

# Cloud Strategies

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## **Abstract**

With the hype surrounding cloud based services reaching new heights, more and more companies are considering a transition into the cloud based market. However, the lack of a proper business strategy can decisively restrict the opportunity for success in the cloud.

# 1 Overview

## 1.1 Introduction

Goutas et al. [3] have determined seven crucial building blocks as the pillars of a cloud strategy. These building blocks play a crucial part in deciding which type of strategy a firm should assume when transitioning into the cloud, and thus heavily influence related business decisions.

## 1.2 Structure

We start by considering some of the *pros and cons of cloud based services* in section 2.

In section 3 we introduced and explained the *Strategic Posture* and the *Design Chapter*. Those two parts are the components of a digital business strategy.

The three major types of strategies are discussed in section 4.

Section 5 summarizes the findings of three real-world examples, then conclusions are drawn in section 6.

# 2 Cloud Computing: SaaS

Software as a service (SaaS) has turned out to be the most successful form of providing services through the cloud. [3]

In the following chapters we are going to talk about the benefits and the still existing challenges of this cloud computing model.

## 2.1 Advantages

One of the advantages of the SaaS model is that it offers special IT infrastructures and developing applications to their client machines. This is why this model doesn't have problems with the traditional low-level task. That means that providers can focus on the growing of their business, their innovations and the creating of business values. [3]

Other benefits of cloud computing are the so called "seven capabilities". These advantages are a controlled interface, a virtual business environment, increased addressability, and rapid elasticity and scalability. [1]

## 2.2 Challenges

The benefits mentioned above should guarantee a well working cloud computer model. In reality most promised advantages doesn't work correctly this means the strategies to improve cloud computing lead to many failures.

The main problem is if firms want to offer their clients all the promised benefits they need a kind of a business manager who better understand the fundamental components of a successful cloud-based SaaS strategy. This is why a well working

cloud strategy should summarise their key elements in a broader digital business strategy

### 3 Digital Business Strategy

Before evaluating the building blocks of cloud strategies in particular, it is useful to define some of the essential pillars of a digital business strategy in general.

In the next chapters we are going to describe the components of Digital Business Strategy and afterwards we talk about Cloud Computing Strategies in detail.

#### 3.1 Strategic Posture

We start by considering a firm's digital strategic posture, which describes how much a firm's strategy converges on the industry norm [4]. This degree of conformity is directly dependant on the environment a firm operates in. A possible way of describing such an environment is through three industry characteristics: *turbulence*, *concentration* and *growth* [4].

Industry turbulence measures how quickly firms enter and leave an industry. A high turbulence describes a constant change of competing firms in an industry. On the other hand, concentration measures the quantity of competitors, while industry growth equals the rise in demand for the industry's products.

We are now able to define the relation between digital strategic posture and industry characteristics. In an environment with high turbulence, low concentration and low growth, a firm is less likely to converge on the norm. Since there is a limited number of competitors that quickly enter and leave the industry, the industry norm is not established enough to promise success. However, when there is low turbulence, high concentration and high growth, firms are usually more likely to converge on the norm, since its environment is stable and healthy [3].

#### 3.2 Design Capital

In addition to a firm's strategic posture, which describes how its behaviour is influenced by external factors, internal factors can also be considered as a component of digital business strategies [3]. Woodard et al. [2] have defined such a component in relation to a firm's design capital, which equals its internal systems and processes. Two major internal factors are considered: *option value* and *technical dept*. In broad terms, option value is the degree to which a firm can explore opportunities and new design ideas based on the efficiency of its internal infrastructure. Technical dept is the cost and effort these exploratory activities cause. A firm's business decisions should aim to enhance its design capital towards the ideal state of high option value and low technical dept, allowing the firm to explore options and react to innovations by competitors efficiently [2].

### 3.3 Components of a Cloud Strategy

When considering cloud strategies, the previously defined framework for digital business strategy has great significance, due to the fact that every cloud strategy is embedded in a broader digital business strategy [3].

Moreover, the cloud adds another dimension in the form of user preferences. Due to the centralized nature of cloud-hosted applications, a cloud strategy must account for the user's requirements, mainly in terms of *security* and *customizability*. [3].

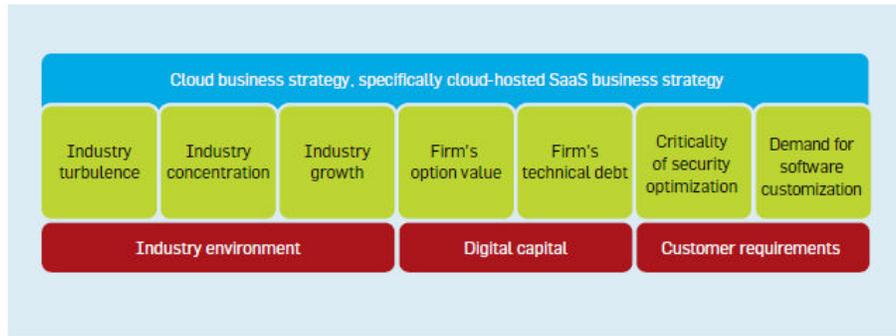


Figure 1: Components of Cloud Strategy (Source: L. Goutas, J. Sutanto, H. Aldarbesti; „*The Building Blocks of a Cloud Strategy: Evidence from Three SaaS Providers* “; Communications of the ACM; Vol. 1; 2016; 90-97)

## 4 Types of Strategies

In order to utilize the cloud to compete in their industries, firms usually choose one of three major strategy types after evaluating industry characteristics, their own internal design capital and the preferences of their users [3].

### 4.1 Innovating Strategies

Innovating cloud strategies merge influences from multiple areas of interest, fusing previously unrelated systems and processes in order to gain a competitive advantage. Transitioning into the cloud benefits such extensions and transformations [3].

### 4.2 Disrupting Strategies

Rather than merging existing elements of an industry, firms adopting a disruptive strategy seek to create new value chains altogether, meaning they are willing to make radical business decisions to create new revenue streams. By

showing customers new products they did not know they needed, these firms are willing to take a risk in order to create bigger potential for profit [3].

### 4.3 Optimizing Strategies

Optimizers do not change or extend their ecosystem, but strive to improve their existing revenue streams instead. Using the cloud, they are able to enhance the products and services they offer, while maintaining a relatively low risk [3].

## 5 Examples

Goutas et al. apply this framework for choosing an appropriate cloud strategy to three companies of different backgrounds on the verge of entering the cloud based market. All firms are located in the same European country.[3]

### 5.1 EX 1: Major telecommunications provider

The telecommunication industry is characterized by a high degree of industry turbulence, a high industry concentration and a high industry growth. [3]

For the IaaS model the industry would have to spend a lot of money. The Firm 1 as a dept-constrained firm can abundant its resources and can reduce its dept. This is why it decides to invest in developing in a own cloud strategy.

The security of data is very important in the telecommunication industry. This is why the firm should decide to use a form of SaaS-based clouding. The data of Firm 1 doesn't leave the country and the Saas-based products will be hosted locally by Firm 1 itself. [3]

As it turned out in the end Firm 1 decided to offer SaaS to business customers. This new position as SaaS provider will enable them to enjoy all benefits of multiple clouding. [3]

### 5.2 EX 2: Engineering-simulation-software provider

Firm 2 is a small provider of engineering simulation software specializing in computational fluid dynamics and multiphase flow heat transfers. Its software is sold globally and used mainly by research organization and companies in the oil and gas industry, nuclear engineering, renewable energies, microfluidics, and advanced material science. [3] The problem of these firms is that the programs need much computing power and only a few clients have the necessary computational resources.

There is a lot of competition in this already small market of engineering simulation software providers. This business is dominated by two large companies. This is why Firm 2 also offers a consultancy service to pay its bills. Unfortunately this service is very labor intensive. This problem could be solved with the cooperation with a local university.

Since the engineering data is not sensitive and the simulation process need not

be performed in a highly secure environment, the cloud-hosted SaaS solution seems to be a viable way for Firm 2 to compete with the dominant players in the current market and help increase its market share.[3]

Furthermore Firm 2 wants to offer a web-based cloud-computing hosted service. That means that clients can use their companies' own computational resource to run the software and test it for free.

Currently Firm 2 is working with a cloud broker and a cloud infrastructure provider to implement its cloud-based solution which is explained above.

### **5.3 EX 3: CRM software provider**

In the third example, a mid-sized firm specializing in customer relationship management (CRM) is considered. The CRM industry is characterized by low turbulence, high concentration and high growth. As discussed in section 3, firms in such an environment are most likely to converge on the norm. This is the case for Firm 3 as well, who (like most CRM firms) are planning to offer a SaaS alternative to the on-premises version of their software [3].

However, due to high technical dept, the firm would not be able to cover the financial loss in case of failure. Recognizing the risk, Firm 3 opted for an optimizing strategy, expanding their software with a private SaaS version for their clients. This private SaaS version allowed for improved security optimization, a high priority for CRM software providers, as well as increased customize-ability [3].

## **6 Conclusion**

Goutas et al. [3] have developed an extensive framework for analyzing digital business strategies applied by firms hosting software in the cloud. At the heart of this framework lies the decomposition of the reasons behind the strategy into seven components, or building blocks. The first three blocks (industry turbulence, industry concentration and industry growth) describe industry characteristics and their relation to strategic posture. The next two blocks are major internal factors of a firm (option value and technical dept). Customer requirements make up the remaining two blocks (security optimization and software customization).

Empirical data collected through case studies show relations between the building blocks and different types of strategies. Firms looking to offer their services through the cloud can consult these relations in order to choose an appropriate strategy [3].

## References

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