introduction



Many Nordic companies have transitioned to the cloud enthusiastically but often with insufficient preparation. Attracted by the possibilities a public cloud offers, they have taken the cloud services into use. Still, their cloud readiness may not stretch to thinking about their strategy or operations analytically. They have fallen into following certain practices, and the demands associated with change were not internalized on time.

There are positives in taking a courageous leap forward, but without planning and a systematic approach, you will end up with project-specific solutions. For example, each project will have its own service level requirements, or your

applications will each have different technical implementations relating to identity governance, for example. Issues are solved one at a time rather than following standardized practices.

Organizations that take advantage of the cloud realize significant benefits from it across their business operations, but only if they handle their cloud migration appropriately. To get the most out of your cloud services, you need to follow common principles and agreed solutions for cases independent of business needs. The governance model provides you with an agile way to serve your business's needs and build an effective and efficient company.

It is worthwhile to develop your company's cloud governance model as soon as possible to clearly define the standard principles and guidance on cloud governance and its design.

This guide offers you insight into the cloud governance model and the best practices to take advantage of in your cloud services. We will also correct common misconceptions about cloud services and their governance. This model will help you develop your use of the cloud and harness more significant benefits for your business.

Happy reading!



Cloud platforms offer a competitive advantage

Nordic companies, on average, have widely embraced the use of the cloud for many purposes. Few companies do not utilize cloud platforms at all. However, their application of cloud platforms may be fragmented and solution-specific, and cloud governance often needs improvement.

The transition to the cloud should never be made just because of new technology – you should utilize cloud platforms to offer benefits to the business.

The most commonly desired benefits are improved agility of operations and scalability. Cloud platforms are also a faster way to integrate new business-friendly innovations such as IoT and machine learning. Instead, the assumed cost-benefit is less commonly the main reason for the use of cloud platforms.

With cloud services, you can realize dozens of different benefits. Still, only a few of these benefits are achieved in Nordic companies when many potential benefits are not clearly identified. They, along with other unutilized ones, such as cloud-enabled modes of operation like infinite scalability, cloud-native capabilities, cloud DevOps, and cloud security. Also, automations that would make cloud governance easy, cost-effective and secure are not used. Cloud migration is done with caution, and only modest benefits are sought.





The benefits do not always come easily



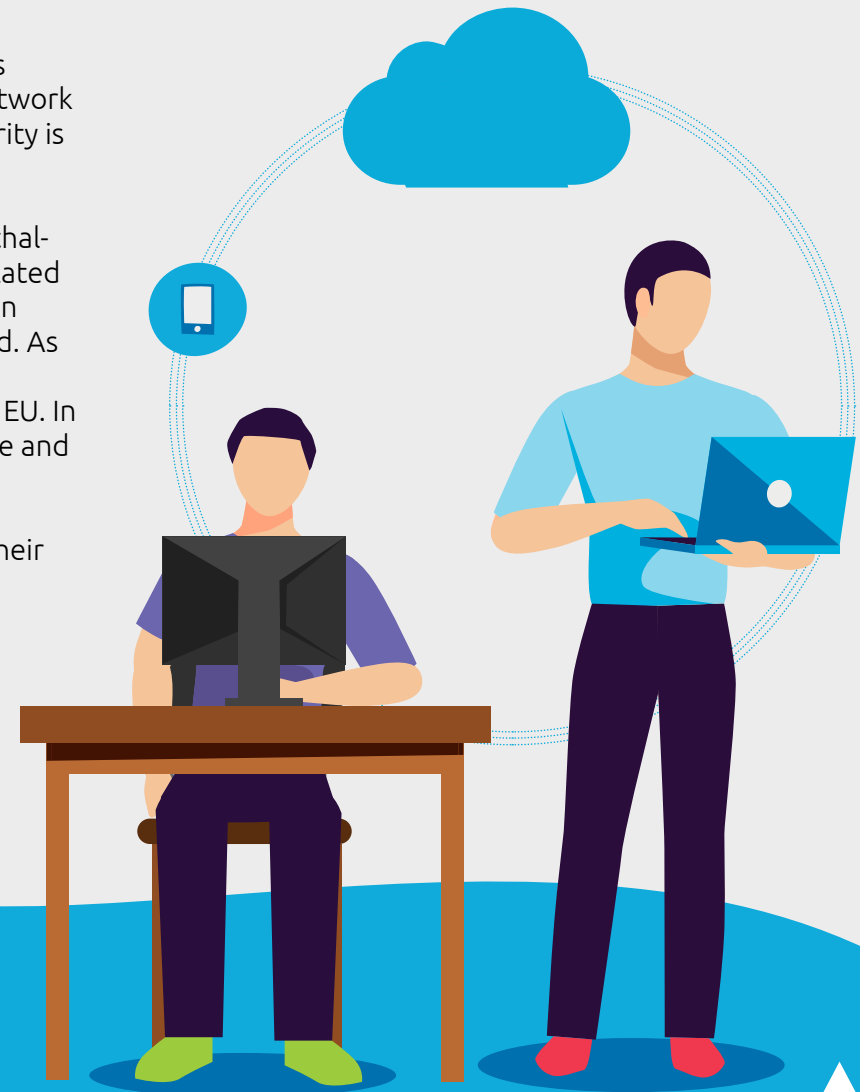
The cloud is not just about technology. Still, one of the biggest challenges organizations face is ignorance of which technology solutions add value to their cloud utilization, and how they will support their digitalization strategy. The cloud world is so complex and fast-evolving that choosing the best technologies and using them correctly doesn't happen by itself.

Another common challenge in using cloud platforms is that companies do not fully understand how cloud architecture differs from traditional data centers. They don't know which practices can be transferred in their current state and which things will need to be done in a completely new way.

For example, outdated security mindsets, processes and tools do not cope with cloud environments. The responsibility for security in cloud platforms is shared between you and your cloud service provider. Fortunately, cloud service platforms have ready-made services for security. Many of the tools are easy and even free to introduce, such as multi-factor authentication, storage and communication encryption, and hardware-based key management. By these and other means, risks can be minimized.

The notion that a public cloud is less secure is outdated. If security issues arise from utilizing the cloud, the cause often lies with the user and not with the platform. This may happen if your cloud architecture is constructed in the same way that your own or a service provider's data center is. Also, services related to cloud platform security are not always utilized as customers may assume that traditional network compartmentalization and periphery security is sufficient.

Of course, security can also bring its own challenges: for example, certain strongly regulated industries may have limitations regarding in which country personal data may be stored. As a rule, all major cloud platforms provide information processing and storage in the EU. In this case, you still need to make sure where and how the customer's solution is managed and what governance practices the cloud platform service provider has relating to their staff's operations.





Costs will accrue without continuous optimization

Sometimes, the transition to the cloud is cheaper for businesses than buying traditional capacity.

This argument is misleading because the primary reason to utilize a public cloud is not to save costs but the previously mentioned agility and scalability. If a company's infrastructure is transferred to the public cloud with the expectation that this alone will lead to cost savings, it will probably result in disappointment.

It is desirable that utilizing cloud platforms leads to cost savings. However, in practice, cost optimization is anything but easy. Although cost optimization may be highly prioritized, ultimately, it is determined by the ability to identify the decisive measures you can use to manage your cloud infrastructure and the costs optimized, taking into account all the details.

Expenses can be brought under control and even reduced when your cloud structure is planned and savings are optimized properly. Cost optimization requires utilizing the cloud platform to:

- make capacity reservations for standard loads, continuous workloads- optimization of both development and test environments using dynamic allocation.

At worst, the cloud can become more expensive for the company. It is by no means uncommon that companies pay for completely unnecessary capacity if it is not understood that the cloud does not work in the same way as a traditional data center or what new opportunities it can

create for your business. Your governance model must take continuous optimization into account in your cloud service utilization.

Predicting the cost savings for an individual solution is usually tricky. However, it is easier to predict your application portfolio's costs, which more closely correlate to your business's volume than the traditional one does. It is also easier to react: if business is going badly; downscaling is possible.

When using your own data centers, it is critical to build large enough capacity in one go - so most of the time you have more than you need. On the other hand, with cloud platforms, you can find the suitable capacity by experimenting and adjusting as necessary. You can do little to affect costs retrospectively in the traditional world, but you can quickly get rid of extra cloud capacity.

The cloud is such a significant enabler that it should not be thought of as an IT cost but as a business investment. Therefore, it is not at all an exaggeration to hire persons whose task is to manage and optimize the procurement and costs related to your cloud services. Internationally cloud cost governance or financial operations tasks are handled, for example, by cloud finops managers.



Cloud Governance Model - what and why?

The cloud governance model is part of an organization's journey to take advantage of cloud services, but not its beginning. Firstly, you should prepare your organization's cloud strategy to understand what business benefits you hope to achieve through utilizing cloud services.

Before creating your company's cloud governance model, it is worthwhile to map out your organization's capabilities for deploying cloud services. Following the cloud maturity model is an excellent way to do this. Often before the development of a cloud governance model, practical experience is sought through pilot projects. This is an excellent way to gain valuable experience with cloud platforms and their special features relating to your company's specific business needs.

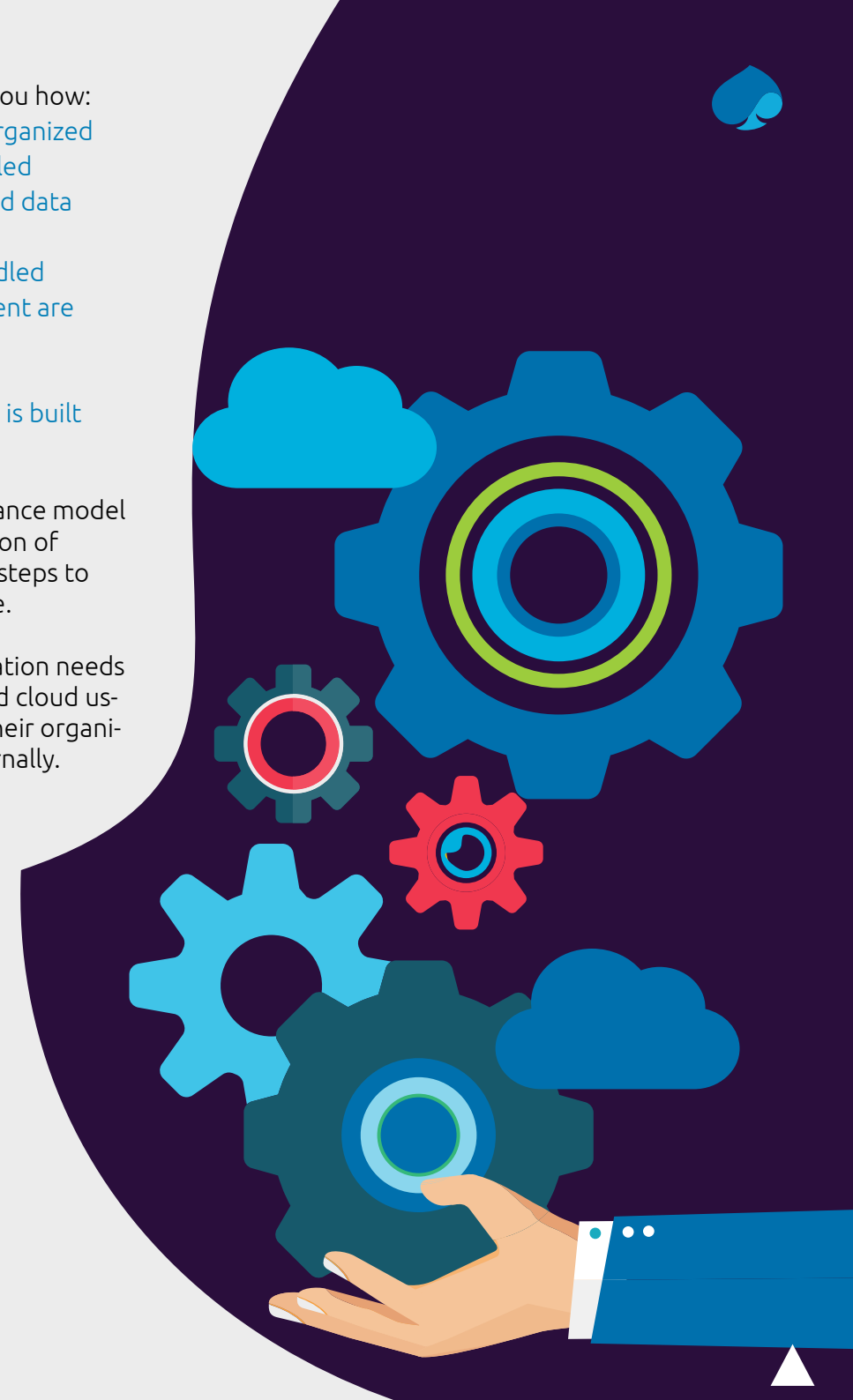
Once the groundwork is done, then it is time to create your cloud governance model. The cloud governance model is a collective policy of your company's standard practices. By creating a cloud user guide for your company from the very beginning, you avoid making decisions relating to your cloud deployment at the last minute, one project at a time.

So the cloud governance model tells you how:

- your cloud platform resources are organized
- identity and access control are handled
- compliance, information security, and data protection are ensured
- monitoring and governance are handled
- maintenance and change management are handled
- costs are monitored, and
- what kind of common infrastructure is built for workloads (landing zone).

One sub-area under the cloud governance model is cloud operations, i.e., the organization of governance in practice – the practical steps to ensure the cloud is functional and safe.

Who controls and what? Your organization needs people to optimize the cloud costs and cloud usage. That is why responsibilities and their organization need to be clearly defined internally.





A complex cloud requires a different governance model

Cloud-based architecture and business are so much more diverse and complex than traditional architecture that you cannot rely on the same policies and tools to succeed in the public cloud.

Therefore, you should know that the benefits of the cloud are only realized if your company's transition to the cloud is handled correctly and cloud platform governance is in good shape. Without a governance model, it is easy to move into unit- and application-specific practices and accrue expenses that you can avoid with better planning of the cloud procurement process.

Cloud governance and cloud operations are never fully automatic, even if the cloud technologies used were easy and versatile and if the management of a cloud platform is a purchased service. Effective cloud governance requires planning and work.

The benefits of investing in cloud governance, however, are clear. When an organization has developed a governance model, it can focus on its core business development.

This offers more growth opportunities for the business. The reason to use the cloud is often related to agility and scalability, which can be achieved thanks to the cloud platform. On the other hand, if optimizing costs is the primary motivation for moving to the cloud, you can only realize cost savings through cloud governance.



A governance model is critical for cloud services with shared responsibility

The use of a public cloud inevitably means that operational measures are outsourced, and accountability and expertise are also shared with external partners.

However, it is wrong to imagine that when utilizing the cloud, responsibility for information security and other developments would transfer to your cloud service provider as all users have their own areas of responsibility. From this perspective, the cloud differs much from the traditional world of datacenters.

Cloud transformation always means identifying the competencies your organization needs. Introducing a new architectural model may have a surprisingly significant impact on financial governance, for example. Roles within your company do not automatically remain the same. The previously mentioned cloud maturity model is an excellent way to map the competencies and make cloud competency standard for all.





| Area of responsibility | Own infra | IaaS | PaaS | SaaS | Responsible party |
|---------------------------------|-----------|----------|----------|----------|---|
| Data and data protection | Customer | Customer | Customer | Customer | Responsibility always remains with the customer |
| Terminal devices | Customer | Customer | Customer | Customer | |
| Identities and orders | Customer | Customer | Customer | Customer | |
| Identity and directory services | Customer | Customer | Customer | Customer | Responsible party varies by type of service |
| Applications | Customer | Customer | Customer | Customer | |
| Network security controls | Customer | Customer | Customer | Customer | |
| Operating systems | Customer | Customer | Customer | Customer | |
| Physical servers | Customer | Customer | Customer | Customer | Responsibility of the cloud platform service provider |
| Physical network | Customer | Customer | Customer | Customer | |
| Datacenter physical safety | Customer | Customer | Customer | Customer | |

 Customer

 Cloud service provider





A multi-partner cloud

As said, a cloud-based company inevitably outsources something when its architecture no longer relies on its own datacenter. However, it depends on the organization and its procurement strategy, as to what extent it utilizes external experts and outsources its operations. What is certain is that cloud-related partnerships will emerge. Some companies procure services directly from the cloud platform service provider and handle everything else themselves. Most need a partner to assist with their cloud platform governance and one or more application partners. The governance partner is necessary, especially when you are using multiple cloud platforms or are constructing a hybrid cloud.

It is easier to think about what not to outsource: as a rule, everything but security can be purchased from outside.

You should involve your external partners in your cloud platform as early as possible. It's still good to remember that even though know-how and labor can be purchased as a service, responsibility cannot be outsourced. Also, your organization itself is always responsible for its internal management and the overall picture.

Selecting suitable cloud providers and governance partners is not always easy. You will reap the most significant benefits from both your

cloud platforms and your partnerships, when you choose an expert partner who offers a business perspective. The cloud is not just technology or 'someone else's data center' – it is a new way of doing business and providing services. If your partner does not understand this, the benefits of the cloud remain mostly unrealized.

Many people still think that doing something yourself leads to cost savings and, therefore, often desire to manage their company's cloud internally. At Capgemini, we recommend that the less your organization is able to retain cloud-dedicated employees and the larger the strategic role the cloud plays, the more you should strive to outsource services. A big partner has more resources to be used, for example, for their cloud development.

When buying support from a partner for developing your cloud governance model, the drafting process offers a unique opportunity to audit your company's performance. After that, your company will be better informed about its capability and will have concrete areas for development.

It may be risky not to buy outside expertise and not to network if you do not have the expertise in-house. It is worth looking at the cloud platform as an ecosystem that, in addition to the cloud service provider, also includes other service

providers, software development partners, auditors, and expert service providers.

Although it is worth hiring individual cloud experts for your organization, partnership has its own advantages.

Service providers have several customers from whom they all gain experience. Such an employee usually has a more diverse experience of the cloud and solving problems than in-house cloud expert. Also keeping knowledge up to date in a rapidly evolving cloud world is easier.



How to get started with designing a cloud governance model

Before you start drafting your cloud governance model, make sure that your business has a cloud strategy: what benefits do you want from the cloud? In which direction do you want your business to develop? What kind of organization do you want to build, and what tools does it require? If there is no strategy for cloud utilization, it is difficult, if not impossible, to create and implement a cloud governance model.

Once the strategy is clearly defined, identify what support your company needs for the implementation and what kind of partners you currently have.

Prepare by doing background work and analyzing the current situation.

Among other things, these questions every company should ask themselves:

- Why are cloud services being deployed?
- How can cloud services support the business's vision and mission?
- By utilizing cloud platforms are you aiming for superior customer experience or new digital products?
- How many different cloud platforms are utilized?
- How is automation or artificial intelligence utilized?
- Are there any regulatory requirements to consider?

There is no perfect, all-inclusive starting point from which to build a cloud governance model. The model's content and format depend on the industry and organization. However, all governance models should cover certain critical issues.

These include:

- cloud platform subscription policies
- naming conventions
- essential information security and data protection requirements and their

implementation

- operational practices that ensure business continuity
- DevOps policies.

We recommend that your cloud governance model be formulated in such a way that it can be given to an external partner to read, although these partnerships may not exist when the governance model is being created. It is important for all external partners to view the cloud governance documentation: it explains the requirements and rules that your cloud platforms operate.





The cloud governance model in practice

At worst, a cloud governance model may be a several-hundred-page long document that no one will ever read. You should design your governance model to support operational practices and serve as a working document to govern actions and from which you can find your company's guidelines and best practices for utilizing cloud technology.

Make a concrete plan and schedule for implementing your cloud governance model. From the outset that everyone whose work relates to your company's cloud follows the model and understands what they should do and how. Take care to ensure that everyone complies with the instructions. If they do not comply, intervene if necessary to ensure the correct practices are followed. It should be clear to employees when they should turn to the cloud governance model and where they can find the correct instructions.

Embrace the principle of continuous improvement and ask yourself: are we doing the right things? Are we doing things the right way? If your technology solutions do not generate business leads and business benefits, consider carefully whether they are worth continuing.

Remember that the governance model needs to be updated as your business activities evolve. A good governance model provides the necessary framework within which you can agilely innovate new solutions to benefit your business. Keep your eyes open for new business opportunities that the cloud can offer, and be prepared to respond.



An evolving cloud governance model and utilizing cloud platforms

Even in cloud governance, not everything can be completed right away. Seldom do companies implement the correct measures to make their public cloud implementation go entirely smoothly. Firstly, it is worth designing a governance model that covers the early stage services - you can specify the rest at a later date based on your own or partners' experience.





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