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# **Financing the cloud – Can financing drive the cloud transformation and how?**

Cloud based technology and it's financing



Master's thesis

Business Management and Entrepreneurship

Visamäki, Autumn 2017

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VISAMÄKI

Business Management and Entrepreneurship

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**Year** 2017

**Title of Master's thesis**

Financing the Cloud – Can financing drive the Cloud Transformation and how?

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ABSTRACT

The aim of the thesis is to look at the Cloud and Cloud based technologies and transformation projects to the Cloud from financing point of view; can financing be of aid in terms of making Working Capital more effective and how.

The theoretical background is gathered from publications and research papers in the financial industry.

The research was executed by interviewing industry experts. The people interviewed work for in the IT- field in manager positions for sales and in finance and also in the finance sector as managers and in sales. The people were chosen to get a broad view not only in finance but also from the organisation whose end customers use or would possibly benefit from financing.

The results show that the key people interviewed see financing as positive component when transforming to the cloud. Financing was seen as a strategic tool and as a value adding component to organizations. Financing was also seen as an instrument that helps to move from Capex to Opex and helps the end customers in adopting new technology faster while balancing budget and also making Working Capital Management more effective.

The idea could be further developed from technology and risk point of view, how the field of changing technologies and projects that are becoming mainstream are changing the financing companies view and capabilities in financing.

**Keywords**

Cloud, Transformation, Financing, Financing the Cloud

**Pages**

39 p. + appendices 2 p.

VISAMÄKI

Koulutusohjelman nimi

**Tekijä**

Kimmo Kärkkäinen

**Vuosi** 2017

**Työn nimi**

Transformation and how?

Financing the Cloud – Can financing drive the Cloud Trans-

TIIVISTELMÄ

Lopputyön tarkoitus on tutkia pilvipalveluita ja niihin liittyviä teknologioita rahoituksen näkökannalta; voiko rahoitus auttaa ja tehostaa käyttöpääoman hallintaa ja ennenkaikkea miten.

Teoreettinen viitekehys on pääasiassa kerätty rahoituksen alan julkaisuista, sekä tutkimuspapereista.

Lopputyön tutkimusosuus on toteutettu haastattelumenetelmällä, jossa alan johtavia asiantuntijoita on haastateltu. Haastatellut henkilöt toimivat IT-alan johto- ja myyntitehtävissä ja lisäksi rahoitusalan johtajia sekä myyjiä on haastateltu. Otanta on rajattu näihin aloihin, jotta saadaan laaja näkökanta, joka ei rajoitu pelkästään rahoitusalaan mutta myös organisaatioon, jonka asiakkaan käyttävät tai mahdollisesti hyötyisivät rahoituksen käyttämisestä.

Haastatteluiden johtopäätökset osoittavat, että rahoitus nähtiin positiivisena osana kun transformaatio pilveen tapahtuu alan asiantuntijoiden toimesta. Rahoitus nähtiin myös lisäarvoa tuovana tekijänä. Rahoitus koettiin instrumenttina, joka auttaa siirtymään Capex- mallista Opex- malliin sekä käyttöönottamaan uusia teknologioita nopeammin ja samalla tehostamaan käyttöpääoman hallintaa.

Lopputyötä voitaisiin jatkaa riski- ja teknologiaperspektiivistä, miten yleistyvien teknologioiden ja projektien rahoitus vaikuttaa ja muuttaa rahoitusyhtiön riskinottohalukkuutta ja kyvykkyyttä.

**Avainsanat** Pilvi, Pilvipalvelut, Rahoitus, Pilvipalveluiden rahoitus, Transformaatio

**Sivut**

39 s. + liitteet 2 s.

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## 1 INTRODUCTION

Technologies available are developing constantly and new innovations appear on a seemingly constant pace. One of the most impactful changes of recent times, is the change and transformation towards the cloud. Cloud computing is a paradigm shift in computing with the potential of changing the whole perspective with which we look at computing today (Misra & Mondal, 2009). Cloud based technologies have been available for some 15 years, but the adoption of the cloud and its current status of being a norm, has happened in the recent years. Software and systems, and the access to these, are being transformed to the cloud and many organizations and companies are adopting the cloud in business related matters. Also, Artificial Intelligence (AI), which is one of Microsoft's key concentration areas, will run on Azure which is Microsoft's Cloud Platform. Cloud and Cloud Transformation therefore include more than just saved information on someone else's computer.

Cloud based technologies enable remote access, information being shared globally and instantly, new ways to collaborate and information can be accessed and stored in more efficient ways. There are several ways to transform the business and operations into the cloud. The project to enable cloud based solutions may be costly in terms of licenses, software, equipment and work. This may cause challenges in the adopting organizations Working Capital and budgeting in general.

Today, organizations and companies have several ways to finance the transformation to the cloud. A more traditional approach is to use cash and according to a budget created. One alternative is to loan the money from a financial provider i.e. a bank or a financing company. The financing may be acquired through leasing or with more sophisticated means of financing through programs offered by financing partners. The method chosen is often derived by the company strategy and how they wish the instrument to behave and what is the best outcome in turn of capital and resources.

### 1.1 AIM AND CONTRIBUTION

This thesis focuses on finding out how can financing enable and drive the cloud transformation process and what are the factors to be considered from financing perspective. This thesis also discusses how financing can aid organizations in saving the scarce resource of working capital by using financing in cloud transformation. This thesis takes into consideration the so called commercial sector, being companies and organizations of different size. When financing or other key concepts as the cloud is discussed it's done so from a commercial point of view, and in usage of concepts like an "Organization" or a "Company" the same type of commercial entity is in consideration even if not individually clarified upon.

For the analysis and research part, interviews have been performed with leading industry experts and the results have been derived on how financing seen as a tool in cloud transformation and why.

### 1.2 DISPOSITION

Section 2 discusses the concept of the cloud and the central concepts associated. In section 2 also views the challenges around the cloud and alternative methods. In section 3 financing is looked in more detail as well as the usual alternatives that companies have in use to finance the transformation process. The hypothesis is introduced in chapter 4 and chapter 5 focuses on methodology. Chapter 6 explains the research method and chapter 7 discusses about the analysis and the collection of data in itself.

## 2 THE DEFINITION OF THE CLOUD

The National Institute of Standards and Technology defines cloud computing in the following way: “Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction” (NIST, 2016).

Forbes listed the top five cloud computing vendors in November 2017. Microsoft was listed as the top provider, due to four factors: its deep involvement at all three layers of the cloud (IaaS, PaaS and SaaS); its unmatched commitment to developing and helping customers deploy AI, ML and Blockchain in innovative production environments; its market-leading cloud revenue, which is estimated at about \$16.7 billion for the trailing 12 months (not to be confused with the forward-projected \$20.4 billion annualized run rate the company released on Oct. 26); and the extraordinary vision and leadership of CEO Satya Nadella. (Forbes, 2017).

## CLOUD WARS

Top 10 Rankings – Nov. 7, 2017

<b>1. Microsoft</b> – Nadella on \$20.4B run rate w/ <a href="#">end-to-end customer-centric cloud</a>
<b>2. Amazon</b> – AWS needs software! <a href="#">10 software companies Amazon might look at</a>
<b>3. IBM</b> – Rometty strikes gold helping customers convert legacy IT to private cloud
<b>4. Salesforce</b> – Benioff must extend SFDC impact from SaaS deeply into PaaS
<b>5. SAP</b> – McDermott accelerating major product-line overhaul to HANA and cloud
<b>6. Oracle</b> – Ellison on cybercrime: <a href="#">'Make no mistake, this is a war—and we're losing'</a>
<b>7. Google</b> – Tons of potential but still unclear if/how it wants to play in enterprise
<b>8. ServiceNow</b> – Jumps ahead of Workday: revenue up 40%, new products boom
<b>9. Workday</b> – Q2 revenue surges 41% as <a href="#">Bhusri</a> jumps into PaaS marketplace
<b>10. VMware</b> – revenue & stock jump on deals w/AMZN MSFT IBM GOOG for hybrid

Figure 1. “Cloud Wars”, by Forbes.com

Rafaels describes cloud Computing as the self-provisioning and on-demand delivery of IT resources and applications over the Internet with a pay-as-you-go pricing model (Rafaels, 2015).

This cloud model promotes availability and is composed of five essential characteristics (On-demand self-service, Broad network access, Resource pooling, Rapid elasticity, Measured Service); three service models (Cloud Software as a Service (SaaS), Cloud Platform as a Service (PaaS), Cloud Infrastructure as a Service (IaaS).

### 2.1 CLOUD TYPES AS A SERVICE

Cloud software as a service:

Software as a service (SaaS) is a model in which a third-party provider takes care of hosting of applications and makes them available to customers over the Internet. The SaaS model is one of the key components in today’s cloud computing.

SaaS erases the need for organizations to install and run applications on their own computers or in their own data centres. The need to acquire hardware is removed as is maintenance and traditional licensing. Other major benefits include a so-called pay-as-you-go model, in which the end customer pays on a monthly basis per usage. The use of SaaS can be also be terminated. However, the termination of critical operational systems / process should be carefully investigated so that the business is not disrupted. The SaaS model also brings automatic updates and the usage can be scaled to reflect the organizations own needs based on the rhythm of business,



meaning that more or less services and features can be used as an option. (modified after Techtarget, 2017).

Cloud platform as a service:

Platform as a service (PaaS) is a cloud model in which applications are delivered over the internet. In a PaaS model, a cloud provider delivers tools (software and hardware) to its users as a service. Often times these are developer services. The provider hosts the hardware and software on its own infrastructure. This makes it possible for the users to erase the need to install hardware or software. PaaS does not usually replace an organizations infrastructure. However, some key services needed for development can be provided from the cloud. One advantage is that the organization does not have to maintain the software needed for development (updating) as they are ready to be used. The PaaS services are normally used through a web browser and it could be seen as an operational risk if the browser or related services are down. (modified after Techtarget, 2017).

Cloud infrastructure as a service:

Infrastructure as a Service (IaaS), is a cloud model, that provides virtualized computing resources over the Internet. In an IaaS model, a third-party provider hosts multiple services such as; hardware, software, servers, storage and other components on behalf of the end customer. IaaS providers can also host users' applications and take care of maintenance and backup.

IaaS platforms offer scalable resources that can be adjusted based on demand. IaaS is therefore suited for issues or task that are temporary, experimental or where an unexpected change might occur. IaaS environments also handle the automation of administrative tasks, dynamic scaling, desktop virtualization and policy-based services.

Applications and systems could be hosted through IaaS when being developed, and once everything seems as it should it can be removed from IaaS and taken in-house for instance. This could be used for instance in order to save costs.

IaaS is often paid on a per use basis (hour, week, moth). IaaS customers pay on a per-use basis, typically by the hour, week or month. IaaS eliminates costs associated with having internal hardware and software. The operational risks could be said to be in relation to the ownership as the IaaS provider owns the infrastructure, systems management. If the services cannot be reached or used it could cause serious operational risks for the end customers. (modified after Techtarget, 2017).

Rafaels also describes four deployment models (Private cloud, Community cloud, Public cloud, Hybrid cloud).

## 2.2 PRIVATE CLOUD

A private cloud is a cloud that is being used for a specific organization, i.e. their own cloud environment. The benefits are the same as in a public cloud in terms of scalability or usage. Private cloud is mainly intended for companies that need to have control of their environment. The end user, the company can also take care of the management of the Cloud, given resources. (modified from Techtargt, 2017).

Using the notion of “siloe d infrastructures,” many corporate IT environments today could be considered private clouds in that they are designed and built by and for a single customer to support specific functions critical for the success of a single line of business, (Williams, 2009).

## 2.3 COMMUNITY CLOUD

A community cloud could be described to be used mainly for public sector organizations, such as governmental bodies. The community cloud is an infrastructure that is shared by many organizations from a specific organization that have similar needs for information, working with joint applications or research (modified from, Techopedia, 2017). There is no mandate for the infrastructure to be either on-site or off-site to qualify as a community cloud (Williams, 2009)

## 2.4 HYBRID CLOUD

Hybrid cloud is a mixture of cloud based technologies and technologies that are on- premises, in a machine room. Some organizations have the need to use both models. The hybrid model is a flexible model where an organization might use sensitive information or critical applications on-premises and less sensitive information on a public cloud for instance.

Hybrid Cloud can be seen effective for businesses that have variable needs or when the needs fluctuate in terms of needs. If an organization has certain periods during the year when business volume or transactions grow, it could be a good candidate for a hybrid solution. The critical apps could be handled through a private cloud and if more resources are needed they could be used via a Public Cloud. This kind of an access demands for a Hybrid solution. (modified from Techtargt, 2017).

Expect demand for hybrid cloud solutions in environments where strong requirements for security or regulatory compliance exist alongside requirements for price and performance. Note that major cloud providers typically offer one or more of these types of deployment and service models. For example, Amazon AWS offers both PaaS and public cloud services (Williams, 2009)

I forecast that in the future, companies will not have their own data centres that take up space and acquire maintenance. Currently many organizations and companies buy these as a service or buy a certain piece as a service and take care some of the work and maintenance themselves.

The Cloud Computing model offers the promise of massive cost savings combined with increased IT agility. It is considered critical that government and industry begin adoption of this technology in response to difficult economic constraints. However, cloud computing technology challenges many traditional approaches to datacentre and enterprise application design and management. Cloud computing is currently being used; however, security, interoperability, and portability are cited as major barriers to broader adoption.

Wikipedia (Wikipedia, 2016) determines the concept of the cloud as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort.

Organizations of different size have started to utilize the opportunities brought by the cloud in the recent years. However, it's during the last two years that the discussion about the cloud have really been gaining attention. The cloud can in it's simple form enable access to files remotely or then it can include the whole organization in using products like Office 365 and OneNote that enable real time access to files and cross collaborating efficiently removing the barriers of physical location and time.

Transforming or adopting the cloud however has costs. The cost is determined by the depth of the cloud to be utilized and of course for how many employees as licenses and their cost usually have a direct price per user. For larger organizations, usually consultancy, and actual work in getting all systems and process required in line, have a cost as well. This thesis will describe the generic situations associated with the costs and how they could be solved in using financing.

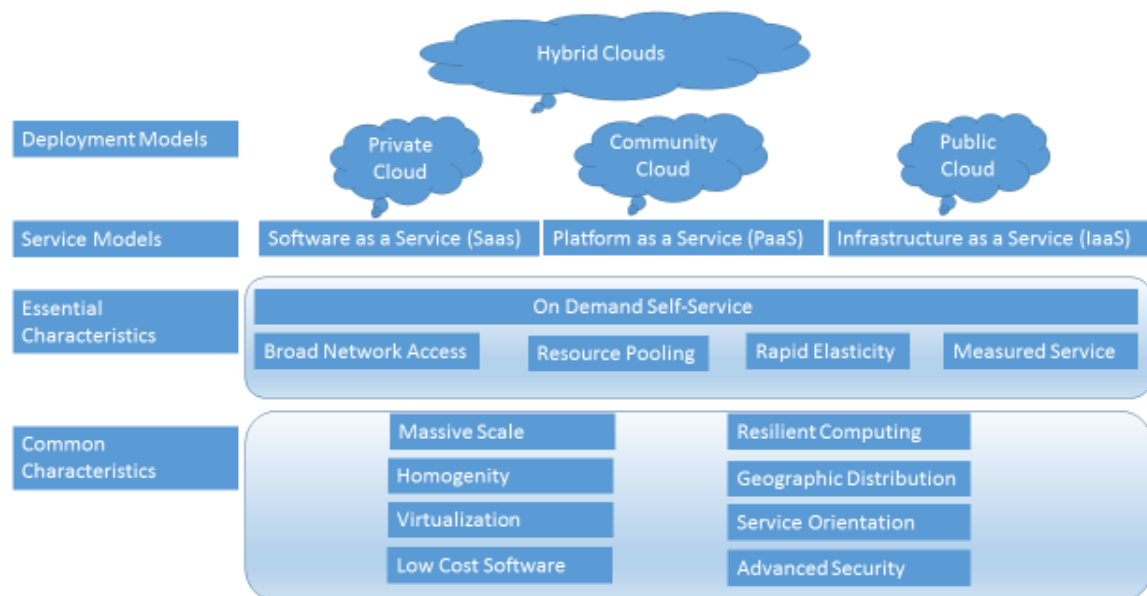


Figure 2. NIST Cloud Computing Definition Illustration modified by Kimmo Kärkkäinen.

It could be simplified that the files and software and other tools that are being used through the cloud, are stored on someone else’s computer, one just has access to these remotely.

In-depth characteristics of the cloud are not discussed in detail in this thesis, security, technology, cloud. vs. On- Premise technology, to mention a few, as this thesis is focused on financing the cloud based technologies.

## 2.5 SUBSCRIPTION BASED LICENSES

Regardless of the cloud model, licenses are needed in order to access and fully use the service and the chosen cloud model. Licensing, as in many IT related purchases are often the key. Cloud licensing is mainly operated with subscription based licensing. This means that instead of selling a single product for a certain term, a period of usage is sold under a contract. The customer can deploy the licenses needed under the agreement period. For instance, The Server and Cloud Enrollment (SCE) that is being offered by Microsoft is an enrollment (agreement) that enables a company to commit to one or more key server and cloud technologies.

Usually the end customer commits to a three-year term when signing an agreement. The cost of the SCE is dependent on the needs of the customer, how many products they have included and how many licenses they need to acquire. Financing can be seen as a strategic tool that can be used when acquiring an agreement like this. This is due to the fact that depending on the needs of the end customer, number of employees or development needs, the agreement can for a large customer be a strain on the balance sheet if

paid upfront or if cash is used. Financing can help to alleviate working capital. On subscription based licenses, scalability is the key. The end customer has the right to scale the volumes up or down on a pre-determined period. Therefore, the product “lives” with the actual need of the customer.

During an anniversary date of the agreement, once a year, the end customer has a right to add users to their agreement, increasing the volume, or they have the right to downgrade the volume needed. This means that the agreement adjusts to the actual need of the customer. If in a case for instance where the needed license amount go up, if there is an increase in business and more features or more workstations are needed to be licensed, this correlates well with financing. With financing it’s possible to avoid the monetary cost needed to obtain the licenses. In a case of a downgrade, the financing can be also downgraded, meaning that the customer pays for what they use. Subscription based licenses are needed for products like O365 or an EAS agreement sold by Microsoft.

### 2.6 CLOUD REVENUE POSSIBILITIES

Judson Althoff (Executive Vice President, Worldwide Commercial Business) from Microsoft stated in June 2017 that “Digital transformation is a wave of business innovation fuelled by cloud technologies like the Internet of Things, augmented reality, artificial intelligence and data. Driving our customers’ businesses forward through digital transformation has opened an estimated \$4.5 trillion market opportunity.” (Microsoft blogs, 2017). The possibilities in the cloud market are truly immersive. According to the chart below by Business Insider, for Microsoft alone, the development of cloud revenue has grown rapidly from 5.5 billion in 2015 to almost 19 billion in 2017. The growth alone from 2017 to 2018 is expected to be 10 billion.

This also gives somewhat of an estimate on the possibilities of financing. Conclusions can be drawn that there is a need for financing the cloud transformation and related features. It would be an understatement to conclude that this revenue would be derived without customers having the financing in place.

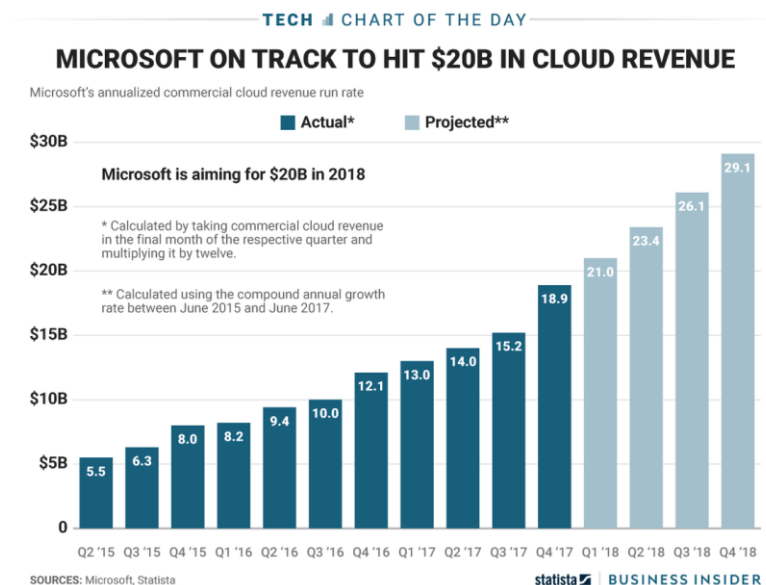


Figure 3. Microsoft cloud revenue projection, Business Insider.

It seems that there are possibilities in the Cloud that one might not even think about. Stora Enso for instance announced that they have joined forces with Microsoft to bring cloud-based intelligent packaging solutions to clients globally. Intelligent Packaging by Stora Enso utilizes Microsoft Azure, the leading cloud platform for business digitalization. The global and scalable cloud platform from Microsoft enables reliable and secure data collection and analytics for clients investing in innovative intelligent packaging solutions. Further it's stated that "Microsoft Azure offers a scalable and trustworthy platform for us and our globally operating clients. Now packaging data can be collected and analysed anytime and anywhere, allowing customers an unprecedented amount of valuable information from supply chain performance to consumer behaviour. Merging renewable packaging with intelligent, cloud-based features supports a more effective and profitable business". (Stora Enso press release, 7.11.2017)

### 3 FINANCING

Financing could be described as matching the sources of funding with the parties in need of it, in other words allocating financial resources best to meet the needs all parties involved in order to reach a set target.

Marks, Robbins, Fernandes, Funkhouser and Williams state that corporate finance has an internal consistency that flows from its choice of maximizing firm value as the only objective function and its dependence on a few bed-rock principles: Risk has to be rewarded, cash flows matter more than accounting income, markets are not easily fooled and every decisions a firm makes has an effect on this value. (Marks, Robbins, Fernandes, Williams, 2009).

On a larger scale, financing is of course more than just lending. Financing and the ability to use cash and optimize cash flows is about creating value in using the cash more effectively in order to meet strategic goals. Koller, Dobbs & Huyett state that financing is very much a value adding component due to the fact that;

- 1) A business's value is driven by its growth and return on capital, and resulting cash flows
- 2) Value is created when companies generate higher cash flows, not by simply rearranging investors' claims on cash flows.
- 3) Movements in company share price reflect changes in the stock market's expectations, not just underlying performance
- 4) The value of a business is not an absolute, but, rather depends on who is managing it and the strategy pursued. (Koller, Dobbs, Huyett, 2011)

The framework of this thesis concentrates on financing as a value adding component. With a strategic financing solution in place, cash flows can be structured in order to match cash flow fluctuations and meet budget concerns by adopting financing at a time when the company might have a better cash position. This is in the interest of any BDM's (Business Decision Maker). With financing key ratios of a company can possibly be better from analysts point of view and help the company avoid up-front payments that can otherwise deteriorate Working Capital.

Misra & Mondal also discuss faster time to market. Faster time to market has many advantages such as one gets to have the entire market share and thus one can charge a premium, as there is no other competitor in the market. Thus, one gets a lot of extra sales and for extended period of time getting the opportunity to capture the loyalties of customers earlier. It also improves the company's technological and innovative image. (Misra and Mondal, 2009). Clear conclusions can be drawn that with financing faster time to market can be achieved as the end customer can then focus on the productivity and gaining revenue faster than without financing. As figure 4 below graphically illustrates the launch of a product, after the development costs as time progresses, profits can be made.

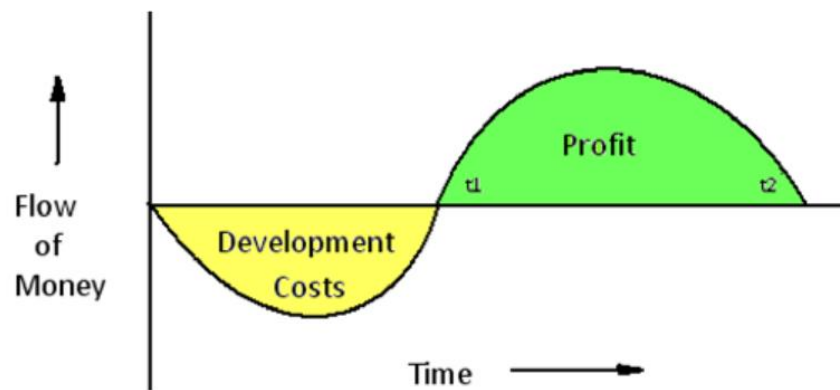


Figure 4. Faster time to market. Misra & Mondal, 2009

Williams states that there are countless benefits stemming from the adaptation of cloud computing, both in the short term and the long term. Many benefits of cloud computing in the corporate arena are purely financial while other network externalities relating to cloud computing will have much broader positive effects. Therefore, it is important for decision makers to understand the impact of cloud computing from the financial perspective. (Williams 2012).

### 3.1 SOURCES OF FINANCING

When an organization makes a decision to embark a transformation project, one of the most important areas of consideration is how it should be financed, in other words before a company can invest in an asset it must obtain financing, which means that it must raise the money to pay for the investment (Ross, Randolph, Westerfield, 2015). Typically, organizations have two possibilities to choose from; either pay it themselves or have the costs financed. Organizations have access to financing via multiple sources, often provided by their house bank(s), financing companies, through internal lending, investors, leasing, the stock market by raising capital or a mixture of different financing loan model tools often referred as syndications. The impact of financial considerations on the investment decision may vary with the type of investment (Hall, 1992).

The primary determinant of the debt source is the credit quality of the issuer. Firms with the highest credit quality borrow from public sources, firms with medium credit quality borrow from banks, and firms with the lowest credit quality borrow from non-bank private lenders (Denis & Mihov, 2003). It is therefore necessary to broaden the range of financing instruments available (to SMEs) and entrepreneurs, in order to enable them to continue to play their role in growth, innovation and employment. Financial stability, financial inclusion and financial deepening should be considered as mutually reinforcing objectives in the quest for sustainable recovery and long-term growth (OECD, 2015)



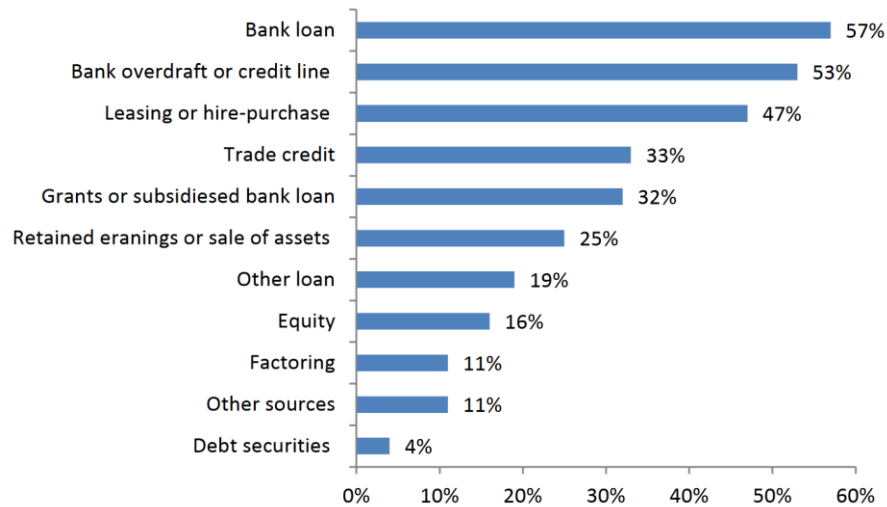


Figure 4. Relevance of financing types for SMEs, EU -28, ECB/EC SAFE survey, 2014, ECB.

In the following chapters some of the most usual financing models have been described. The below mentioned financing methods are chosen, as they depict the common, and in the writer's experience, the most used methods in obtaining financing traditionally. The selected methods below depict the financial sources typical in Finland. The following financing sources show the alternatives an organization has at disposal when obtaining financing. Financing in general can be a tailor-made solution that combines many aspects of the below mentioned alternatives. Instead of looking financing from a pure loan point of view, it should be looked upon as a value adding component that can have many aspects. Cantillo and Wright stated that large companies with abundant cash and collateral, tap the credit markets directly, that these markets cater to safe and profitable industries, and they are most active when riskless rates or intermediary earnings are low (Cantillo & Wright, 2000). All the different methods below are important to take into account as it is pivotal to describe the basic financing methods available.

### 3.2 LOANS

When an Organization has a need to finance an investment, a traditional approach is to acquire a loan. A basic loan is an arrangement where an organization can finance an operation that it might not have the capital to finance themselves. Usually loans have a short maturity, 36 months to 60 months, in which time the loan has to be repaid. Loans typically are backed up by collateral or guarantees from the organization.

Some loans are unsecured, and this means that the financial provider trusts the company seeking the loan and makes a credit decisions based on the lender's credit worthiness instead of backing it with collateral.

If the loan is backed by collateral, the financial institution could in a state of default, if the end customer cannot meet the payment schedule, sell the collateral in order to recover their losses.

Depending on the terms and conditions received from the financing provider and the needs of the customer, the interest rate tied to the credit can be fixed for the entire period; the interest rate stays the same, or it could be a floating one, that reflects the current market situation.

A typical method of corporate lending in Finland, is made through Revolving Credit Lines. Revolving Credit Lines can be seen a limits on an account where a certain limit is agreed with the lender, and the organization can then make decisions based on the amount lent to them. In practice a maximum balance is granted, and the organization can then draw as much as they need, when they want it as long as the amount is not exceeded. Usually, the interest rate is calculated on the amount drawn, which gives the organization more flexibility, instead of the whole amount. Covenants are also part of corporate loans, see the chapter below.

### 3.3 SYNDICATIONS

Syndications are arrangements that require the collaboration of many financial providers. According to the European Central Bank, debt is the major source of external financing for large corporations. Syndications as a form of financing are also typical in Finland. In 2007, corporate bonds and syndicated loans made up 94% of all public funds raised in the European capital markets, while public equity issuance accounted for only 6%. Today, many of Europe's largest firms use corporate bonds and syndicated loans extensively and, often, simultaneously to finance their investments. Since the introduction of the euro syndicated loans and corporate bonds have become the main sources for large debt financing: in both markets, firms can raise large amounts of funds with medium and long-term maturities (ECB, 2009).

It could be that often a large exposure towards a single entity would be too much to bear on by a single financial institution and therefore the risk is spread and divided between many institutions who all grant a certain amount of the total amount needed. These techniques represent an appealing form of finance for firms that are approaching a turning point in their life cycle, when the risks and opportunities of the business are increasing, a capital injection is needed, but they have limited or no access to debt financing or equity, or the owners do not want the dilution of control that would accompany equity finance (OECD 2015).

The finance providers can be international, which is the case with corporate lending, or domestic ones. Syndications are a common feature in lending, whether it's a more traditional loan or even in leasing. The product itself can be combined of different structures from limits to loans. Syndicated

loans are usually controlled by covenants, which are special conditions often linked to the organizations key ratios in terms of result, earnings and performance. The lender will most often once in a quarter provide information to the financial institutions that are in on the syndicate to show that they have not breached the covenants. If the covenants are breached the lender is subject to fees or can face the termination of the arrangement. Syndications in a cloud transformation project could become possible if the needed capital for licensing and services or if a company would build estate for servers and the risk would be too high for a single lender to bear. The European Central Bank further continues that “in the debt pecking order, syndicated loans are the preferred instrument on the extreme end where firms are very large, have high credibility and profitability, but fewer growth opportunities (ECB, 2009).

Niskanen and Niskanen (2004) state that covenants based on leverage, working capital, equity, and dividend pay-out occur in a majority of bank loan contracts. According to them Smith and Warner (1979) suggest that covenants are included in debt contracts to avoid conflicts between shareholders and lenders.

### 3.4 LEASING

Leasing is an arrangement where an organization can acquire and use assets, like computers or licenses without owning them. In a lease, an organization rents the equipment from a third party.

With leasing the organization has the right to use the equipment during the life time of the agreement. At the end of the agreement, the organization can most often purchase the equipment for themselves or replace it with current and newer technology. The lessee has a clear and predictable repayment schedule so the amount due can easily be budgeted. Leasing brings the end customer benefits in having the latest technology available that they might not afford and keeping up with competitors.

Leasing, an Operating Lease, can be used when a company might not want to have items in their balance sheet as assets, (discussed more in chapter 5.3.) rather than they would be considered rent expenses, therefore leasing can help with key ratios as well. Leasing is mainly used for hardware but is also applicable for licenses, such as cloud. As a form of short- and medium term financing, leasing also presents relevant non-monetary advantages for businesses. Mainly, leasing contracts are typically flexible towards customers' needs. They may allow buying the asset at termination of the contract, cancelling the lease before maturity of the contract, renewing the lease for additional periods, protecting the customer from increases in future lease rates, as well as tailoring lease payments to the cash flow generation pattern of the lessee (OECD, 2015).

The financing tools selected is individual for organizations and is usually dependent on the gain that is sought after. Financing usually has an effect on the company's balance sheet and thus have an impact on the figures and ratios that analysts use when determining the status of the company. Regardless of the financing method selected, I believe that all companies need to, and are interested in saving working capital which simply is the liquidity available for the operating of the company. Savings in working capital can be acquired in using the operating cash flow smoothly and efficiently and not tying it to certain acquisitions and leaving the company with more capital at use or to invest. A typical example of savings in working capital can be for instance in deploying cash faster globally by pooling it instead of having excess liquidity lying in accounts globally or by using alternative purchase methods or by aligning payments with budget. This can be possible for instance by deferring payments that would normally begin now, to the next fiscal.

Financing, as many other solutions used, has a cost. Therefore, the sought after effect whether it's a balance sheet improvement or the need to release working capital, together with the financing cost determine the solutions used. The costs associated may derive from the companies' risk profile, the time financed and the volume to be financed. According to Alta Group (Alta Group, 2015) Financing companies are also grappling with the changes in funding, technology, and sales methods needed to offer more dynamic service. This means that a financing company, be it a traditional bank, or a leasing company, has to be agile and pay observe closely what is happening in the markets and what it is that their customer would like to finance. This leads into assessing risks and reward on a field that is constantly changing. This is more discussed in later chapters.

## 4 WORKING CAPITAL

According to Garg, working capital management is the lifeblood and nerve centre of any business in the present day (Garg, 2015). Gill, Biger and Mathur conclude that management of working capital is an important component of corporate financial management because it directly affects the profitability of the firms; and that the way that working capital is managed has a significant impact on profitability of firms (Gill, Biger, Mathur, 2010). There are several key metrics to define an organizations status out of which the working capital is the most tangible. Working capital can be described as the assets the company or an organization has to its disposal to take care of the operating business of the company. The more working capital is at disposal, or the access to it, the better the company or organization is prepared to face the operational issues.

IT- investments, as other investments, tie down working capital. Usually when a company acquires licenses needed to run the operations or are transforming to the cloud, the costs can be high and the invoices are to be paid upfront. In later chapters, it's further described how financing effects the

working capital and how it alleviates and frees working capital to better usage. Mathuva (2010) describes in his findings on working capital that the management of a firm can create value for their stakeholders by reducing the number of days accounts receivable, and that companies are able to create competitive advantage in means of effective and efficient utilization of resources through a careful reduction of the cash conversion cycle to its minimum. In doing so, the profitability is expected to increase.

#### 4.1 CASH MANAGEMENT

For the last few years, especially after the financial crisis in 2007 and onwards to this day, companies have been paying attention to working capital and coming up in ways to free the tied down working capital. Garg further continues that if the levels of working capital are not enough, it could lead to shortages and problems with the day-to-day operations (Garg, 2015). Traditionally one starting point to free the operating cash that is tied down is to optimize cash management. Cash management can be described as the process of eliminating costs and gaining benefits in time. This can be achieved i.e. by Cash Pooling or making use of faster payments and consolidating the cash to a Group Account in order to gain the use of group wide liquidity and interest income. Also, spending available budget not only to one cost batch, and use structured payments to alleviate the costs is a good example in savings in working capital.

Cash management is a function or set of activities related to use the cash to the company's advantage; to gain most out of the cash available, often related to liquidity or profitability. According to Sultan (Sultan, 2017), there are five essential cash management functions:

##### 4.1.1 CASH PLANNING

Cash planning is very fundamental in cash management. For proper decision making, planning lays the foundation. Planning is basically a process or an organized activity, various steps followed in executing management duties. Cash planning is mainly concerned with the planning and control of cash. Cash planning shows the availability of resources, the uses if cash for a given period and projecting the need for cash flow in the future. Good cash planning ensures that cash is available to meet both the regular and irregular or unanticipated cash requirements.

#### 4.1.2 CASH FLOW MANAGEMENT

This facilitates proper management of cash inflows and outflows during the course of the business. Proper management of both the cash inflows and outflows is done through accelerating the rate of cash inflows and at the same time instance reducing the rate of cash outflows. Through making timely cash collections, controlling inventories, controlling payments etc, are key aspects of proper cash management.

#### 4.1.3 THE CONTROL OF CASH FLOWS

Due to the uncertainties involved in cash forecasting, the actual results will deviate from the planned values. Therefore, control cannot be left out when dealing with cash management. Control of cash is essential because it avails more usable cash from within the company. With a higher speed of the cash flow cycle, the speed with which inventory is converted into cash also increases. This reduces the cash requirement needed to meet the day to day obligations of the company.

#### 4.1.4 OPTIMIZATION OF CASH LEVELS

A sound liquidity position i.e. cash level, should be maintained. The focus of the financial manager in the course of planning, managing and controlling cash should be directed towards maintaining an optimal cash level. This enables the financial manager to meet the obligations in time. Equilibrium should be established between the profit level expected and risk faced by the company.

#### 4.1.5 INVESTMENT OF SURPLUS CASH

Surplus cash most often is referred to the excess of the cash inflows over the cash outflows, usually this cash has no need at the time being. Since no profits are gained from holding excess levels of cash, investing this excess cash should be done to gain returns. Surplus cash can be deposited in the bank for which it can earn interest or be invested in marketable securities for instance. This is the optimum situation that efficient financing will bring to companies. With savings gained by budgeting and applying a payment scheme, the end customer will have the opportunity to re-invest the cash.

Optimizing both working capital and cash management are related to efficient financing. Transformation to the cloud or licenses can be a strain for a company's balance sheet. With the possibility of budgeting and predictability in payments, financing can alleviate the pressure.

## 5 RESEARCH

As stated earlier, the research questions in this thesis are, can financing drive the cloud transformation process and how will financing drive the cloud transformation process and what are the possible benefits gained.

The hypothesis is that by answering to the research questions this thesis can in the end, be seen as an aid for organizations that undergo, or will adopt cloud, and whether they should use financing as a component in the transformation process.

The research is conducted by literature associated in the cloud and financing and to publications made by relevant stakeholders i.e. technology companies and financing providers and regulators. The thesis also includes interviews from the financing provider point of view and from the technology representatives. This thesis will draw conclusions and analyse the if financing can be seen as a value adding component in the cloud transformation process.

## 6 METHODOLOGY

This chapter discusses what are some of the key factors a financing provider must consider when reviewing the eligibility of a company to be financed.

### 6.1 RISK

Kerr and Nanda (Kerr & Nanda, 2015) discuss that from a financing point of view, looking forward from today, at what rate, if at all, will electric cars replace traditional automobiles and how will the supporting architecture for battery recharging be designed? What will be the impact of nascent augmented reality techniques for how humans interact? Which, if any, of the several ideas to cure cancer are most promising? From a financier's perspective, this makes it significantly harder to evaluate potential innovative projects that may require funding, particularly since often the only way to learn about the potential of a particular approach is to invest in it. This raises significant possibilities of financing constraints arising in the funding of innovation. In addition, the payoffs associated with making an investment and the way it is structured (e.g., debt vs. equity) can have important effects on what is financed and how financiers might shape the direction of R&D and innovation. At this point in time, the cloud can be still be seen as a new innovation from financing point of view. Although the cloud is becoming mainstream from a process point of view and the technology and adoption is increasing it is still relatively new as an area to be financed. Blockchain, Artificial Intelligence, Machine Learning, and Data Analytics all tie cloud services together and the are in which the cloud will be used upon in the future has no limits.

Before financing is offered to an end customer, the financing provider must make its own investigation, i.e. an underwriting process where the financing company makes a judgement on whether financing is available and at what terms. According to Ziegler (Ziegler, 2014) the goal is to make a judgement about the obligors (the end customer) ability and willingness to pay back what it owes and when it is owed. The main question can be said to be “What is the degree of risk that an obligor will have sufficient cash to pay back an obligation when it is due?”.

If the end customer has cash and the commitment is short term, then the risk could be said to be minimal. Ziegler further discusses that if the commitment is for a longer term, then a more in-depth analysis must be made that takes future cash flow, liquidity and capital structure into account. The analysis, be it for a shorter time or a longer period consists of assessing the performance of the end customer. How has the company operated its business, what is the income vs. expenses, how much profits or losses do they make? All these factors determine the financing company’s appetite to enter a financing agreement and with what terms. In 2015, Nordea Bank announced that it is forming a new unit, Group Credit Risk Management, to tackle the challenges of the future that the bank is facing and to make risk analysis and the processes harmonized (Talouselämä.fi).

If we look at traditional bank who provide financing, liquidity is seen as a measurement of risk. Delis, Hasan and Tsionas concur that liquidity in bank management (usually measured by the ratio of liquid assets to total assets) is needed for two main reasons. The first reason is to satisfy the demand for new loans and the second reason is to meet the daily and seasonal changes in deposits. Liquidity also inspires confidence in the banking firm, but too much liquidity is unwarranted, because liquid assets do not earn interest. Therefore, banks with more liquid assets are generally willing to increase their levels of risk in search for higher yield. Given the above, it is expected liquidity to have a positive effect on risk (Freixas and Rochet, 2008). However, the opposite direction should be negative, as banks with higher levels of risk should have a relatively low level of liquidity in their portfolios (Delis, Hasan, Tsionas, 2015).

From this a conclusion, can be drawn that financing companies that are not banks might be more effective in their view to risk as they are not burdened with liquidity and the constraints to act in according to optimizing it. A second conclusion can be drawn that non-bank financing providers might have a healthier approach to risk and have a balanced portfolio when measuring the risk. Traditional banks, with a lower appetite for risk, might therefore have a higher threshold to finance new innovations that often are seen as riskier. One can conclude that the cloud and its different components would fall into this category.

One key area is to think about the risk versus reward. If the underwriting process has a positive outcome, meaning that an end customer could be financed, the financing provider will take the company and its profile into



account and determine the risks associated with the individual end customer, can they pay their debt, and what will be the return on the investment i.e. how much the financing provider will in itself earn. Most often this is the interest rate that the end customer will pay for the arrangement. There are several ways to determine an applicable rate, however, usually the customers condition, performance, and risk profile determine the rate. This could be seen also that a customer that is performing well and is healthy, could have a lower rate than a customer that has more risks associated with its performance. The risk that the financing company may take can most often be reflected in the customer's rate.

But there are of course a set of external factors that guide the financing institutions. For instance, sectors. If a company is a healthy one and financing would be applicable, but the financing provider has in the past financed many companies in that operating segment, it might not be wise to allow exposure to grow on that segment. If something was to happen and the end customers in that segment would face difficulties in paying their debts, then it is the financing company that is facing a risk of not getting paid. All these factors must be taken into account when determining financing.

### 6.2 COST OF CAPITAL AND NET PRESENT VALUE

Misra & Mandal state that it is estimated that 71% of companies believe that cloud computing is a real technology option. 70% hold that it would make their business flexible, 62% think that it would help them react quickly to market conditions and 65% feel it would help increase focus on core business (Misra & Mandal, 2009).

According to Ross, Randolph and Westerfield, the most important job of a financial manager is to create value from the firm's capital, budgeting, financing and networking activities. The firm must create more cash flow than it uses. (Ross, Randolph, Westerfield, 2015.)

When a company is thinking about whether to adopt financing in their projects, be it cloud related or not, one should take in account how to justify the investment. For financial management to make wealth maximizing capital budgeting decisions, a model that will determine correctly the market value of a project's levered cash flows is required (Miles & Ezzell, 1980). Many businesses use Weighted Average Cost of Capital (WACC) to determine whether a project is a good investment. The WACC takes in account an average of all available resources. Many business finance their operation through a combination of debt (loans, leasing) and their own equity (cash, available stock). The WACC gives an average description that is easily interpretable. A company should exceed the WACC in order to make an impact, therefore the WACC is a ratio used to justify decisions.

$$Wacc = \frac{E}{V} * RE + \frac{D}{V} * RD * (1-Tc)$$

RE → cost of equity

RD → cost of debt

E → market value of the firm's equity

D → market value of the firm's debt

V → E + D = total market value of the firm's financing (equity and debt)

E/V → percentage of financing that is equity

D/V → percentage of financing that is debt

TC → corporate tax rate

Many companies publish the WACC ratio on their annual accounts. As an example, we can assume that a manufacturing company's WACC is 9%. This means that the cost of financing has a cost of 9%. The company can then compare would it be better to pay for an investment themselves, knowing the cost, or would it be better to finance the investment with a financial provider.

In order to make a comparison, the company can perform a Net Present Value (NPV) calculation. The NPV compares the Present Value of the investment against a future value. It can be said that today's value of an amount of cash is its present value. We can calculate the present value of cash at different points in the future (Hopkins, 2016). What Hopkins means by this is that is a cost of tying up 100 EUR in cash, is 10 EUR, on this basis we would need 110 EUR one year in the future to compensate for having 100 EUR today.

If the WACC for a company is 9% and a financing company can offer financing at a rate of 5%, would it add value to one to opt for financing? In order to find out a monetary benefit, we can compare the cost between the percentiles and what results it has on the interest to be paid.

If a company is acquiring licenses to enable cloud technology with an amount of 1 000 000 EUR and pay back in a period of 12 months (interest calculated with 360 days) and finance it themselves, the monetary cost would be 49 417.76 EUR.

Table	Date	Customer Pmt	Interest	Principal	1. Balance
Purchase	01.01.2018				1 000 000,00
1	01.02.2018	87 451,48	7 500,00	79 951,48	920 048,52
2	01.03.2018	87 451,48	6 900,36	80 551,12	839 497,40
3	01.04.2018	87 451,48	6 296,23	81 155,25	758 342,15
4	01.05.2018	87 451,48	5 687,57	81 763,91	676 578,24
5	01.06.2018	87 451,48	5 074,34	82 377,14	594 201,10
6	01.07.2018	87 451,48	4 456,51	82 994,97	511 206,13
7	01.08.2018	87 451,48	3 834,05	83 617,43	427 588,70
8	01.09.2018	87 451,48	3 206,92	84 244,56	343 344,14
9	01.10.2018	87 451,48	2 575,08	84 876,40	258 467,74
10	01.11.2018	87 451,48	1 938,51	85 512,97	172 954,77
11	01.12.2018	87 451,48	1 297,16	86 154,32	86 800,45
12	01.01.2019	87 451,48	651,03	86 800,45	0,00
Grand Totals		1 049 417,76	49 417,76	1 000 000,00	

Table 1. Payment schedule

If the company would then compare this rate with a rate of 5% available, the outcome would be as described in the scenario below. The NPV calculation compares the cashflow required for the 9% against the 5% and thus shows a result in terms of cost of 21 085.94 EUR. When the NPV value is positive it reflects, the savings made with the lower rate of 5%. In this case it would be justified to finance the investment rather than pay for it using own capital.

	Date	Customer Pmt	NPV	Interest	Principal	Balance
Purchase	01.01.2018					1 000 000,00
NPV	01.01.2018		21 085,94	0,00	21 085,94	978 914,06
1	01.02.2018	85 607,48		7 341,86	78 265,62	900 648,44
2	01.03.2018	85 607,48		6 754,86	78 852,62	821 795,82
3	01.04.2018	85 607,48		6 163,47	79 444,01	742 351,81
4	01.05.2018	85 607,48		5 567,64	80 039,84	662 311,97
5	01.06.2018	85 607,48		4 967,34	80 640,14	581 671,83
6	01.07.2018	85 607,48		4 362,54	81 244,94	500 426,89
7	01.08.2018	85 607,48		3 753,20	81 854,28	418 572,61
8	01.09.2018	85 607,48		3 139,29	82 468,19	336 104,42
9	01.10.2018	85 607,48		2 520,78	83 086,70	253 017,72
10	01.11.2018	85 607,48		1 897,63	83 709,85	169 307,87
11	01.12.2018	85 607,48		1 269,81	84 337,67	84 970,20
12	01.01.2019	85 607,48		637,28	84 970,20	0,00
Grand Totals		1 027 289,76	21 085,94	48 375,70	1 000 000,00	

Table 2. NPV calculation

It can be deduced that the interest cost the company is paying is being absorbed by the benefits that they gain. In the research and analysis part of this thesis, the motives of the BDM's (Business Decision Makers) are more explained. However, organizations have different needs, derived of different reasons, but it can be argued that with financing and especially with a positive NPV calculation the usage of financing can be clearly seen.

Brown, Fazzari and Petersen have concluded that In the U.S., young publicly traded firms in high-tech industries finance R&D investment almost entirely with internal or external equity (that is, cash flow or public share issues). For these firms, information problems, skewed and highly uncertain returns, and lack of collateral value likely make debt a poor substitute for equity finance. Furthermore, young high-tech firms typically exhaust internal finance and issue stock as their marginal source of funds. (Brown, Fazzari & Petersen, 2009).

One important aspect that investors, analysts and the company itself look upon, is Capex vs. Opex, and how a purchase or a Cloud transformation project might affect the company.

### 6.3 CAPEX VS. OPEX

Operating expenditure, short Opex stands for all tasks that the company does in running the day to day operations, for instance i.e. salaries, rents, sales and administrative expenses. Opex is shown on the debit side on the balance sheet.

Capital expenditure, short Capex are assets that are marked as expenditures on the balance sheet, for instance when a company makes a purchase that is related improving the company's result, i.e. new hardware, machinery, premises and so on. Capex is shown on the asset side on a balance sheet.

If a company can have expenses under Opex, usually there are benefits to be gained, and these benefits can affect how the company is being analyzed and affect different ratios that are derived from the company's financials. Capital expenses have a long lifespan, usually the value is being depreciated during the life of the asset purchased. Licenses for cloud migration or for providing employees access to shared files online, are usually depreciated during the life of the underlying contract, 36 months, which is typical.

Operating expenditures are tax deductible. Companies are being taxed on the profit that they make. Therefore, it can be stated that what expenses a company can deduct has an effect in taxation. As Opex is the result from day to day expenses, they are usually deductible on the year that the cost occurs. Usually if a company acquires laptops or software licenses they would fall under Capex, as the assets are purchased. If the company can lease these expenses, they would fall under Opex. Therefore, the company has the option to deduct the cost of the lease in taxation. It is the responsibility of every organization to draw their own conclusions around whether a purchase is considered Capex or Opex and what are the effects from an organizational point of view.

A cloud transformation project, licenses or consultation can be treated as Opex and therefore benefitting the end customer. This can be reached in various ways financing companies can structure the payment streams.

## 7 RESEARCH METHODOLOGY

This chapter explains the methods chosen for obtaining the data and how the data was used in deriving the results.

### 7.1 DATA COLLECTION

A qualitative research method was chosen for this thesis. Merriam and Tisdell describe qualitative inquiry that as focuses on meaning in context, and that it requires a data collection instrument that is sensitive to underlying meaning when gathering and interpreting data. Further they expand that qualitative researchers are interested in understanding how people interpret

their experiences, how they construct their worlds, and what meaning they attribute to their experiences (Merriam & Tisdell, 2016). The before mentioned is the approach this thesis takes, to find out based on the interviewees own experiences, how financing the cloud is experienced based on their roles and experience. The information is gathered through the writer's own experiences and interviews with key people, who work as executives and specialists within the financing industry. Research has been also gathered from publications in the field of financing.

The people interviewed work for in the IT- field in manager positions for sales and in finance and also in the finance sector as managers and in sales. The people were chosen to get a broad view not only in finance but also from the organisation whose end customers use or would possibly benefit from financing. The data for the interviews has been gathered during autumn 2017. Altogether, six people were interviewed.

### DATA ANALYSIS

In order to find out how industry specialists, experts and executives feel about the possibilities of financing in cloud transformation projects, a questionnaire was sent out and information was gathered to form a comprehensive picture and provide content how financing is perceived in real life. The questionnaire contained eleven questions that were open-ended, in order to get a comprehensive picture and eliminating the possibility for short and closed questions. The answers were obtained during September and October 2017. The sampling originally was 13 people, meticulously chosen to get a broad view, however after the questionnaire was sent out, many people had changed their positions and companies. Also the closing of a quarter may have effected the answer rate.

The interview was divided into following chapters to gain information about how financing is seen from different angles.

- 1) Current situation
- 2) Drivers
- 3) Benefits
- 4) Risks and
- 5) The Future

After the answers were received a harmonized view was gathered in order to be able to draw conclusions. The different segments of the questionnaire are opened in the chapters below together with findings.

The questionnaire can be found in the appendices.

## 8 EMPIRICAL STUDY

Microsoft made a study with PwC where they interviewed top Finnish BDM's (Business Decision Makers). According to the study, Finnish CEOs believe that technology will transform their business more than any other global trend. Digital leaders outperform their peers in every industry, and most global CEOs consider 'digital' their number one priority (Microsoft & PwC study, 2017). Furthermore, according to the same study, Prior PwC research has shown that in the last 10 years, the view businesses have on what is 'digital' has changed dramatically. Previously, most organizations considered digital as synonymous with IT, while today's view is more diverse: the concept of "digital" includes established technologies, new ways of working, innovation, decision-making and the transformation of organizational strategies and cultures.

There is a common truth that every decision a company makes, should result in maximizing the value. What is the value that financing brings when one is transferring to the Cloud? In the previous chapters I have explained the value brought by financing. To use financing and weather one has access to it, is dependent on the condition and the strategy of each commercial entity. In the long run, I believe that only gains can be achieved if financing is involved in the cloud transformation process.

The following chapters are broken down to each specific question and based on the replies a common view is concluded.

### 8.1 CURRENT SITUATION

As discussed above, many organizations already use the cloud in some way and some are in the phases of transforming some of their business or operations to the cloud. It was pivotal to find out how the current or the situation in the near future is taken into account by the experts.

#### 8.1.1 MAIN REASONS FOR USING THE CLOUD

The responders, later industry experts, concluded, when asked what is in their view the main reason for an organization to use cloud based technologies, the following key points emerged that are opened below.

Security was seen as an important feature in using the cloud. Alongside security the end customer has no need to upgrade to newer versions of software if they use the cloud as the latest versions are automatically available. This occurs in savings in time and money. The cloud often offers the latest technologies as development is driven by the sheer amount of usage and expectations. Business continuity can also be taken into account. The continuity can be reinforced in case of critical failures as files and information are in the cloud.

The industry experts also saw that by utilizing the cloud the need for legacy systems is removed. A legacy system can be seen as a system that has been used for a long time and is business critical in running or performing applications. In today's environment a legacy system could be a program running in MS DOS- environment. Transforming from legacy systems can be expensive and time consuming. With adopting the cloud, the legacy systems gradually diminish over time.

The need for investing in assets diminishes as well. This also means that Capex can be reduced. The reduction according to the experts can be achieved by not investing in hardware and in staff needed to run the operations manually (monthly, running costs). The cloud also provides a pay-as-you-go model according to the experts, meaning that the organizations pay on actual consumption, rather than paying on hardware and additional costs accrued by on premise computing. Also the part of outsourcing maintenance was lifted up, leading towards an Opex model with savings. One expert made an excellent point in stating that “When tools and applications reside in the cloud, one can build interfaces and make the leverage one another → efficiency.” Cloud was seen more flexible in terms of utilization and cost.

“... by bringing everything to the cloud, we do not depend on many hardware's to drive each customer and their storage. Maintenance is centralized and cost efficient, aging of equipment is handled in a single point, leaving all customer free of that responsibility. From an environmental perspective, we reduce disposable IT waste – so the cloud is much more environmental friendly. One big warehouse to cover many small devices. A single server for storage with backup and maintenance in each little company, requires people recourses to focus on things that is not related to core business. Everything that is not core business related in a company, will eventually result in cost and reduce profitability. A fixed predictable cost of the cloud, has a very good effect on the cash flow side. No sudden extra costs.”

### 8.1.2 WORKING CAPITAL

Working capital is a continuous topic in today's business as the access to capital can be rather scarce. Also, companies that have cash are still interested in optimizing working capital, in order to use the money at hand more efficiently. The industry experts were asked that as working capital is a scarce resource in today's economic environment and hence organizations have the opportunity to optimize their working capital by adopting financing, what opportunities they see that financing could bring to an organization when cloud based technologies are being acquired. As one expert replied: “Many companies are truly interested in CAPEX vs. OPEX optimization and want to move to more OPEX based model. This might be due to balancing seasonality or net results or cash flows, or even optimizing return on capital.”



Financing can be directed to deployment and transformation costs. If the alternative is to pay upfront, meaning directly as the end customer is invoiced, financing brings several alternatives. The payment can possibly be made after the implementation which saves working capital, as the money is being used more effectively in the meantime or directed to other objectives. This brings forth a situation where the payment is following the benefit. Simply, when the investment is accruing value, i.e. revenue, the payments begin after the first values are realized.

Cash flow can be planned in a better way, often in a more visible way. The need for organizations to have predictability was also underlined. This helps in planning, knowing what to pay and when. If the organization is facing budget constraints it can be alleviated by financing, making the purchase even possible in the first place.

By spreading payments, having a peak in costs can be avoided according to the experts. The invoices can be spread to occur in the same time as other costs that the end customer is facing or move the desired costs to a better time in the fiscal to preserve cash and ensure the operations are not affected by cash shortfall.

On a more practical level, it was stated that “With financing a company can pay upfront commitment of cloud consumption, which can trigger discounts well beyond the financing costs”. Cloud can be sold through a commitment, often times an upfront commitment, meaning that a customer will commit to use a cloud with a certain amount per year. These are often invoiced on an annual basis. Instead of paying a commitment i.e. 500 000 euros upfront, the amount can be spread with a payment schedule, freeing working capital for other purposes. The end customer can still make the commitment and streamline their budget. Financing was seen to support the migration to the cloud.

“Companies with strong cash assets but operating in low margin industries can be more prone to go for e.g. five-year investment schemes and drive down OPEX as low as possible.”

“Everything that could free working capital for return friendly investments, make up as opportunities for a company. Financing and spreading of cost would not only free capital for other core investments, but align cost to income and therefor optimize the cash flow and improve key figures.”

## 8.2 DRIVERS

It was important to know how the experts themselves view the drivers that the key people in the organizations might have when thinking about financing. What aspects do they have to take into consideration when they think about financing or say, using their own cash to fund cloud related technologies? The people making decisions in organizations are often referred as business decision makers, BDM's. Often this can be referred as Treasures, Chief Technology Officers, Chief Executive Officers, IT-managers or purchasers. It is important to see how the experts view their motives and drivers in using financing or not using it. It was investigated what aspects the BDM's have to take into account and also how the aspect of using own cash versus financing is seen.

First, the fact was raised up about companies' cash status or their budget status. Does the company have cash and if they do, how do they want to use it? From budgeting perspective, it could be that a company that has cash, could still be interested in enjoying the benefits of the technology now and pay later, i.e. finance the technology acquisition. One interesting aspect of attention was that BDM's might have difficulties in grasping the ever-changing technological environment. The commitment to make such an investment in the first place is seen stronger when financing is applied. The BDM's pay attention to budget and ratios and balance sheet structure. With financing these areas are alleviated by giving better ratios and relieving stress in budgeting.

The experts also saw that the BDM's will compare the costs accrued by a financial solution, i.e. is the financing originated from a bank or other financial provider; the comparison between the organizations own internal cost of funds (lending rate) with the interest rate offered, (as discussed in chapter 5.2.) One factor to be considered if other assets are tied down, is to be able to get financing, being securities. If an organization can secure financing without securities, it's more attractive than if securities would be demanded.

“Cost of financing for sure (a driver for BDM's to use financing). Might also be reputation of the financing party and the desire to consolidate financing to established partners.”

“Often it is also the actual cost and sum to be financed. Cloud services are not the biggest cost element for many companies and they can easily be considered normal operating costs. This might change when companies utilise cloud more and more for their core operations through IOT or other digital business type of scenarios.” This can be interpreted that that pressure and the interests for moving towards a more OPEX point of view, might be an increasingly more important from the balance sheet point of view, “where financing can easily make an impact.”

One expert felt that it ties to the WACC calculation as discussed before; “BDM’s recognizes the value of spread cost and saving of working capital for return friendly investments, the value of a Financing solution could easily be calculated by a WACC analysis.”

### 8.2.1 JUSTIFYING FINANCING

Often BDM’s might not have of thought to use financing in their cloud transformation. Financing can be used as a strategic tool, as discussed before. The experts were asked how to justify financing as a strategic tool when purchasing decision is being made, to clarify their view and on value and benefits if financing is used as a strategic tool.

The main justification was pin pointed to cost alignment. Cost can be aligned with benefits of the cloud. This can be said to streamline the budget and capital can be freed for other activities. Structuring a tailor made payment schedule is a tool through which streamlining can be achieved. Payments can be deferred, i.e. financing can take place during fiscal 2017 and the customer can begin to deploy the services or licenses bought but they can have the option to pay in the beginning of the next fiscal 2018, for instance. Ramped payments were also mentioned. The costs or payments can be ramped so that as the initial investments bring value, the amount of the payments increase (payments aligned with benefits).

Financing was also seen as a tool to support or enable execution of a strategic decision. This can be interpreted that a company might not be willing or able, to make an investment if financing is not secured for them. The availability of financing could be a deal breaker for the entity making the sale. In these cases the importance of financing is highlighted. Therefore financing can also been seen as a catalyst for sales, making the underlying sale possible in the first place.

One expert pointed out that “Also, cloud cost should be directly proportional compared to the value derived from it, i.e. business does well, so cloud consumption is higher”. It was also discussed that sometimes there might be a need to show upfront revenue. “Software and service providers have traditionally required upfront payments, which is now changing. So maybe this needs to be considered from the vendors point of view and the desire to show upfront revenue? For the customer, the change is welcome and actually goes against the need for financing.”

“This would make the budgeting much easier and predictable, i.e. monthly payment or a payment plan aligned to deployment or realization of technology – the benefits are clearly related to the alignment of cost to income.”

### 8.3 BENEFITS AND STREAMLINING

It was pivotal to learn how the industry experts see the value associated with financing and what kind of values and benefits financing brings into today's organizations. The experts were asked to explain how with financing, an organization can most often streamline their cash management and optimize the budget through visibility and free working capital for other important issues, and how would they describe the value gained by being able to pay flexibly vs. a normal upfront payment, funded by the organization themselves.

The experts concluded that usually flexibility is the same as value. Often times flexibility is also a requirement. By flexibility, payment terms of different kind are usually meant. Many, or most, companies will be hit by a transition to the cloud and external financing without any securities, if possible, can ease the pain and make the customers decision easier and push it earlier, so the customer can gain from the positive effects earlier.

As discussed before, the ability to enjoy the benefits of the technology earlier and pay later is seen to be valued by the end customers. One value can be seen as to have an alternative usage of funds (freeing working capital). The next layer can be seen as the associated cost. For organizations with a weaker cash flow, liquidity planning can be seen as of value and a benefit. Furthermore, the benefit of the cloud was seen that as the upfront Capex is lower than in purchasing on premise servers. This is obviously beneficial to acquirer and finance provider. Also, cloud based business model may really be the key for the acquiring company's business model, so again a positive impact, rather than negative, for risk assessment.

#### 8.3.1 COSTS & INTEREST

Interest and different costs associated play an important part in most purchases a company makes, and this is the cornerstone of financing. The experts were asked to answer from their point of view, if and how adopting financing outweighs the interest cost associated? The idea was to find out if and how the experts view that financing brings such value that it would outweigh the cost associated, mainly interest.

The Return On Investment, ROI, was seen as an important metric from the end customers point of view. ROI measures the amount invested against the realized value of the investment. If the end customer thinks that the solution being bought will reward them in the longer run, or even the possibility to acquire the solution in the first place, will be of more value than the interest cost, then financing will be a good choice to make. Net present Value, as discussed before, was also seen as a method to prove the benefits of financing. The predictability, possibility to maximize return or output of available budgets or sources of financing were seen as components that outweigh the interest cost.

“The clearest would be that companies can spread the cost over a given period, optimise their cash flows and free up capital for other investments. But again, this also depends on the sums and significance. For companies with tighter cash positions, financing has been a very good option. Of course they might also have e.g. covenants, which limit their options to resort to external capital so it becomes a question of how financing is handled in accounting terms.” Covenants were previously discussed in chapter 3.3. Financing can be utilized and often is in no contradiction against covenants set. This is of course up to every organization to interpret themselves from their account perspective.

### 8.4 RISKS

In financing, risks and the mitigation of risks play an important role. I wanted to see how the experts that work both in financing and IT see the risk perspective, i.e. do they see any risks if financing is adopted in the acquiring cloud based technologies, either for the organization adopting finance or for the finance provider. For the organisation, it could be trickier to negotiate and discuss payments and invoicing if the cloud does not deliver as promised. Given no “poison pills” in the agreements, risks related to the financing as such should be limited as all factors should be known when entering the agreement. For the finance provider there is a risk that they don’t get their money if the solution acquired is not working and of course if the customer cannot pay. A remark was made on cloud financing and financing a subscription based product, which is that the volumes to be financed can vary, and if the volumes would be adjusted downwards, it would lead to lower income for the finance provider.

“When consumption grows, financing can actually decrease the transparency if there are insufficient upfront payments and no reporting or growing costs.”

It was also raised that a financing can be binding. If the customer enters into an agreement, it’s binding also with a transformation such as the cloud. “A payment solution is a financial arrangement, and compared to a pay as you go model – the customer is obliged to pay the monthly fee regardless of functionality and down time. This could trigger a mismatch between usage and cost, which is a risk.”

As discussed earlier, technology is changing rapidly these days and it was also seen as a risk from the end customers point of view. “I would think that the risk is around the speed of today’s innovation. If you commit to a for instance to a 5 years payment plan, it might be a risk that the tech you have bought and financed is outdated in 5 years’ time.”

#### 8.4.1 SEGMENTS AND TECHNOLOGY DEVELOPMENT

The experts were asked if there are there any certain segments or organization types that would specifically benefit from financing, or is financing suitable more or less to all segments and organization types. I think this is an important topic, as company size and needs plus the ability to make profits are often in discussions in the financial industry.

The majority saw financing benefiting all organization types regardless of segments, while small enterprises were also seen beneficiaries especially if they have strict budgetary constraints. Segment, being a reference to a small and medium sized company to a large company mainly. Companies that have low margins were also seen as ones benefitting from financing, such as retailers, electronics, where optimization of all possible factors is a must. Companies that have seasonal variations, and resources were also in this category. Financing was seen as a strong tool to bridge challenging times into better ones.

Technology develops constantly and with a high pace today. Sometimes it might be cumbersome for the financier to get a grasp of the technology and understand the content of what is to be financed. The experts were asked if they view this as a relevant risk and if so, how possibly could it be solved. The risk was seen as a relevant one. The financier should always strive to be on top of what has been agreed and what is it that is being financed. But it does pose a risk if all the information needed is not thoroughly gathered. Lack of knowledge was seen as the biggest risk.

“Companies with tight cash budgets and currently low margins so that they can balance the cash flows and results. These can be e.g. manufacturing companies in certain commodity type of industries or high volume labour intensive scenarios such as some traditional retail companies. I would say this is mostly related to the usage itself. What is the potential variance in usage and the operation where technology is used.”

#### 8.5 FUTURE

The final question was around the future and the experts were asked if in their opinion financing drives cloud transformation forward, in means of making the transformation more possible in the first place. It was concluded that financing in their opinion does indeed drive the transformation forward and at least is in the position to be a strong catalyst. The point of financing being a strength can only be made in organizations that are aware of the possibilities that financing brings.

“Some companies might need a bit of a push to commit to building new scenarios and take full advantage of cloud. Here, financing can play a role and make the commitments less daunting.”

## 9 CONCLUDING ANALYSIS AND CONCLUSIONS

This thesis aims to bring forward possible positive outcomes of adopting financing when an organization or a business decision maker is outweighing weather to use financing or not on a cloud transformation project or when buying licenses, and to make them aware that financing can be used in this context as well. In short, this thesis gives advice on the benefits financing and for a company or an organization about to undergo the transformation and seeking value created by financing.

A group of both financing and IT- experts were chosen to share their opinions on financing. The concluding remarks were extremely positive towards financing as a strategic tool and an approach that delivers value to the end customers. Financing was seen as an instrument that helps to move from Capex to Opex and help the end customers in adopting new technology faster while balancing budget and Working Capital Management.

Whilst the thesis shows financing of cloud transformation in a positive light, based on the values, benefits and the interviews, it is still healthy to keep in mind the basics of financing. Financing is based on trust. The traditional underwriting process and sound and healthy judgement of corporate customers are still the foundation of a balanced and a healthy portfolio. The underwriter processes and risk functions from the financing provider should be aligned so that the risk appetite is balanced with trust and the ROI from the financing company's point of view. Today the trust element might be lacking as we are seeing the boom of start-up companies who do not have the history and therefore could be treated differently as an entity who has a track record of fiscals behind. It is up to each financial provider to determine their own approach to sound conduct, now and in the future.

The cloud is here to stay. In this time of connectivity and new ways of working, it's a component that we might only recognize if it is not there. The majority of consumer information, entertainment, office applications and IoT will be on cloud in the forthcoming times. The way to get up to clouds still needs to be financed. This is done by the companies themselves or by utilizing financing provided to them. Everything has a cost and weather that cost can be diminished or alleviated might play an important part in a company's operations and how the business is handled. Financing for sure is one of the factors that will pave a way up to the clouds and even more, help to adopt new technologies faster.

As described earlier the market of the cloud and the monetary value that moves in cloud related business is huge. With IoT based solutions the performance of a race car can be analysed in detail and the applications run through cloud based technologies giving accurate and never before seen analytics. Cloud brings us new ways of handling data and improving performance. No matter if it is a race car or a company. Whilst it is a fact that financing has a cost and this cost can be seen as a hinderance, if it is being seen purely as a cost. Instead of just a cost based view, I would like to shift the focus from cost to value. The cost associated can be outweighed with

the value gained. The value of using the cash in a smarter and more effective way, making the business able to develop and utilize the cash for other important areas.

From a financing providers point of view, the fact that matters the most is the performance of the end customer, weather there is trust to facilitate the financing to the end customer. Also, a deep understanding of technology is needed. Banks with a high loan structure specialize in a specific loan category, and this may imply a low level of risk due to a learning-by-doing mechanism. However, a high degree in loan specialization generally implies a low degree of asset diversification, which is a primary reason for bank failures (Delis, Hasan, Tsionas, 2015).

The ones who can bare risk and make decisions to finance the cloud have immense opportunities. From financing point of view, the cloud is an intangible product or service that has no residual values or risks of failure or breakage. The needs of the customers are derived out of the development in technology. It might be hard to know what the business needs of the end customers are in the future and therefore it might be hard to grasp how financing will be able to align to the changes in technology.



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## APPENDIX 1: INTERVIEW QUESTIONS

### CURRENT SITUATION

1. It seems that currently or in the near future, the majority of organizations will be using the cloud one way or the other. In your view, what is the main reason for an organization to use cloud based technologies?
2. Working capital is a scarce resource in today's economic environment. Organizations have the opportunity to optimize their working capital by adopting financing. Based on your experiences, what opportunities do you see that financing could bring to an organization when cloud based technologies are being acquired?

### DRIVERS

3. If possible, what would you say are the key concerns of Business decisions makers when financing is considered? What aspects do they have to take into consideration when they think about financing or say, using their own cash to fund cloud related technologies?
4. Many business decision makers (BDM's) have not used / thought to use financing as a strategic tool when moving to the cloud. In our opinion, what value and benefits would you say a BDM gains when financing is opted? I.e. how to justify financing as a strategic tool when purchasing decision is being made.

### BENEFITS

5. With financing, an organization can most often streamline their cash management and optimize the budget through visibility and free working capital for other important issues. If you think about today's organizations and their needs, how would you describe the value gained by being able to pay flexibly vs. a normal upfront payment, funded by the organization themselves?
6. By adopting financing, it's rather clear that there is a cost associated, being interest. Could you describe in your opinion, if and how, adopting financing outweighs the interest cost associated?

### RISKS

7. Do you see any risks if financing is adopted in the acquiring cloud based technologies? Either for the organization adopting finance or for the finance provider.
8. Are there any certain segments or organization types that would specifically benefit for financing? Or is financing suitable more or less to all segments and organization types?

9. Technology develops constantly and with a high pace today. Sometimes it might be cumbersome for the financier to get a grasp of the technology and understand the content of what is to be financed. Could you describe this as a relevant risk and if so, how possibly could it be solved?

#### THE FUTURE

10. How do you see the future of financing cloud based technologies? Where it is headed, or how the needs might change (for the organization using financing or the financing provider)
11. In your opinion, would you say that financing drives cloud transformation forward, in means of making the transformation more possible?