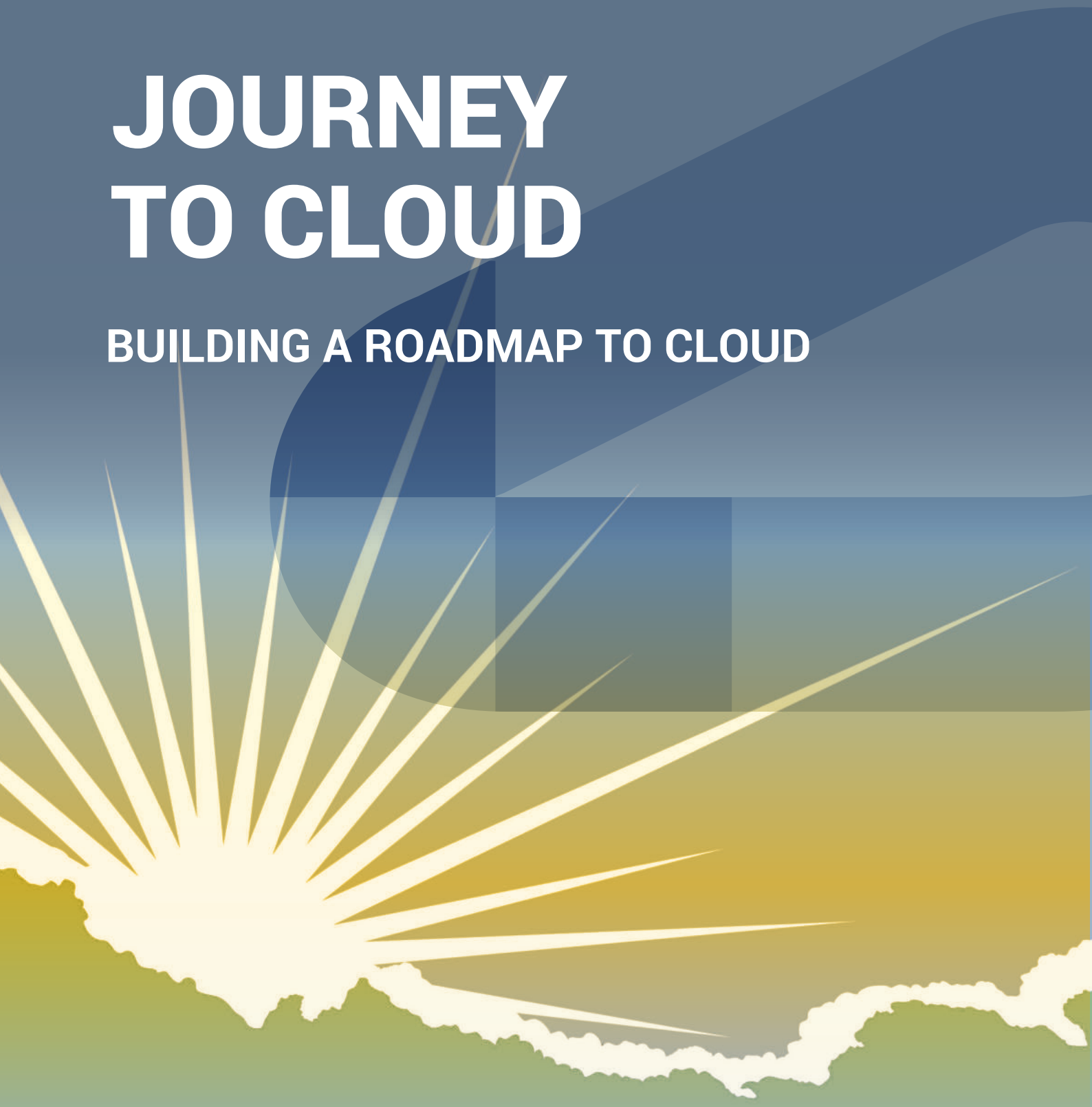
NTT DATA

JOURNEY TO CLOUD

BUILDING A ROADMAP TO CLOUD



FUTURE AT HEART

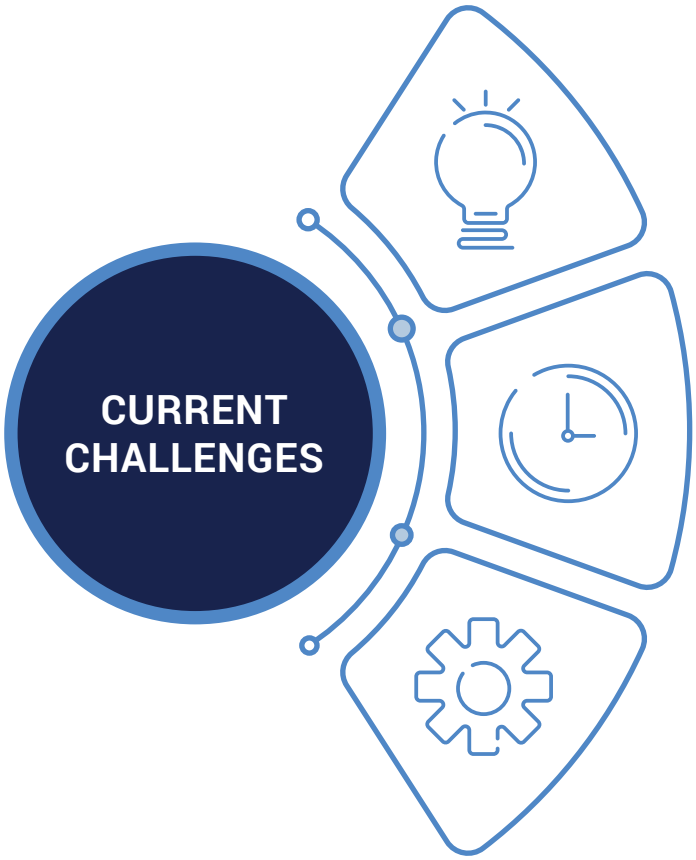
WHY MOVE TO THE CLOUD?

Enterprises of every shape and size are moving to the Cloud. There is a real sense of inevitability about this now, and it is not hard to see why, because they are hoping to make large financial savings as a result. Consultants suggest it is possible to reduce fixed costs (overheads) by anything up to 31%, with an equivalent saving on transaction costs once they have moved their IT infrastructures and applications entirely to the Cloud.

In fact, achieving these cost reductions is by no means certain, and they don't just happen: they have to be worked for. Enterprises that believe costs will go down fast and painlessly are missing the real benefits they should be targeting. These include faster speed to market with new offers, products and services, backed by access to enhanced innovation through easier collaborative, ecosystem-based working- all enabled by Cloud.

Figure 1 below helps to summarize the options facing enterprises as they consider how ambitious they want to be concerning their move to Cloud.

LANDSCAPE CHALLENGES



BEYOND IT

Enable, **manage and delivery in a multicloud model at scale.**
Achieve the intented velocity of change.
Determine how to measure success: **calculate tangible and intangile ROI.**

DIGITAL IT

Avoid multimodal IT (segregate projects into faster and slowes lanes).
Rearchitecture applications supported both cloud-enable and cloud-native approaches.
Define a realistic economic case (based on validated assumptions)

TRADITIONAL IT

Determine the **F4P of application and data.**
Integrate, **manage and secure off- and on-premises applications and data as a whole.**
Tradeoff of **CAPEX to OPEX.**

Figure 1: the three steps in Cloud evolution, from pure IT optimization focus; through to developing new ways of using digital IT; and finally to creating a true innovation culture, as the business becomes more digital/Cloud native.

In the future, the opportunities may grow still further. As Cloud transforms into what we think of as Next Generation Networked Cloud, so we will see greater convergence of technologies that have traditionally been thought of as separate from each other. This creates interesting synergies, which innovative businesses can turn to their advantage.

Extended Reality (XR) and low-latency connectivity (enabled by 5G) makes it easier to control remote assets from central locations that can be anywhere on the world. Blockchain and Cloud combine to transform supply chains by establishing product and service ePedigrees.

Virtualized collaborative working spaces (safeguarded by advanced cyber-security solutions), enable faster innovation, and also open up new forms of service partnership (for example, bringing pharma, medical device and health service specialists together to deliver all-round individualized treatments).

The initial cost savings from moving to Cloud, in other words, may never reach the often-exaggerated expectations that some businesses have developed. Yet benefits there will be: but these will be due to the new business opportunities that come from a Cloud native approach to collaboration, speed of development and agility in responding to market needs.

HOW DO WE MAKE IT HAPPEN?

Most organizations have already carried out this analysis and made the calculations for themselves. They know there is really no option for them except to make the move as fast as they can, consistent with keeping risks and disruption to existing business as low as possible.

That, of course, is where it all becomes complicated. It is also where expert support can prove vital, as shown in figure 2 below.

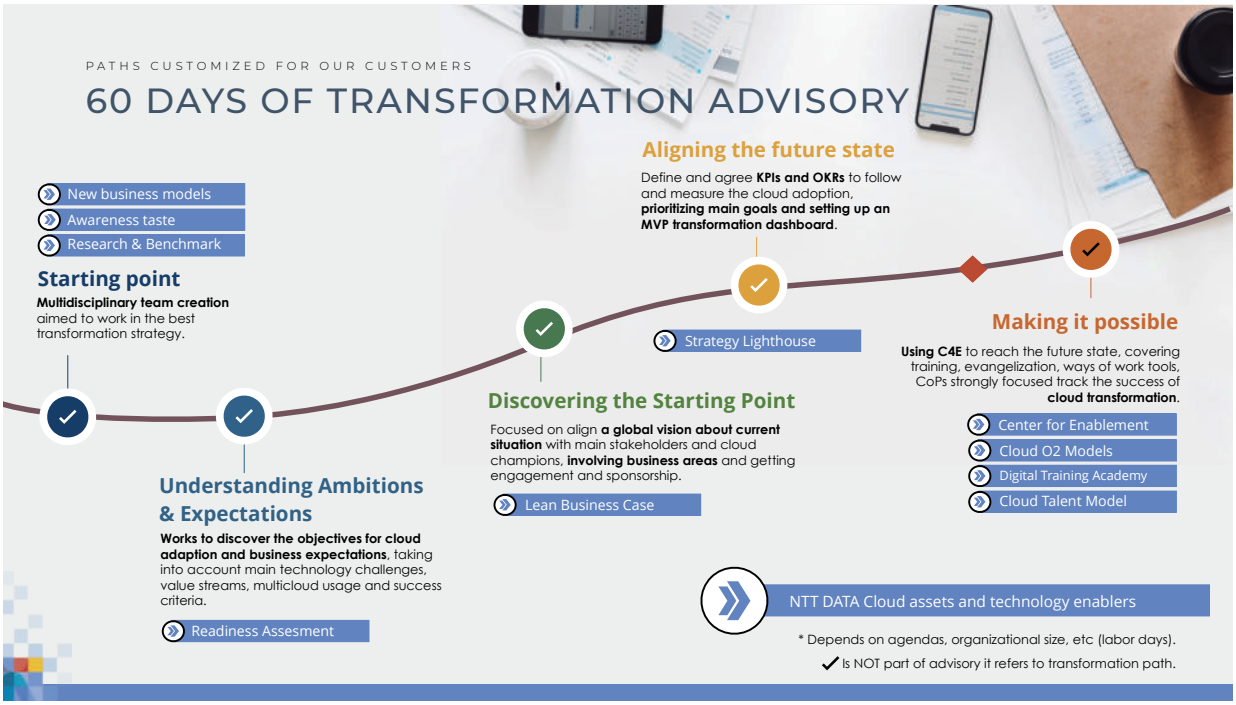


Figure 2: collaborative working at speed to identify priorities, as-is status and plan clear, agreed strategies for migration to Cloud.

The NTT DATA Cloud Advisory service begins with an intense 60 day project to build a robust, practically achievable plan.

01. First, you need to have a very clear sense of where your organization stands today. Where are your current investments? What change activities are already in flight? What is your long-term vision and business strategy?

02. Second, you need to be realistic about motivations and expectations. That is especially important when it comes to realizing your targeted cost savings. Businesses move to Cloud for different reasons, after all: for cost savings, flexibility, operational efficiency, easier entry to new markets… Yet we can probably agree that, whatever other motivations they have, they all expect to save money from the change.

This is not always so easy to achieve. For IT infrastructure, you only make the savings when you complete the journey to Cloud. That is when you can retire your legacy infrastructure, stop paying for it and terminate your dependence on investment capital tied up in obsolescent hardware and costly, license-dependent applications.
Before we start to enjoy the prospect of making these savings, however, we need to consider what we really mean by legacy.

Businesses need to move complete technology stacks, including hardware, business applications, operating systems, networking, security management and all related software required to manage the environment. Some parts of this stack cannot be easily moved or properly run from Cloud. Parts of it need to be replaced, closed or re-engineered to a very high degree.

This helps to explain why it is hard to start realizing cost savings during the migration to Cloud. Where these integrated environments are concerned, in fact, costs are likely to be higher throughout migration, as businesses still need to maintain their legacy systems as they start to invest in their Target Operating Models. Worse, they also need to pay for solutions that enable interoperability between the As-Is and To-Be environments while migration is taking place.

THE NEED FOR A ROADMAP

The priority for every large organization is not simply to accelerate their move to Cloud, without taking unnecessary risks, but also to find ways to identify and monetize quick wins along the way.

The ideal solution is to start using Cloud native applications and services to generate additional revenues that help to pay for the costs of migration, while positioning for stronger long-term growth post migration. So how can we help to make this a reality? At least one part of this answer is to develop a comprehensive blueprint for change.

To do this, it's essential to recognize just how many variables and success factors need to be taken into account, as highlighted in the NTT DATA advisory map, shown at a top level in figure 3 below.

Figure 3: identifying the success factors, and support mechanisms, that need to be explored and factored into Cloud planning from the start.

Key components of an effective roadmap include:

Clear analysis of where you start, enabling you to define priorities and establish the migration steps that will take you from your current to your future status.

Develop clear targets for commercial relationships with the lead Cloud provider. This will involve analyzing potential discounts for services, consumption agreements and methods for reducing latency by defining locations for hosting of specific IT components.

Formalize potential targets for monetization, together with dependencies, measurements and actions.

Analyze, in as much depth as you can, the ways in which your people management, employment and working practices need to change, be challenged, rethought and restructured.

Identify risks in as much depth as you can at this stage. Begin planning mitigation activities, which will need to develop and evolve as you move forward.

Build a specific “benefits capture” plan, in which you work continuously to identify and realize all available benefits as early as possible. These could range from early decommissioning of some infrastructure components to opening new lines of business to entering new market segments faster to changing the profile of who you employ. That might mean doing more with external collaborative partners and less in house, and it might also mean radically rethinking the profile of employees and their capabilities.

The people dimension to change is often under-rated, which is why so many large programs turn out to be failures (and studies carried out by companies as diverse as IBM and McKinsey suggest that 70% of all corporate change activities are eventually judged to have “failed”). We all need to remember that:

Migrating to Cloud is a Change program

In fact, this may be the largest and most complex change activity that any business ever carries out. Having said that, Cloud migration differs in some important ways from a large-scale movement of corporate IT from one platform to another: and that includes from conventional on-premise platforms to hybrid virtual datacenters (which obviously includes Cloud hosting). The key difference is that here we are deliberately moving from a stable, if in many ways unsatisfactory in-house environment to a constantly evolving and highly dynamic external environment. You cannot assume that all your core processes will stay more or less that same. Neither will your corporate functions, levels of employment, go to market activities or partner relationships.

In the Cloud, new options become possible and old options become inappropriate. The Roadmap to Cloud therefore comes with corporate transformation as standard. Many core change characteristics remain appropriate, and these are shown below, but the context is different.

You start moving to Cloud on the assumption that you will seek to become a Cloud native business. In simple terms that means fewer large functions in-house, fewer but normally more adaptable and capable employees, a wider ecosystem of partners, more creative thinking about the future and much more agile development, testing and production.

This also implies developing a more flexible approach to change, the ability to place continuous improvement programs at the heart of everything you do, and to accept the reality of constant, evolutionary change as a future way of life. As for the elements that we can think of as “classic” change requirements, these will include:

Highly visible, top-level sponsorship. This has to be not just authorized but strongly driven from the very top.

Adaptive attitudes and mindset, ensuring that the whole business is more capable of making change a normal way of life for every part of the organization.

Mobilization, education and communication are key. You cannot deliver effective change through a "command and control" approach. It's a collective effort or a certain failure.

Business change requires cross business, multi-disciplinary working, based on Agile techniques. This means setting achievable short to medium term goals, delivering them, measuring what went well and what needs to be improved, learn lessons and move on.

In figure 4 below, we show at a very high level the ways in which the key success factors shown in figure 3 can be brought together and integrated into a comprehensive migration plan.

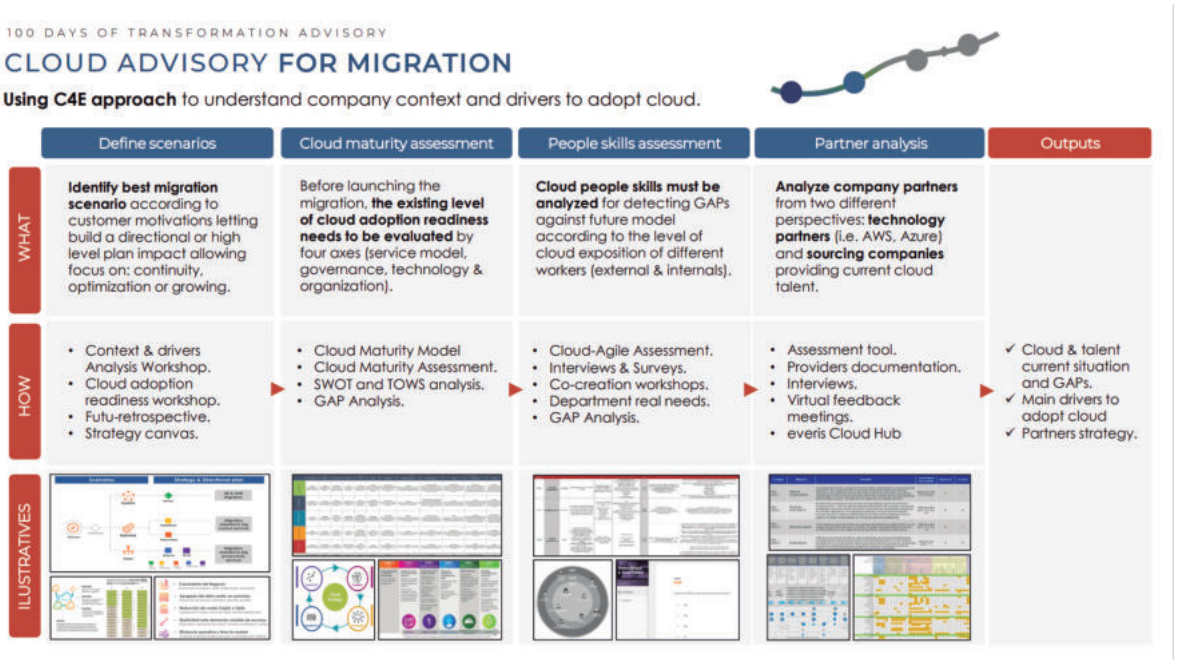


Figure 4: the drivers for change and rapid adoption of new methods and behaviors that Cloud both requires and enables.

Your day one Blueprint will need to be critically examined week by week as you move forward. As Cloud opportunities emerge, they need to be monetized, measured, captured and banked. Constant change has to become a way of life.
Finally, though we in NTT DATA are first and foremost a technology company, we know that change is a human activity and that only people can make this work.

They have no incentive to do so unless you make it very clear how they will personally benefit. A key reason for why change programs fail is not paying enough attention to the people involved. We will help you get this side of your move to Cloud right.
Our promise as your partner in building a Roadmap and executing change is simple:

NTT DATA will… deploy all of our knowledge, expertise and capabilities, from management consulting to technology design and engineering-led execution to help make this process of change as painless as possible.

RETHINKING YOUR ORGANIZATION

So now you are making the move to Cloud your top strategic priority. That's a good decision. So how can we help?

Making some tough choices

We will no doubt say this many times during our working relationship, but moving to the cloud is not just a technology journey. Whatever the nature of your business, whatever the sector and geographies you occupy, the reality is that Cloud changes pretty much everything. Here are some key examples:

Management style

One of the themes we want to underline throughout this guide is the need to think differently at the highest level in the organization. That starts with senior management and has to go all the way down to the grass roots.
A complete change in mindset and attitudes is needed as a basic requirement for making Cloud transition a success.

- While senior management has to own strategy as much as ever, command and control, centralized management is not as effective in a Cloud-based enterprise.
- The scope of the business is likely to be smaller, so there will not be armies of employees to deploy. Instead, you need to get better at ecosystem working, and here mobilization, negotiations and persuasion are more important than giving orders.
- A continuous improvement mentality must be fostered across the organization, helping the entire business to become more fluid, evolutionary and adaptive.
- In addition, you need to consider that Cloud native talents are in short supply: everyone wants them. The fact is, however, that exciting new start-ups and "unicorns" now offer what may be a more congenial environment for ultra-creative people.

Becoming Cloud native is a big challenge to any established organization, which is exactly why they are often made to look slow by true Cloud native companies. Management needs to set the right example when it comes to thinking and acting differently.

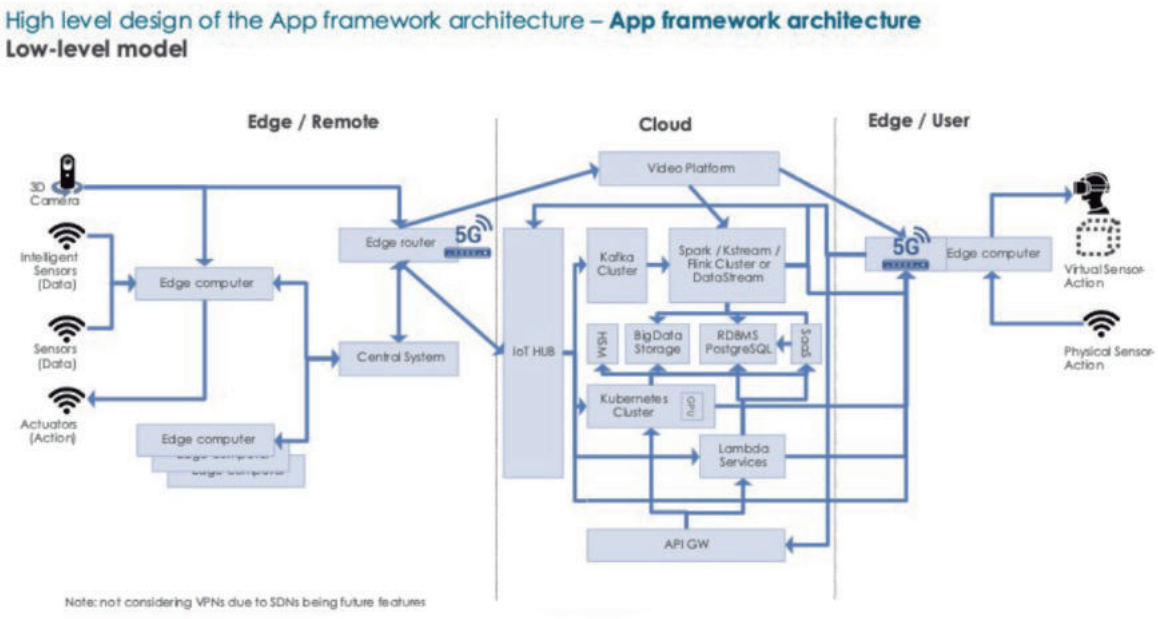
Scope of the organization

You need to make fundamental decisions here, including:

- What functions stay in-house and which can be devolved to the Cloud or to specialist partners? Is it necessary to have a dedicated IT function anymore? If so, what capabilities and skills should it contain? Probably, for example, fewer project personnel and more planners, designers and strategists.
- What people do you need to employ in the future? How many of your existing staff can be thought of as digital natives? How do you need to change in order to attract creative, forward-thinking, "born on the web" personnel? Do you need to rethink your employment regime in order to appear more attractive as a place to work?
- What about ecosystems? Can you make use of the Cloud as a forum for identifying creative start-ups, with something new and inventive to offer? How secure is it to make such organizations a core part of your strategy?

Behind these top-level decisions are a large number of operational actions, some of which will be difficult and disruptive. They need to be faced.
Figure 5, below, helps to explain why fresh and innovative thinking is needed in organization, operations and customer relationships. This shows our view of what we think of as Next Generation Networked Cloud, in which the central Cloud “core” is surrounded connections to Supplier Edge and Customer Edge.

Enabled by low-latency connectivity, and added to by advanced interface technology, this opens up new possibilities for agile ecosystem working, for hybrid offers and for dynamic, creative go to market activities.



Customer relationships

One key reason for moving to Cloud is to be more competitive in the market. The sooner you start thinking about how customer contact, channels and wider relationships can be developed in the Cloud, the better.

- How much do you need to rethink your services and products? Can you take advantage of technology convergence and more flexible ecosystem collaboration to add new dimensions to core offers? Or incorporate some of your services into other companies' go to market propositions?

- What Commercial Off The Shelf (COTS) propositions already exist in the Cloud, which you can adopt fast to speed migration and open new channels to market? Note that NTT DATA's Syntphony portfolio is a good example of service offers and platforms that can be adopted on a SaaS basis to develop new, profit-making services long before migration is complete.

- How close can you move to secure self-service, to reduce cost and enhance speed and responsiveness in the sales channels? Can this kind of approach help move into new segments and add value to your existing portfolios fast?

Let's remember, one of your most urgent goals is to identify actions that use Cloud-based or enabled capabilities to make money in new areas as fast as possible. That's how you can use growth to help pay for change. The sales channel is the top priority in this respect.

Interaction with technology

There are so many ways in which moving to the Cloud will open up new technology-driven opportunities. How quickly can you understand, target and make use of them?

- We have already talked about convergence of certain technologies as the enabler of new services and operational methods, and most businesses have their own list of priority targets already.

- We believe that low latency connectivity (enabled by 5G) will lead to an explosion in use cases for Extended Reality interfaces, and that will affect how businesses manage operations in sectors that range from automotive to logistics to discrete manufacturing and beyond.

- Use of DevSecOps and Digital Twins will transform the develop, test, move into production cycle, making it fundamentally more agile.

Automation

This follows on from the previous point as a natural consequence of adopting Networked Cloud technology.

- The distributed nature of corporate resources (which may be more widely separated in geographical terms) means that automated decision-making will become more important.
- Edge devices and enhanced connectivity through intelligent networks will challenge current decision-making paradigms and will certainly drive adoption of AI and smart algorithms faster than ever.
- We must accept that automation at every level in business processes will become fundamentally more important. This is not simply about accelerating core processes, it is also a management challenge, as hyperautomation starts to replace aspects of management decision-making.

Supply chains

These will also be significantly changed by Cloud adoption, with potentially radical changes to procurement and logistics management.

- Blockchain is likely to be a key factor in developing, evolving and managing procurement networks and in providing auditable data to confirm the pedigree of goods and components shipped.
- Once again, we will see high levels of automation in management of supply chains, while there are also likely to be further examples of convergence in key markets, with supply chains that are currently distinct and separate coming together to provide integrated solutions.

It's not that everything changes when you move to Cloud, but change becomes possible on a larger scale than before, if you are ambitious enough to identify and exploit the opportunities. Once again, this requires a change in attitudes, mindset and management practices in order to gain maximum benefit from Cloud.

Collaboration

Finally, let's go remember that the Cloud is primarily an environment which delivers maximum benefit to all those participating companies able to collaborate effectively. That means using shared resources in the most secure and efficient way, focusing on goals and core principles, while being agnostic about technologies, systems and methods.

Agility, continuous evolution, increased levels of automation and unprecedented speed are hallmarks of Cloud working. Every technology component is in a continuous state of evolutionary change. This needs to be clearly understood by everyone. We are highly experienced in designing and implementing cloud-based architectures, frameworks, platforms and solutions, but we cannot make the journey to the cloud happen for you.

In our experience it is essential to establish strong, trust-based collaborative relationships at every level and between every participant. That means within your own teams, across your wider ecosystem of long-term partners, and with the specialists that you select to help you migrate. You need to think beyond technology and understand that the more you consult, the better you collaborate, the more effective the process of change will be.

To make change work, therefore, NTT DATA can and will help you to develop effective, proven collaboration frameworks, and ensure that you have a creative, secure virtual work environment in which your own people and your ecosystem partners can work as productively as possible. In our experience, that is a basic requirement for long-term success.

NTT DATA will… use our global consulting know-how, backed by our pragmatic, engineering-led knowledge of how to execute complex projects, to work with you in designing the roadmap that makes most sense to you, ensuring that you can meet your goals as efficiently as possible.

MANAGING THE RISKS

As a business you will be entering unknown territory in many ways, and that brings new kinds of risk. We have mentioned some of these already, others are not as obvious and need to be investigated further. Before going too far along your journey to Cloud, we suggest you explore the implications of change in all these areas.

Business continuity

This remains the non-negotiable basic requirement for risk management. All through a period of what may well be unprecedented change, it is essential to keep the main functions of the business operating smoothly, efficiently and without interruption.

This is a well understood task, at least when dealing with a relatively stable IT environment, but for technology stacks in the process of change, the matter becomes more challenging. We assume that all of the normal migration requirements (failover, failback, dual running until the new system is proven in action) will remain as part of the toolkit to be deployed.

Yet there will also need to be additional measures, which must be constantly updated as the transition process evolves. At the start, we pointed out that businesses in the process of migration to Cloud will have to keep both legacy and future environments fully operational through transition.

The business continuity plan will also have to be constantly updated, day by day, to ensure that components are backed up to the most appropriate locations, and that systems stay operational without interruption, even if there are difficulties with one stage in the process. This adds additional complexity to the entire change activity.

Technology

Migration to Cloud means moving to a new technology landscape. That means existing frameworks, systems and (in some cases) applications will close and be replaced. In some cases, this is when you will discover if your existing assumptions as to what your systems actually do are correct. You may find there are unexpected consequences when you start to close legacy applications and servers.

Some of the surprises may not be pleasant. In very complex landscapes (those operated by major banks, for example) systems may have been operating for decades and there may be no-one left on staff who actually knows how they work.
Moving applications, in particular, is a real top priority, not least because this is where cost savings can most easily be realized through the move away from the licensing model and from simplification of the portfolio.

We will help you reduce the risk by detailed exploration, mapping and analysis, feeding these insights into the planning process and updating the roadmap as we do so.

Go to market

One of the most exciting aspects of Cloud is the way it enables faster development of new offers, creative opportunities through collaborative working and convergence, and accelerated time to market (including entry to new markets). These, as already discussed, are positive aspects of Cloud, but there are risks included in this different way of working.

Cloud opens easier access to global markets, but these may apply widely differing legal regimes, which you have to understand.

Cloud enables development of more targeted products and services, but that puts pressure on logistics and value chains. Have you quantified these issues? Agile ecosystem development with partners, using DevSecOps and other techniques will accelerate every aspect of product / service working. This raises potential risks related to security, quality management and consistency. How are these being managed?

People

We have covered this topic as part of the challenge to management practices and attitudes, but it is such an important issue that we really cannot emphasize it too strongly. There is a tendency for management teams to view moving to Cloud as, among other things, a way to reduce headcount to help deliver targeted cost savings. This is a risky approach.

Yes, it is true that Cloud-based businesses are likely to employ fewer people directly, but that's because they have developed organically to become more collaborative, ecosystem focused businesses, using the Cloud as a rich source of specialist capabilities. You still need to attract digital natives to work within your own business, however, and that means you need to be an attractive place to work.
Figure 6 below shows at a top level our view of the "new deal" you need to develop in order to be a good place for digital talent to develop and work.

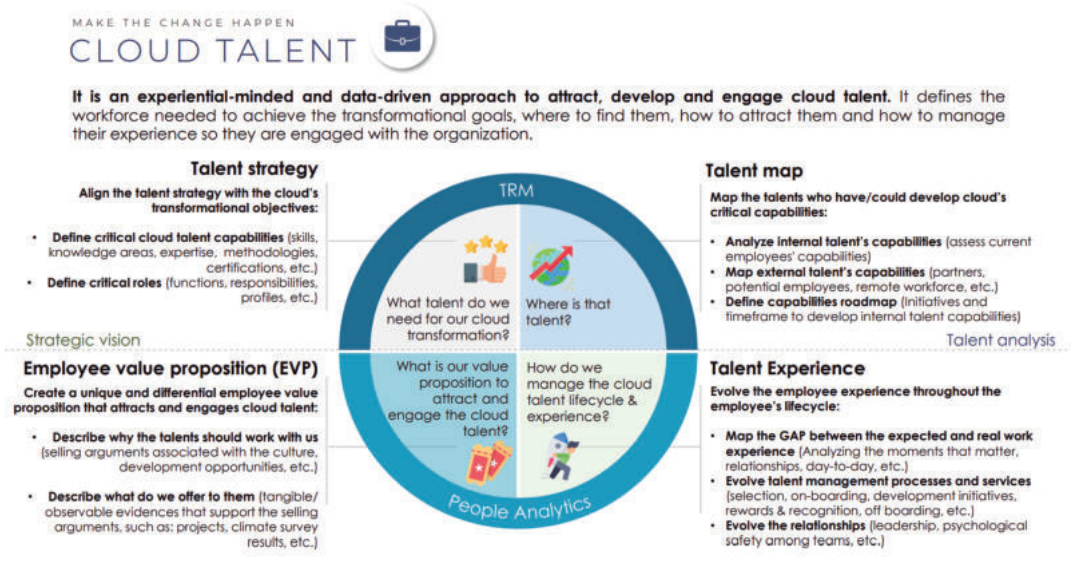


Figure 6: the 4 essential steps to leadership in digital talent: a clear strategy; realistic mapping and targeting; building a strong value proposition for people; providing an excellent experience

The same point can be made of ecosystem working. The opportunities for partnering with creative businesses are huge, but there is a risk that they may not see your proposition as especially useful to them. Old fashioned attitudes in this new kind of environment do not go together. Failure to change mindset is the biggest risk of all.

Security

This subject is perhaps the single most important priority for businesses moving to the Cloud. That's because security in the Cloud is not the same as security for on-premise datacenters. As the concept of Next Generation Networked Cloud evolves, the differences will become even more marked.

In the Cloud (and this term is in itself not easy to define, as we shall see), security is shared between yourselves, probably one or more hyperscalers, specialist suppliers and ecosystem partners. Data and applications, or parts of applications, may be stored in containers, dockers and Kubernetes, and some of the pieces of . code under development may become difficult to track.
Each of these represents a potential way into your own systems.

Cloud security is a large subject in its own right, and we have developed a white paper on the subject for review. Figure 7 below focuses on just one of the transformational factors in Cloud operations, which transforms agile development through DevOps into ecosystem collaborative joint development- a change that requires new security protocols and methods: DevSecOps.

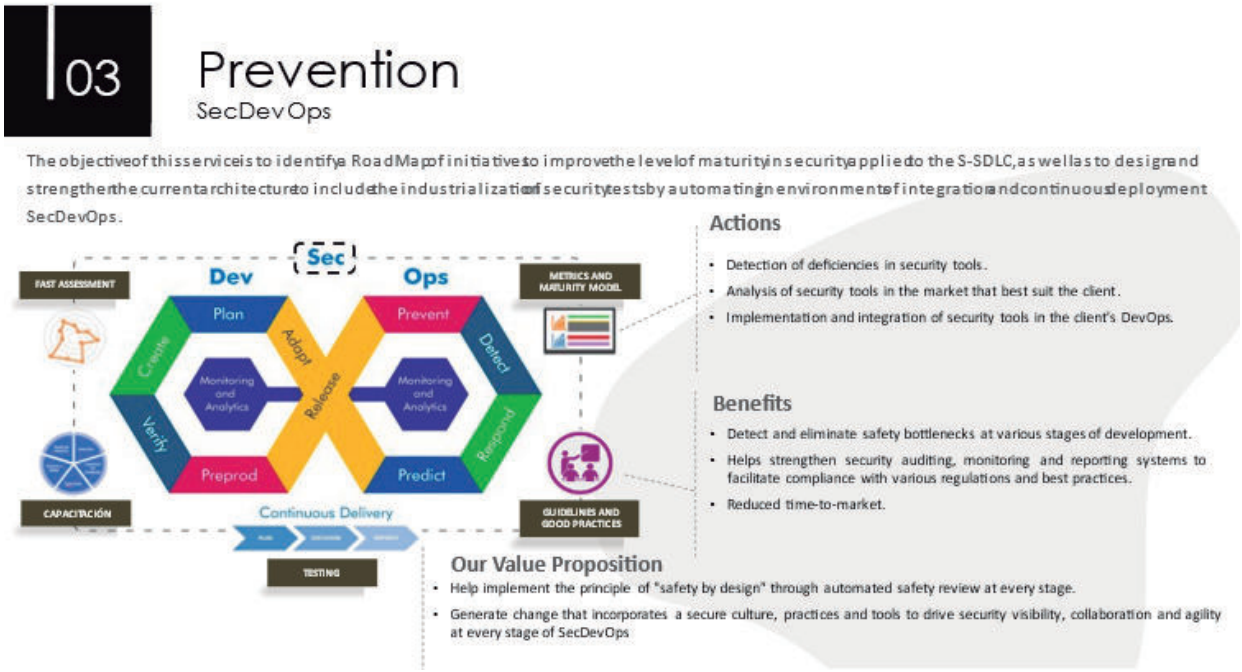


Figure 7: how NTT DATA establishes an effective method for collaborative development in the Cloud. Other methodologies exist for Cloud-specific security options.

Businesses of many kinds are using commercial SaaS applications and platforms, accessed via open APIs, to enable faster collaboration with partners and end user customers. Weaknesses in any one of those APIs, or any one of those shared applications, can give access to your systems, as well. And all the time, you face increasingly sophisticated and determined criminal activity in a very complex landscape with numerous entry points. Your security policies are life or death or your business, so they need to be updated and enhanced month by month or more frequently.

To be clear, hyperscale public cloud is normally more secure than most in-premise datacenters. It is very unlikely that AWS or Azure will represent points of security weakness. In complex ecosystems, however, you are only as strong as your weakest link. Security needs to be a dedicated workstream and you should start work on this right now.

Compliance

Regulatory regimes are constantly evolving and will certainly continue to do so. In Cloud, however, you must remember that it is essential to know that you comply with (for example) data sovereignty and privacy legislations for every jurisdiction where you operate- and be able to prove it, too. Compliance may become more complex and, in the world of more agile ecosystem working, it will certainly involve a greater range of different organizations and that may lead to more careful supervision and auditing of how and where data is processed and stored, together with the effectiveness of management regimes.

Environment

We are finally waking up to the fact that Cloud may not be as Green as we hoped. Datacenters supporting Cloud environments are believed to use as much energy each year as the whole of Spain, including traffic emissions, domestic and industrial usage and air travel- and this figure is growing. When we add the news forms of transaction and system that only cloud can support (Blockchain and Crypto, for example), the picture becomes much worse.

Sustainable businesses have to be green (by definition). You need to start tracking energy commitments caused by your cloud journey at once and account for your emissions and energy usage meticulously. There is a grave reputational risk to being unaware or unready to report on and ameliorate your commitments. It's also the opposite of being sustainable.

Risk management is a key factor in developing effective Cloud strategies, and our goal is to help your business manage and mitigate the risks inherent in moving to a more sustainable model as effectively as possible.

Every major change involves risk: this is the heart of doing business, after all. Moving to Cloud is not riskier than any other major change process, but it is complex, as it involves managing change across several different dimensions.

It also means moving from a long-established, familiar operational status to an environment and landscape which may be very unfamiliar. New capabilities and skills need to be developed, and the faster you can do this, the better you will manage risk.

The need for change to more sustainable models is urgent, as Figure 8 below will demonstrate. This shows the context in which all businesses in all sector now operate, with time running short to manage a transformational set of changes.

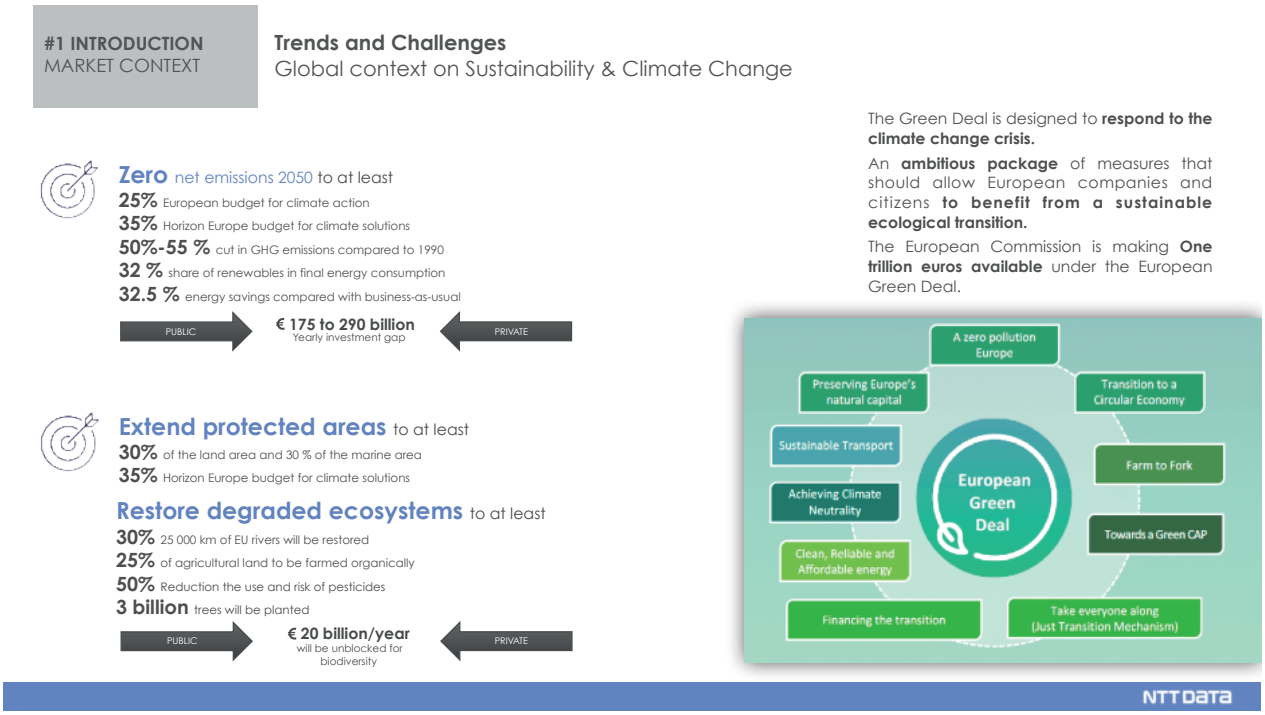


Figure 8: some reasons why sustainability is top of business leader agenda

NTT DATA will… work closely with your own decision-makers and operational leads to identify your risk appetite, ensure you are fully informed about the potential downsides of every decision, and to build a roll-out plan that manages, reduces and, where possible, eliminates risk.

THE TRANSFORMATION CHALLENGE

Moving to Cloud is significantly different in scale and cope, compared with migration from one traditional corporate platform to another. For a start, this is both a Technology and Organizational challenge.

Technology Transformation

The Cloud concept is not standing still: it is constantly evolving. NTT DATA is a leader in the drive to combine the traditional compute and applications hosting aspects of Cloud with low-latency connectivity, enabled by 5G and other techniques, to create a form of intelligent, programmable network with the potential to transcend hyperscale cloud as it operates today.

This approach will make it easier to disaggregate and geographically distribute capabilities and teams, while using new technologies, such as XR, to enable interactive presence in shared virtual environments. This will make it easier to control complex systems in real-time from extremely distant locations and will further accelerate geographical distribution and logical disaggregation of all Cloud components.

When we speak about “landing zones” for future Cloud, we need to understand this topic is now becoming more difficult, as the potential for truly networked, intelligent Cloud comes closer. The process to be followed for technology transformation, however, is still logical, pragmatic and executed in stages, as set out below:and geographies you occupy, the reality is that Cloud changes pretty much everything. Here are some key examples:

Architecture

An evolutionary process designed to move core processes, stage by stage, away from on-premise, mainframe and multiple server farms to a virtual environment.

- Defining priorities, measurement, roll-back where necessary…
- Establishing monitoring and management systems to enable dashboard and role-based oversight at all times.
- Introduction of low-code methods, with rules-based systems for rapid service introduction.
- Ability to manage assets in multiple cloud locations, and provided (as required) by several different providers…
- Ending with a single environment built from assets and capabilities drawn from many areas.

Applications

A continuous process that moves core applications to a virtual environment, where it makes sense to do so.

- Initial analysis will reveal legacy applications that cannot be moved, and that have to be closed, replaced or left in operation for a limited time as it is too disruptive to close them early in the process.
- We will then identify applications that are technically able to move to Cloud via “lift and shift”.
- Others will either need to be substantially rebuilt or replaced, by progressive stages.
- Once the applications move to the Cloud is complete, the landscape should be simpler and will also enable…
- Easier rules-based development, by mixing and matching components…
- Eventually reaching the point where applications are all cloud native, requiring minimum IT intervention and with the ability to evolve naturally with market demand.

Migration

This is a major transformation activity, and the goal must always be to prevent it from dominating and interfering with business life.

- Migration planning is designed to develop and test in a rapid, circular fashion, using scenario testing and digital twin techniques to ensure that major issues are spotted and engineered out before anything goes live.
- Implementation is always conservative, with rapid roll-back to status quo ante at any sign of difficulty.
- Operational business imperatives are the key to the entire migration, which is managed, not as a "big-bang" but as a stage by stage develop-test-review-refine-test again-implement approach.

Many issues encountered by enterprises as they move to the Cloud are not really due to the nature of the Target Operating Model (TOM) but through over-optimistic timescales or failures in migration process design. That is the kind of trap we pride ourselves on helping our clients to avoid.

NTT DATA will… deploy all of our engineering skills to ensure that each stage of your journey to Cloud is managed with attention to detail, practical common sense and operational excellence.

ORGANIZATIONAL TRANSFORMATION

The journey to Cloud is a large-scale corporate change activity, and must be treated as such. Organizations need to remove legacy debt and redefine/reinvent themselves as truly digital native businesses in order to maximize the benefits of Cloud.
This is not just about cost saving or headcount reduction, and is not even mainly about scalability and speed (important though these are). It's about thinking, acting, planning and evolving in a quite different manner.

Digital native characteristics

It is important to understand how and why Cloud-based businesses need to organize, think and act differently, compared with more conventional businesses. As you migrate to Cloud, with the ultimate goal of becoming (at least) more Cloud native yourselves, you need to be aware of these differences.

Digital native structures, for example, are likely to have flatter structures, with fewer levels in the hierarchy. They require leadership from senior management which is both committed (we would expect no less) but also more visible and relatable.

We will expect to see higher levels of flexible, ecosystem working, and that requires, not just strong and flexible working methods but also high levels of empowerment and motivation from skilled, responsible, trusted personnel. After all, digital native businesses need to be staffed by digital native people, which means staff members with T shaped profiles and multiple skills.

And one other factor, as well: at all levels and in every way there has to be an uncompromising focus on security.

Organizational developments

A cloud-enabled, cloud native organization will be different in a number of very important ways, when compared with more orthodox corporate structures. We will see higher levels of automation, and this will include some forms of automated decision-making. The highly flexible and agile use of ecosystems, enabled by Cloud, suggests there will be higher levels of empowerment across the business, with multi-disciplinary teams using rules-based and low code methods to develop and evolve new services and enhance customer/partner interactions.

This suggests a number of interesting implications.

For example, there is no point in developing a very agile infrastructure unless you empower people and teams to make best use of it. There is also no point in automating many processes and decisions if you still expect your people to spend much of their time doing routine management tasks. And finally, there is no point in enabling highly flexible working unless you have an ecosystem that makes best use of this new freedom.

Figure 9 below summarizes the ways in which NTT DATA implements a comprehensive set of interoperable activities to define the best Cloud roadmap for your business.

NTT DATA will… apply our consulting skills to establish your best possible future direction and structure, and will then help leaders, employees and partners to collaborate in developing your organization.

Figure 9: how the different components of the Cloud adoption strategy fit together, driven by a specialist Project Management Office for Cloud, which we call the Cloud Center for Enablement (C4E).

OPERATIONAL TRANSFORMATION

Changing the technology environment and rethinking your organization creates the environment in which you can start to enhance and evolve every part of your operations.

Speed and automation

True digital native businesses, organizations that have learned not only to live with Cloud but to be completely at home within the Cloud, will move faster and be more agile than in the past. A key factor in this positive change will be the ability to use automation in more ways and at many different levels in the organization. This will enable the business to use the full potential of Cloud to the full, and will also lead to:

Improved ecosystem working

This is likely to be a natural aspect of successful Cloud operations, with more flexible access to and interaction with external capabilities helping to deliver lower cost, higher speed and greater agility in many if not all aspects of business operations. This, in turn, helps the business to do better in:

Maximizing Cloud opportunities

Cloud provides a virtual environment, in which geographical location is almost irrelevant, while all components in every system are disaggregated to permit extreme flexibility and speed in developing new concepts.

These characteristics should be the source of great competitive advantage to organizations that succeed in transforming themselves effectively enough.

It leads to faster time to market, more rapid entry to new markets and the ability to respond faster to market signals. That's why moving to cloud is about the entire business, including strategy, culture and leadership, and not just technology.

Transforming Technology, Organization and Operations are the three components that lead to end-to-end business change. That is the ultimate goal of the move to Cloud.

NTT DATA will… partner with you from start to finish, delivering solutions that integrate across technology, operational and organizational changes to deliver targeted, measurable business change, enabling you to ensure a smooth, profitable journey to Cloud.

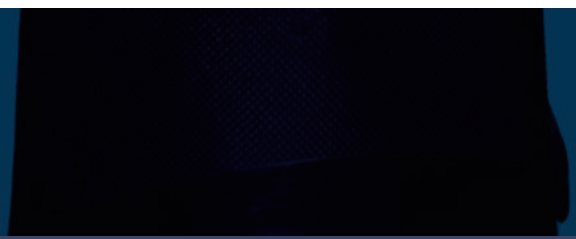
TO SUMMARIZE...

This document is certainly not a definitive guide to **"Cloud, what it means for you and how to do it..."**

Every organization will start from a different place and follow a different path. Each journey to Cloud will therefore be unique, as it must be. There are aspects of Cloud that can be destabilizing. Cloud is not an end point: it's a very dynamic environment, subject to continuous and often highly unpredictable evolutionary change.

Each new participant changes the dynamics simply by being there. Change is a way of life in the Cloud and you need to embrace and profit from it. We have no doubt that, in reality, most individuals prefer stability and are not that happy to be told they need to face the certainty of constant change.

That's why success in the Cloud is a mental, even a psychological process as well as technological and organizational. You need to understand the different stages of the journey, set your expectations to a realistic level and be very prepared for the challenges you will need to face.

NTT DATA is one of the technology leaders that is defining and redefining the scope of and potential of Cloud. Our expertise in IT, engineering and telecommunications gives us a privileged position as a leader in Cloud evolution. Partnering with us will give you access to original IP, broad and deep knowledge of all the core technologies involved in current and future Cloud, together with rich consulting skills to help you face the business and human challenges successfully.

Building a practical roadmap, with clear measurements and check points, is the necessary first step along the road. We will help you face this greatest of Change projects successfully.