



WHITEPAPER



APPROACHING THE CLOUD | A STRATEGY FOR HIGHER EDUCATION IT MANAGERS

Often something has to happen before
something happens



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“For digital enterprises, IT forms the basis, which roughly translates as that you have to become a software company.”



HEY IT MANAGER,

You know it, we know it, even your retiring professors know it.

It's time to break up with your on-prem servers.

In this whitepaper, we provide you with independent advice on how to set up your cloud strategy for an educational institution. We explain how to determine your drivers, map applications, adjust your management model and gain insight into current and future IT costs. You then pour that information into a roadmap that allows you to migrate to the cloud in a sensible way, at the lowest possible cost and with as little hassle as possible, because we know you're already busy enough.

Enjoy and good luck!



THE THRESHOLDS ON THE ROAD TO THE DIGITAL ENTERPRISE

As a modern IT manager in higher education you have quite a lot on your plate. On the one hand, you have to ensure that the IT department runs smoothly. Application management, data management, security and system integration: it all happens in your department.

At the same time, you are expected to think about ways to turn your educational institution into a digital organisation. You must think of the digital campus, in which the student is central through flexible, personal education and think of Lifelong Learning, The concept in which higher education binds people to the institution even after their classical student days with learning programs that match their interests and stage of life.

The good news is that the application of digital education is getting wider and wider. For example, think of:

- A digital learning environment that makes remote testing possible safely.
- A virtual research environment where enormous computing power, AI and deep learning functionality are all easily accessible and yet controlled, is available to researchers.
- A modern student information system (SIS), the beating heart of the digital campus.
- The possibility of flexible scheduling, which allows students to study at times that suit their agenda.
- The use of IoT and digital twins to optimally condition and use the scarce space in the institution.
- The use of edu badges, which reward students for achieving their goals.

By developing these applications based on cloud technology, great benefits arise. It is becoming faster and cheaper to deploy new, sometimes groundbreaking, functionalities, so that you can also innovate at a rapid pace and thus increase your departments value.

That all sounds great, but you know better than anyone that the road to cloud is quite a bit of work. You also get the double role of manager and innovator, without getting extra hours

Five common challenges:

1. YOUR COLLEAGUES THINK YOU ARE A CLOUD SPECIALIST

Today, IT people are involved in so many things that their level of knowledge varies per subject. For example, an IT security specialist knows everything about access control, but he is not familiar with web development. An information architect is concerned with communication flows and you do not hear about application management. In turn, as an IT manager, you are not a cloud specialist. Awkward, since the people around you probably think so. As a result, you will receive many questions and requests that do not fall within your field, but you will have to look for the answers.

2. IT IS UNCLEAR WHICH APPLICATIONS SHOULD MIGRATE TO WHICH CLOUD

Migrating applications to the cloud requires a lot of research. Because what applications are there in the current situation and by whom are they used? DLWO, administration systems, accounting packages, Big and Small data, Office packages: every application must be moved to the best possible new location. In addition, you should ask yourself with every application: does a cloud migration actually yield anything?

3. YOU ARE NOT SURE WHETHER THE CLOUD MIGRATION WILL PAY OFF

While cloud is known as a potential cost saver, a cloud migration costs money. If you start migrating applications without a well-considered plan, the question is whether this investment will pay off. For example, some legacy systems are far from suitable for migration and are more likely to generate additional costs. Also, you probably own applications that use the not worth the effort of a migration. You need all this information for a successful cloud migration.

5. YOU ALSO DON'T KNOW WHAT A CLOUD STRATEGY WILL MEAN FOR YOUR ORGANISATION

What sounds logical on paper does not always make sense in the workplace. The transformation to a digital enterprise changes many processes and working methods in the short and long term and that can cause confusion among colleagues.

They have to learn skills, and in some cases even people have to leave or new people have to be hired. Your cloud approach can also be too ambitious, causing your colleagues to be disrupted from their projects.

5. IT VENDORS PROMOTE THEIR OWN PRODUCTS

Many companies considering migrating to the cloud seek advice from one of their regular IT suppliers. The problem here is that most IT suppliers claim to provide independent advice, while only a handful actually do. Few IT suppliers look at what you really need to advise you on that basis, which means that you have to pay close attention to which solutions you get.

HERE WE GO

Alright, enough worrying. If you look at the above problems, it is striking that most cloud-ready IT managers in higher education suffer not so much from a lack of time or money, but above all from a lack of clarity and structure. We will offer you that clarity and structure in the following chapters, in which we will help you answer these five questions:

1. What are the drivers for a cloud strategy?
2. What is the impact of cloud on your application landscape?
3. What is the impact of cloud on your organisation?
4. How do you calculate current and future costs?
5. How do you plan the migration and how do you initiate it?



WHY WE DON'T TALK ABOUT "THE CLOUD" BUT ABOUT "CLOUD"

Many people talk about "the cloud". This gives the idea that cloud is a place, like the Maldives. That sounds scary, because migrating all your applications to another place gives a feeling of insecurity. But cloud is not a place; it is nothing more than a more efficient alternative for hosting your applications. Instead of using your own data center, you let your applications land in the data centers of a cloud provider, which are all standardised in the same way. Because of this size and standardisation, the quality is a lot better and you benefit from endless computing power and best practices from your cloud provider. Cloud is therefore nothing more than access to enormous computing power to supplement your shortage of IT capacity.

And that has advantages:

- You pay for use, not for possession.
- The development and testing of applications is faster because you use existing building blocks from your cloud provider.
- You reduce the interdependence of your applications, which reduces risk and ensures that you can go live faster with parts that are already ready.
- If your educational institution grows, your IT environment will easily grow with it.
- Software engineers don't have to wait as long for others because they can do more themselves.
- Collaborating with external parties becomes easier because you can make data more accessible. You can use the latest developments such as AI and Machine Learning.
- Functionalities that are difficult to reproduce in your own data center.

"The more things you arrange before the migration, the lighter you go into the cloud migration."



STEP 1

What are your motivations for a cloud migration?

Blindly migrating all applications without a strategy is not recommended. First of all, the cloud does not automatically create order in the existing chaos. Secondly, it is expensive because not all applications are suitable as a cloud variant. Think of certain legacy systems that are built from spaghetti software, so that no one knows exactly how they work. Thirdly, in the new situation you can probably disable or purchase a number of applications as a service (=SaaS). This saves time and hassle, and in many cases provides qualitative benefits. If you arrange these things before the migration, you will go into the cloud migration much lighter. In this chapter, we will therefore discuss how to determine your motives and convert them into concrete goals.

EPIC EVENTS

The conversation about deploying cloud often starts as a result of so-called “epic events” in higher education. To name a few examples:

- The contract with a (slow/old-fashioned) supplier is coming to an end and the next step and a market survey must be considered.
- A major investment is required in the data center.
- More and more researchers are asking for the use of cloud applications.
- A digital strategy has been set up, full with cloud activities.

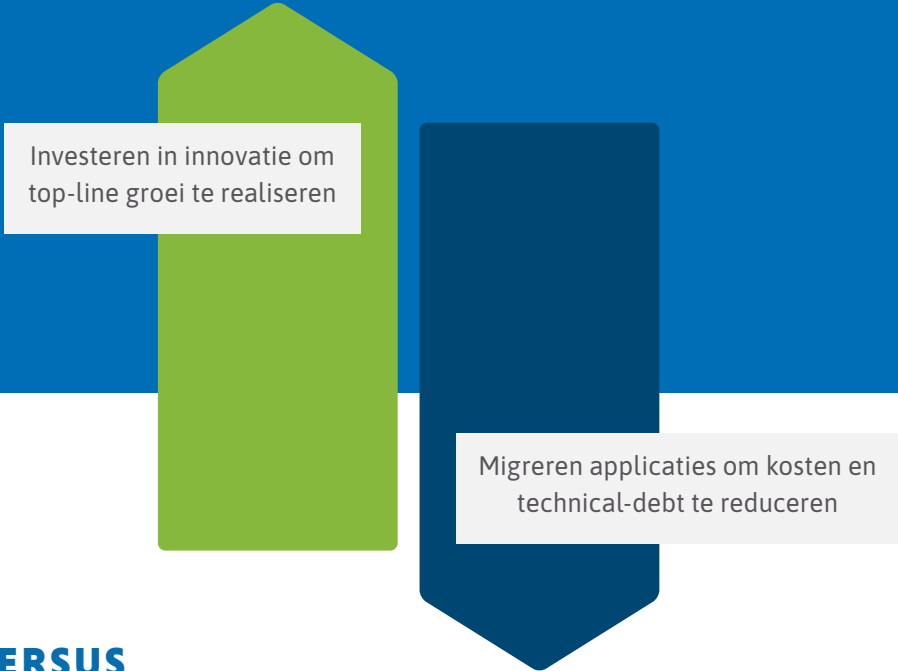
The above epic events are all triggers that make you think about a cloud migration, but they say little about how you will approach that migration. If you opt for a cloud migration because of, for example, your new digital strategy, the cloud environment will have to support this and you will make different choices than if standardisation is paramount. That is why you will have to determine in advance what the cloud migration should yield. Setting concrete goals also helps you in the conversation with higher management. The clearer the predetermined goal, the better you can explain what you are doing and why you are making certain choices.

What kind of goals can you think of? Here are some examples:

We want to deploy cloud...

- ...as a platform for innovation
- ...for a more agile organisation
- ...to tap into new markets
- ...to reduce operational risks
- ...to standardise work processes
- ...to optimise our costs.

“Is the application mission critical? Does it increase your ability to recruit researchers, teachers or students or to respond to the demand for contemporary educational offerings? These questions will help you determine the best new location.”



Investeren in innovatie om top-line groei te realiseren

Migreren applicaties om kosten en technical-debt te reduceren

TOPLINE VERSUS BOTTOM-LINE GOALS

As you can see, Goals 1, 2, and 3 focus on new opportunities. These types of goals are also known as top-line objectives because they contribute to achieving growth or increasing profits. Goals 4, 5 and 6 focus on the basics; the place where you can standardise processes, reduce risks and save costs. These goals are also called bottom-line goals, because of the savings below the line.

Chances are you have a combination of topline and bottom-line goals on your list. After all, by saving costs and time at the bottom-line level, you free up money and time that you can use for innovation at the top-line level. We also call this form of cost reduction “technical debt reduction”; you limit your technical debt by standardising and managing less on location and invest the money released in innovation (see image below). In your cloud strategy it is therefore not necessary to choose one specific goal, but to balance your main drivers. Together, these goals form the basis for all your future IT decisions and your story to higher management.



STEP 2

The impact of cloud on the application landscape

Moving on. Now that you know your goals for going to the cloud, you can get to work a little more concretely. Because which applications are you going to move, where to and in what form? You can find the answer to these questions by following three steps:

1. Map out your current application landscape.
2. Determine landing sites for your applications.
3. Cluster your applications.

1. MAP OUT YOUR CURRENT APPLICATION LANDSCAPE

First of all, you look at the applications you currently have in-house and where and how colleagues use them. This is a job, since all these applications are spread across your organisation and are used in different ways. Therefore, call in colleagues from different departments. They work with accounting packages, planning and ERP systems on a daily basis and can think along with you. Next, compile a list of your current applications. For example, how many servers do you have and of what type? Which applications are they linked to? Where are they located? And what are the monthly costs? You then bring this information together in a so-called application baseline. This is a schematic snapshot of which applications are currently being used.

2. DETERMINE LANDING SITES FOR YOUR APPLICATIONS

Now that you know what the current application landscape looks like, you can start thinking about the future application landscape, which will probably look very different. As mentioned, not every application is suitable for the cloud and you can purchase some as a SaaS product or even turn them off. In order to use each application as efficiently as possible in the future (i.e. in line with the business objectives), we advise you to find out for each application where it is best to let it “land”. Such a future location (or “landing place”) can be a public cloud, a managed private cloud or at an external party. A useful way to determine the correct landing site for each application is to ask these two simple questions:

- **Is the application mission-critical?**
Yes / No
- **Does the application contribute to the competitiveness of the educational institution?**
Yes / No

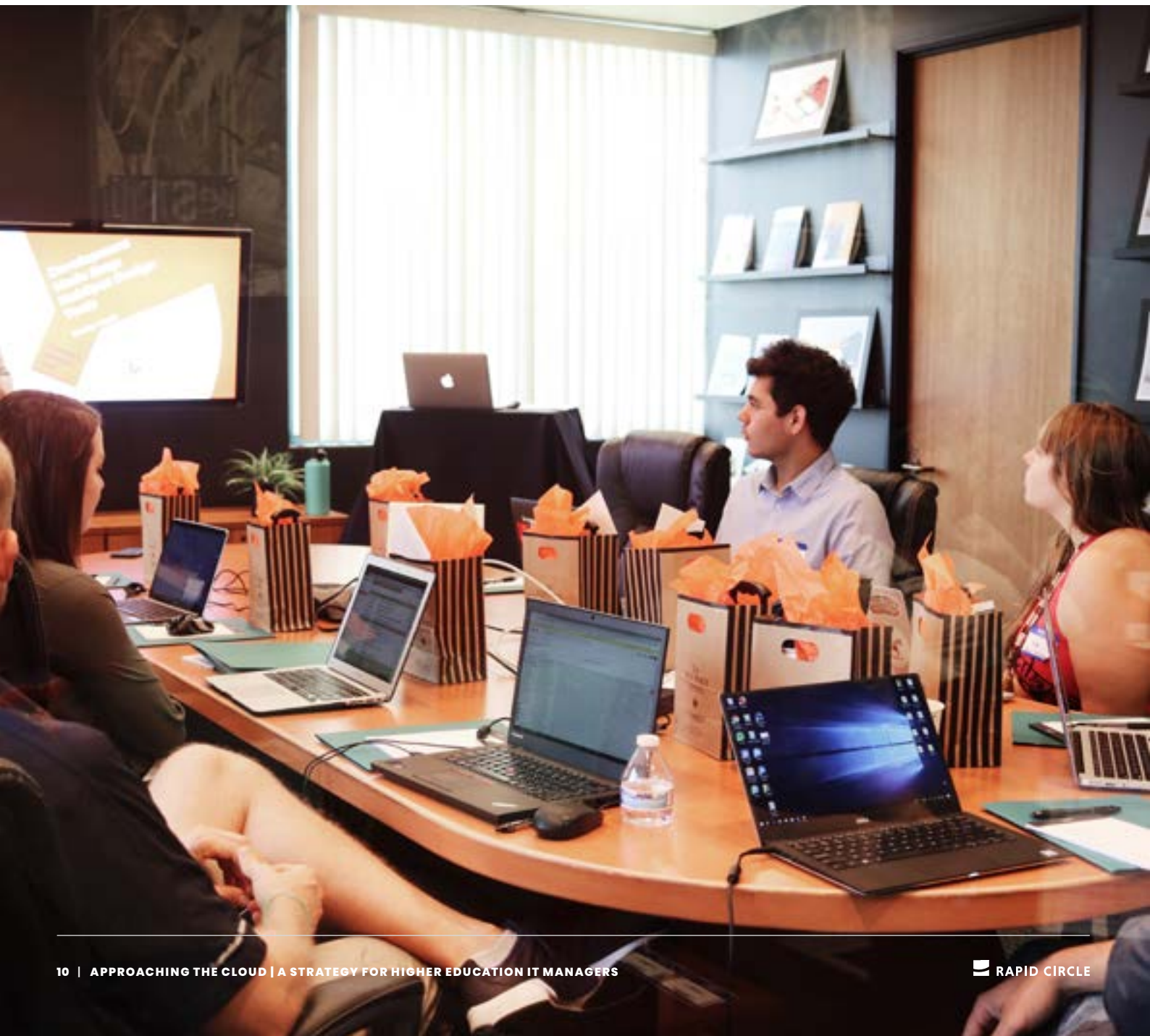
Based on your answers, you divide the application into one of the quadrants below. The quadrant in which you classify the application says everything about the right landing location.

Invent | Applications that you use to develop new products and services contribute to competitiveness of your educational institution, but are not yet mission-critical in the development phase. Think of an app that is still under development.

→ **Public cloud:** In contrast to your own data center, your software engineers have infinite computing power here and can switch off the application whenever they want. There's no need for third-party support here, as you're just experimenting.

Deploy to scale | Once applications are launched and find acceptance among users, you as an institution must be able to deploy them on a larger scale and as needed. Scalability is therefore extremely important for this group of applications.

→ **Managed public cloud:** This is still a public cloud, but with guarantees. For example, there is a Managed Services Provider (MSP) who monitors whether everything is running smoothly and can solve problems immediately. You engage such a party in addition to the cloud Service Provider (CSP) itself.





Manage scale | Applications that are mission-critical (so indispensable) but do not directly contribute to your competitiveness. You want to standardise these types of applications and make them run stable in the background. Flexibility is of less importance here compared to the 'invent applications'. Consider, for example, ERP systems.

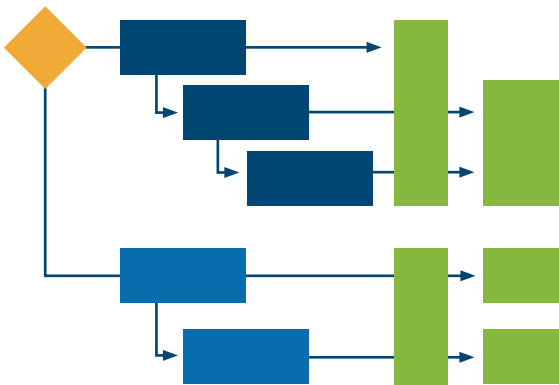
→ **Managed private cloud:** These applications are often located in a private cloud, on-premises or on the location of a more traditional hosting party. In the case of a Managed Private cloud, the hosting party manages the applications, creating a stable situation. You do not benefit from the advantages of the public cloud (infinite computing capacity, expertise of the cloud provider), but you can make connections with applications in the public cloud. This way you can manage both in the same portal.

Download | In many cases, applications that are not mission-critical and do not directly contribute to the competitiveness of your educational institution can be deployed or purchased as a SaaS product. In the latter case you will continue to use the application, but you no longer have to worry about management, storage and updates. This may also save you costs.

→ **Let's be brief about this:** purchase as a SaaS product.

The breakdown above makes it clear that the kind of application you're dealing with says a lot about the right landing spot. Combine this information with the drivers of your organisation and you know what to do for each application.

For example, if your objective is "to standardise", you can migrate to a SaaS product as much as possible. A tool to make this selection process easier is the decision tree. Such a decision tree depends on your objectives, but looks something like this:



CLUSTER YOUR APPLICATIONS

You now know which applications belong in which quadrant and what this means for their future landing location. Considering each application separately, however, causes unnecessary hassle. To create an overview, it is much more convenient to put applications that go to the same landing site in the same "bucket". For example, you create a bucket of "offload" with applications that are all purchased as a SaaS product. This makes the migration a lot clearer and easier to plan. Moreover, after clustering your applications, you can properly estimate the extent to which you will use the various landing sites. You will find more about this in the next chapter.

RECAP

Let's take a look at the interval. You have mapped your current application landscape, determined future landing sites and clustered applications with the same final destination. This way you know what the impact of the cloud will be on your IT environment. But a migration to the cloud has at least as much impact on the organisation and its staff. We will discuss how to map this impact in the next chapter.





STEP 3

The impact of cloud on the organisation

Your cloud move will bring about a few things in your organisation. There is a multitude of providers of cloud services, so a clearly formulated question about new or modified IT facilities is necessary to find the optimal product or supplier. Being able to effectively structure and thus help determine the demand from the institution becomes a value-adding activity, just like the management of those external parties and services. The success or failure of your cloud move is largely determined by good coordination between the institution and IT, both internally and externally.

Your application landscape will look different, which means that your IT management will also change. Colleagues from the IT department will have a different set of tasks and will have to learn new skills. Colleagues outside the IT-department just as well have to get used to a new way of working. You also spend money on other things than before and, especially in the beginning, this causes an increase in costs. In this chapter, we discuss ways to prepare yourself and your colleagues for cloud migration and how to manage it.

IT MANAGEMENT: HOW MUCH DO YOU OUTSOURCE?

Now that you have classified and clustered your applications, you also know what changes need to be made in terms of IT management. Because how much will you continue to do yourself and which tasks will you leave to a Cloud Service Provider or a third party? In general, you can say that you can also purchase commodity applications that run in the background (and are therefore not mission-critical) as a SaaS product or leave them to a Managed Service Provider in a Managed Public Cloud. You generally keep the applications that determine your distinctive character in-house, while you can experiment with new applications in a Public Cloud without the help of a third party.

But then it comes. In addition to the characteristics of the application, the degree of self-control also has everything to do with the kind of institution you are in. Business management and logistics will show many similarities in terms of width. But there are also clear differences.



NEW ROLES AND SKILLS

Now that you know the impact of cloud migration on your IT management, you can map out the impact on the various departments and individual colleagues. Not only do they have to get used to new systems and processes; the requirements placed on them are also changing. For example, programmers must learn to develop cloud-native, using existing building blocks in the cloud as much as possible.

There is also good news. Because you will purchase more applications as a SaaS product, you and your colleagues will have more room to develop new, innovative applications. This increases the innovative power of your organisation and gives your work a new dimension.

TRANSITION TIME

In the shorter term, you need to consider the impact of the cloud migration itself. In the meantime, your organisation will continue to go full steam ahead and not all processes can be interrupted easily. Try to keep the transition time as low as possible. The longer it takes, the longer you will struggle with double costs for your data centers and your cloud solution. Also look at the effect of the migration per department. You don't want to plan it in such a way that departments A and B can continue working while department C is a month away. It therefore regularly happens that IT managers choose to move to the cloud in phases, so that the change burden is better distributed across the organisation. This isn't a problem. By prioritising in advance, you can migrate the applications that will benefit you the most first.

“6 Higher education institutions will be experimenting in with accessing and exchanging educational data. This allows students to determine their own learning path and gives them more freedom of choice.”



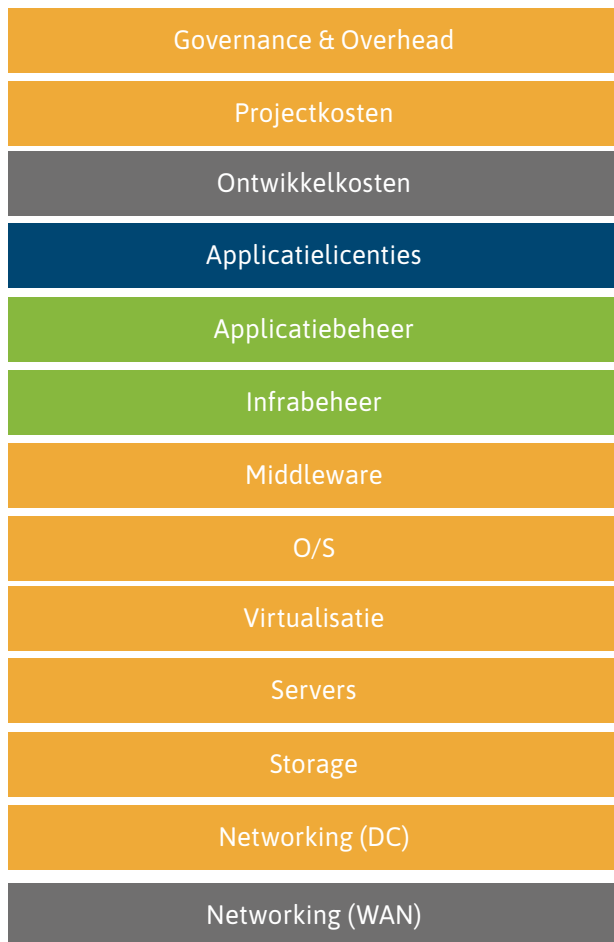
STEP 4

Build your business case

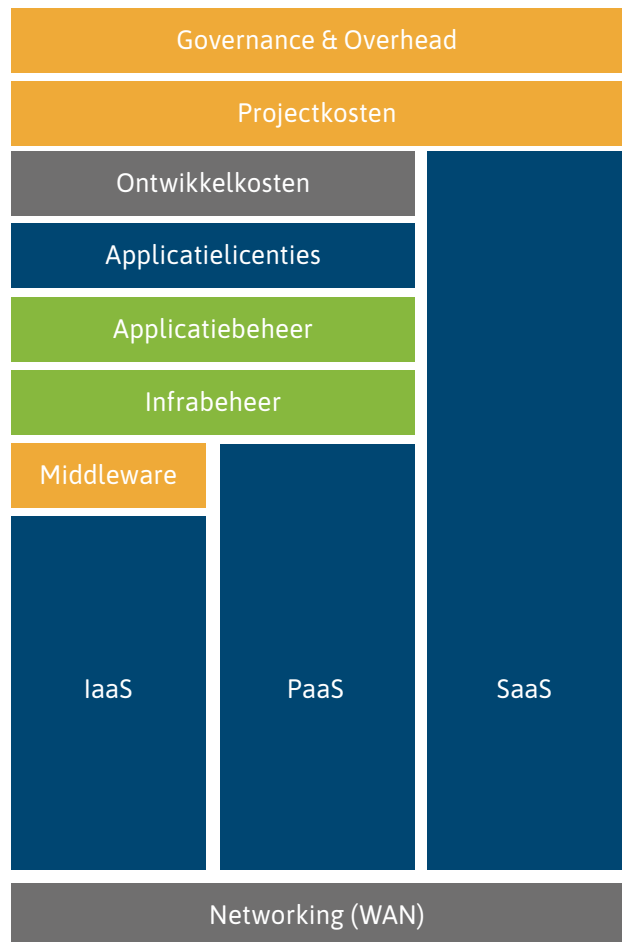
It took a while, but the moment of the hard numbers has arrived. You have sorted everything out: the new destinations for your applications, the different cloud forms that suit your objectives and the effect that the cloud and the migration will have on departments and colleagues. Now it's time to make your business case: the sum of the expected costs and expected savings. Based on this business case, you can make a concrete plan and your cloud strategy is complete. In this chapter we will help you on your way.

CURRENT SITUATION VERSUS FUTURE SITUATION

Roughly speaking, a cloud migration is the transition from the image on the left (current situation) to the image on the right (future situation). As you can see, no parts are actually missing. Networking, storage, virtualisation; everything is still there. What differs is the number of ways you can purchase these parts. Where in the current situation you manage all components yourself and pay per layer, after the cloud migration you can choose to purchase the components together as an IaaS, PaaS or as a SaaS service. These three forms differ in the degree of freedom you have left. For example, with IaaS you only hand over the infrastructure and in the case of SaaS you leave everything to your cloud Service Provider.



Huidige situatie



Nieuwe Situatie

CURRENT TCO VS FUTURE TCO

To be able to calculate the cost savings of cloud, you will first have to list the current costs. You do this first per application. For example, how much do you currently spend annually on hardware, servers and maintenance, and what will you pay for the cloud version of that application in the future? If you add up the current costs of all applications and compare them to future costs, you will be much wiser about the savings to come.

Then you also calculate the costs that you currently spend on overarching matters such as the network, management, development and project costs, governance and overhead (= the work that you carry out yourself as an IT manager, for example). Compare these costs with future expenses for those same parts. In terms of project costs, you will invest in Identity and Access Management (IAM) in the future, for example, to arrange access management on the various platforms. In addition, consider investments in network connections and tooling for managing and analysing your cloud environment. You will actually save on development management costs because you will purchase more applications as a SaaS product. By including all these costs in your calculations, you find out the Total Cost of Ownership (TCO) of the current situation and you can compare it with that of the future.

CALCULATE THE COSTS OF THE MIGRATION ITSELF

The cloud migration itself is of course the investment, both in terms of consultancy and own man hours. For example, the journey to the cloud can temporarily interrupt colleagues in their work and performing routine tasks takes more time in the beginning. In some cases, it is also decided to technically adjust applications so that they land on the cloud platform in the most effective way.

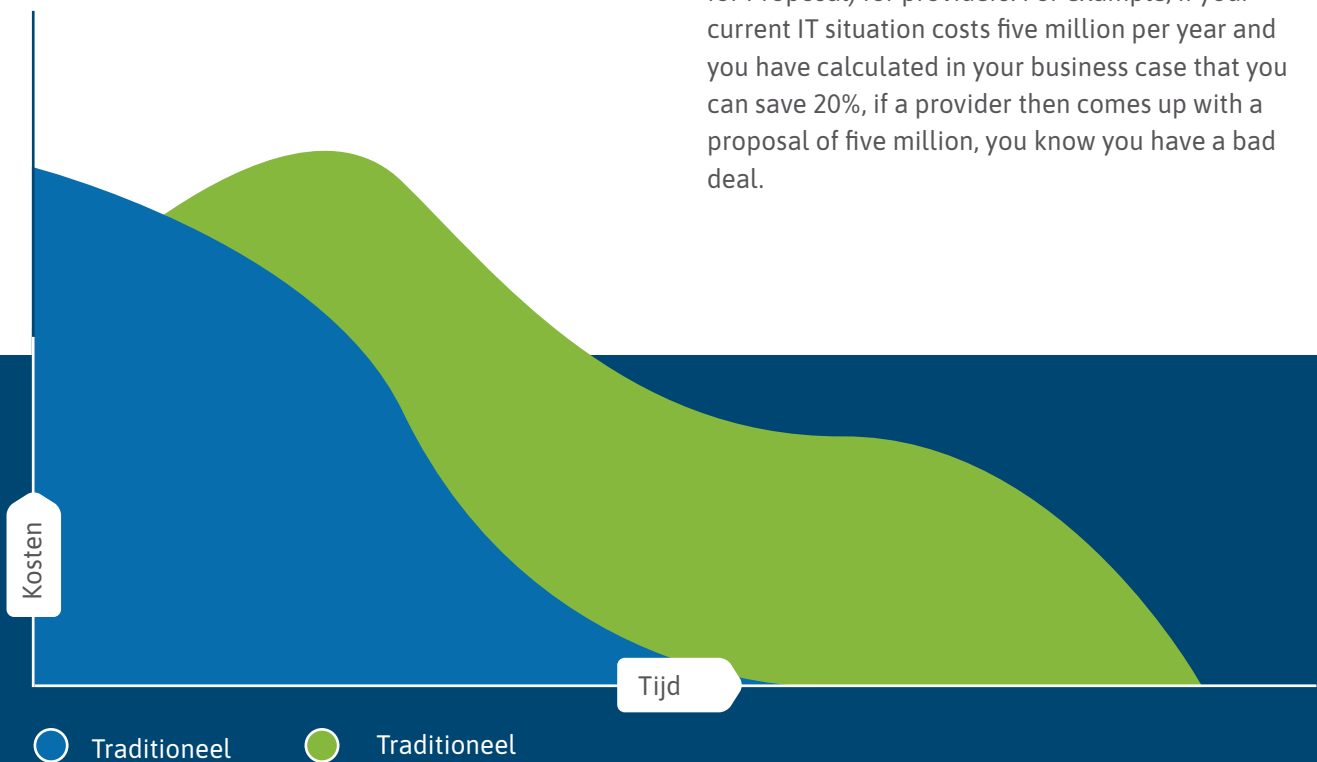
In addition, employees must be trained so that they can deal with new or changed processes and working methods. Finally, during the transition period you pay for both the old and the new situation. For example, during this period you have lost money on hosting costs in your Private Cloud, while you may have already replaced the relevant applications with a SaaS product or no longer use them at all.

EXPECTED SAVINGS

In the long term, a cloud strategy should yield additional savings. On average, you will pay less per application and it will become cheaper to develop and test applications. Launching it is also faster and you get your products and services to your customers faster and better. This in turn leads to more and satisfied students, researchers and employees. As indicated earlier, you and your colleagues will have more time to spend on innovation, which in turn contributes to the distinctive character of the educational institution. It is difficult to calculate how much extra profit your cloud strategy will yield for you in concrete terms. That is why we recommend omitting these estimates in your reports to higher management and only communicating the concrete cost savings. As a result, reality can only turn out better and you have not made empty promises.

REPORT

We advise you to be as specific as possible in your calculations. If you have made the TCO calculation and include the costs for the migration itself, you will see that the total costs first rise before they fall. This increase is because you invest money in your cloud migration while the applications are still in your physical network. Over time, however, the cloud strategy will pay off and costs will drop below current levels. That looks something like this:



WHAT TO DO WITH THESE NUMBERS?

Your business case is extremely important for internal decision-making. Which applications do you migrate when, where and how? In addition, the figures tell you what you can save in the future within the application landscape and the business in general. You will also know through your preliminary research which new knowledge and skills you will need and what the migration is expected to cost. Together this makes a complete report to management, but it also gives you a starting position for negotiations with cloud providers because you'll have very detailed insight into your current and expected costs, you can properly substantiate how much you are willing to invest in your RFP (Request for Proposal) for providers. For example, if your current IT situation costs five million per year and you have calculated in your business case that you can save 20%, if a provider then comes up with a proposal of five million, you know you have a bad deal.

“Which applications yield the most in the short term? Which have the shortest lead time? How many changes can the different departments handle?”



STEP 5

Prioritize and create an action plan

The last step before the actual cloud migration is to create a roadmap. In this you indicate which applications will move and when and who will be involved. Write a roadmap based on three pillars:

- People
- Process
- Technology

PEOPLE

First make an inventory of the human resources in your educational institution. Do this before you focus on processes and technology; you cannot plan that without knowing whether you have enough people and knowledge in-house. Suppose you are going to turn off twelve applications: what will happen on the work floor? Do whole departments get stressed or do you get problems with certain partners?

You may well find that you can only turn off ten applications and that the other two have to wait until next year. Also ask yourself who will perform the migration. Do you have enough in-house knowledge or do you need to look for a partner? The answers to these questions change your budget and can be classed under “actual costs”.

PROCESS

After making an inventory of your human resources, you map out what is needed in the field of governance. In other words: what is needed to keep the cloud under control? How does the new application landscape affect current IT processes and what does this mean for the working methods of your colleagues? And what will you do to prepare the people in your organisation for the migration? Do you hold weekly meet-ups and report monthly to senior management? And where can colleagues go with questions?

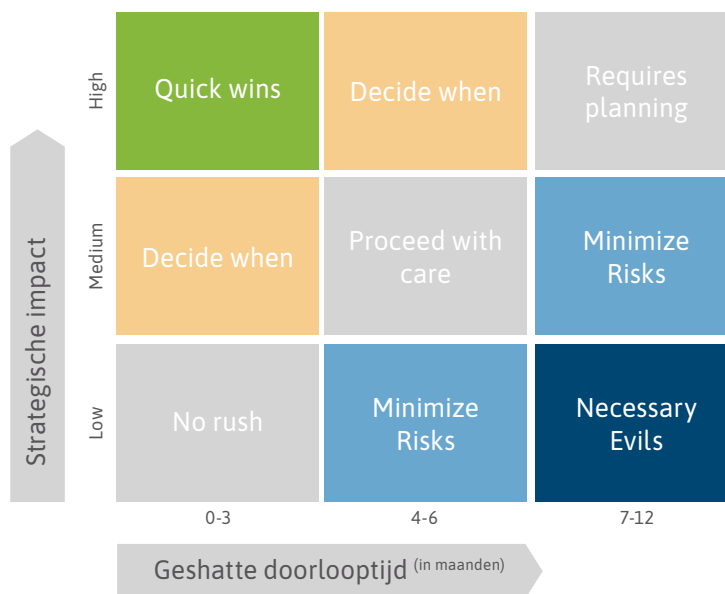


TECHNOLOGY

In the technological field, you want to know in advance which preconditions you need to have arranged. Think of setting up the network, integration, Identity and Access Management, purchasing tools and arranging security. Thanks to your inventory of the capacity and knowledge you have in-house, now is the time to bring in third parties to support your IT department.

SET PRIORITIES

Then prioritize: which applications yield the most in the short term? Which have the shortest lead time? How many changes can the different departments handle? Based on these financial, technical and operational questions, you determine what will happen to which application, when and by whom. Here you will find a handy model to help you with this:



FINALLY

If your planning is complete and you have selected a cloud provider, you can theoretically start executing the activities in your roadmap. However, experience shows us that from the start, a lot of time is also spent selling your cloud approach to other people within the organisation. So take the time for this. Organise regular meetings in which you discuss the steps to be taken with those directly involved. Such a meeting does not have to last long, but it ensures that everyone knows what to do and it keeps you informed of developments. Your thorough preliminary work allows you to properly estimate the effect of the cloud migration on the budget and

your people, but with an extra check every now and then you counteract resistance and prevent you from falling behind schedule.

THAT'S IT!

This was the down-to-earth cloud approach for IT managers from A to Z. We wish you success in your cloud migration. Do you have questions in the meantime, please don't hesitate to contact us!



ABOUT RAPID CIRCLE

Rapid Circle supports organisations in their digital transition. We help you future-proof your application landscape with an approach that optimally supports your business objectives. We are specialists in the field of cloud strategy and distinguish ourselves as an independent and experienced party. Based on a sound methodology, we offer customers a structured and strategic approach to prepare for their migration to cloud.

Customers especially appreciate the thoroughness of our analysis and the concrete plan they receive.

Do you need help with your cloud migration or do you have a question? Our experts are ready for you.

