

INVEST IN  
**SOFTWARE**  
COMPANIES



**HOW TO ASSESS  
SOFTWARE-AS-A-  
SERVICE COMPANIES**

# Topics

- What does SaaS mean?
- Why does it matter?
- How to interpret the metrics commonly associated with SaaS companies?

**This report aims to give a framework for assessing SaaS companies and foster an understanding of this business model.**

# **CONTENT**

- 1.** The convenience of subscription-based services and why businesses & consumers love them
- 2.** Startup investors like SaaS because of its characteristics
- 3.** Analyzing the key performance indicators of a SaaS startup

# 1. **THE CONVENIENCE OF SUBSCRIPTION-BASED SERVICES AND WHY BUSINESSES & CONSUMERS LOVE THEM**

It's miraculous how fast owning things has gone out of fashion. Depending on when you were born, you might still remember buying films on VHS cassettes and music on vinyl. Today you have a subscription to Netflix and Spotify, and less clutter around the home. Likewise, companies used to buy expensive software on disks, which necessitated regular updates. Today they might use Slack, Salesforce, Zoom, and many more, all of them based on subscriptions. As fast internet connections have become ubiquitous, software has changed from being packaged in a box and installed physically in an office to being hosted in the cloud and made available over the internet via a web browser, now called software-as-a-service (SaaS).

The rise of the SaaS model coincides with the spread of broadband internet - Salesforce, one of the first SaaS companies, (a Customer Relationship Management company with USD 17 billion of revenues) was founded in 1999. Quoting tech blogger Ben Thompson, "the key economic change introduced by the Internet is the effective elimination of marginal distribution and transaction costs."

This means that for the first time, the internet allows young companies to start without having to invest in large distribution networks (word of mouth and online advertising are cheap) and without having to spend money on a large sales department or physical product distribution. Platforms like cloud computing and out-of-the-box payment providers allow small startup teams to spend their time on actually building products without needing to invest in a lot of superfluous infrastructure.

**Software-as-a-Service has become a very successful business model over the past two decades.**

**According to Crunchbase, there are over 15'000 SaaS companies worldwide. In 2019, SaaS companies achieved USD 100 billion of revenues, according to Gartner, and this number is on track to surpass USD 150 billion in 2020.**

If you include the part of the revenues that big companies such as Microsoft make with their SaaS products (Office 365 and LinkedIn, in this case), the numbers are considerably higher. Business-to-business SaaS companies have made inroads into customer relation management, human resources, enterprise resource planning, collaboration, procurement, and many more functions.

The reasons why customers shell out are basic but convincing: Since SaaS applications usually reside in the cloud, they are instantly available and always up to date. But the key benefit of this business model is simple: The SaaS model aligns the business model of the startup with the value creation for its clients.

Users only pay for what they use, they pay more for features only when they need them, and there usually are no barriers to get started with a SaaS solution.

Subscriptions are calculated per user or usage/data volume and easy to try out with a small team before rolling out across the company. Some SaaS companies offer free trials or stripped-down versions with the same effect. Since the software is hosted in the cloud, user data can be easily collected, and the reaction to new features measured easily. Last but not least, these apps often integrate easily into other apps.

But there are challenges as well. The setup regularly leads to headaches for data protection experts. It also creates a reliance on stable internet access as well as the software vendor, and the more the software in question is interwoven with essential business processes, the more acute are these concerns. Adobe, the maker of design software such as Photoshop, is a case in point. When the company moved from boxed software to a SaaS model in 2012, it proposed a transition period of 5 years, and was still petitioned by 30'000 users to abandon their plan.

Nonetheless, SaaS as a business model is now firmly established. There are now more than a handful of SaaS companies that have annual recurring revenues of over USD 1 billion and market capitalizations to match: The Canadian e-commerce platform for online stores and retail point-of-sale systems Shopify, for example, has a market capitalization of USD 117 billion and annual recurring revenue of 1.6 billion (as estimated by SaaSr, a consultancy).

## 2. **STARTUP INVESTORS LIKE SAAS BECAUSE OF ITS CHARACTERISTICS**

Investors like SaaS companies because their subscription fees, which recur every month or year, makes the revenues predictable (how predictable will be discussed below). Well-run SaaS companies are also inherently scalable, as the cost of serving each customer goes down as SaaS companies grow. They offer juicy margins (with gross margins in the region of 80%-90%) and impressive growth; The average revenue growth rate of the BVP Nasdaq Emerging Cloud Index (which includes names such as Adobe, Slack and Zoom) is 35% per year. Investors have done well, as the listed SaaS equities have outperformed the larger indices quite spectacularly over time (see chart below).

Another prominent feature of SaaS companies is that their business model has torn down the barriers to entry into the software market. Distribution, for example, requires only a web browser to access and use the application.

This has created manifold opportunities for startup investors who want to capture the value these companies create before they become investable to a bigger public after an IPO (or get bought even before that).

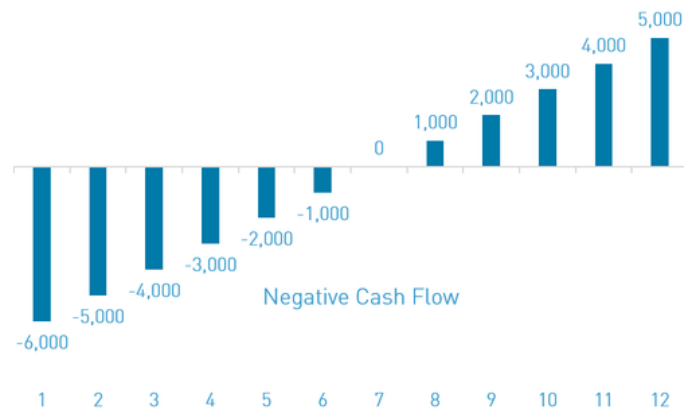
In Europe alone, investment in SaaS startups grew healthily from USD 2 billion to USD 5 billion from 2016 to 2019, according to venture capital firm Accel.

### Comparison BVP Nasdaq Emerging Cloud Index (Listed SaaS) vs. Large Indices

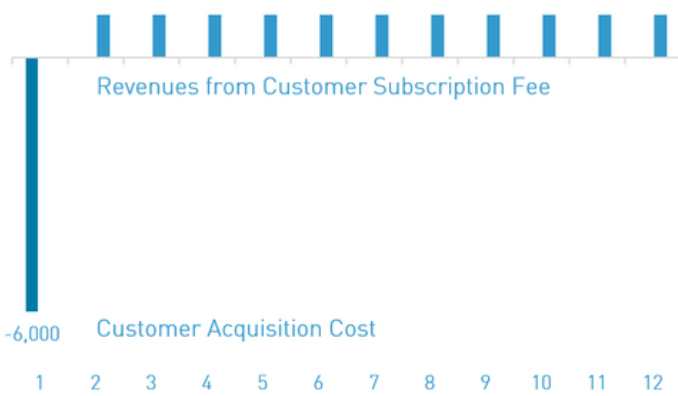


With a plethora of SaaS solutions already out there, startups need to be noticed to attract new clients. This means they have to spend money on marketing and sales. The startup incurs the cost associated with these functions before the customer starts paying a subscription fee. And if the startup seeks to sell to businesses, the sales cycles can be long. From a cash flow perspective, this is equal to negative cash flow for every single customer, which turns positive only after a certain amount of time.

Cumulative Cash Flow - Single Customer



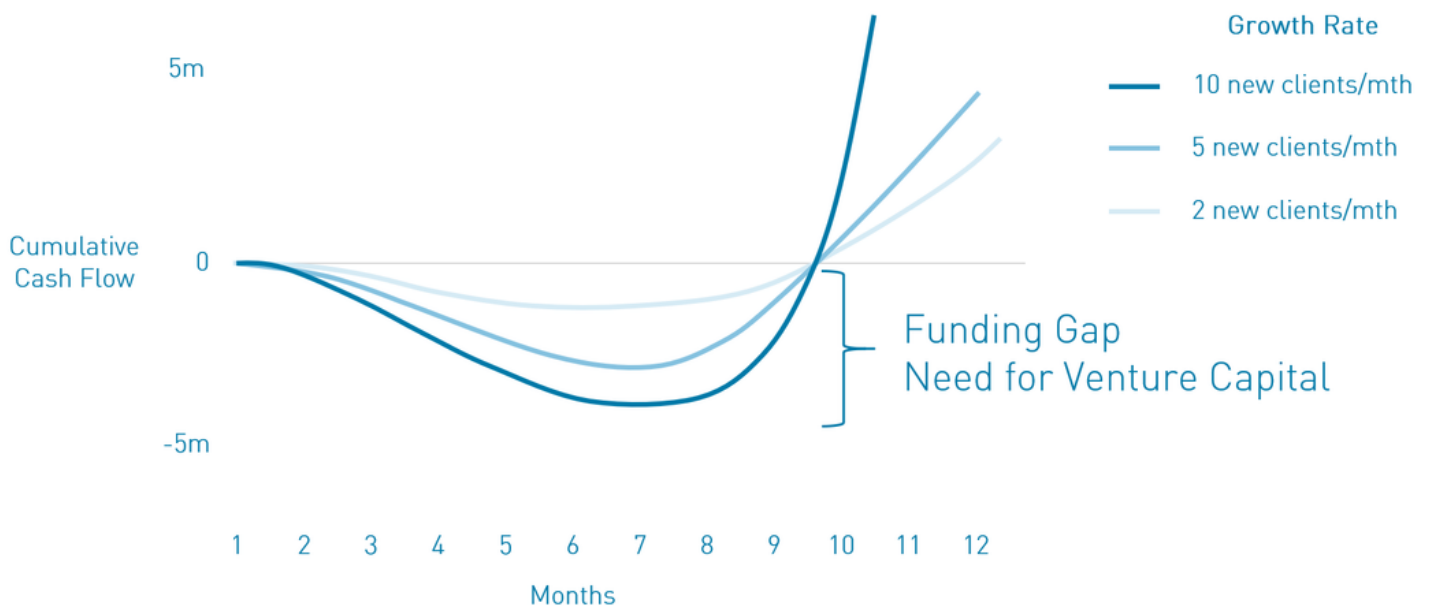
Single Customer Cash Flow



Now, since these companies usually want to grow aggressively and increase their market share rapidly, they spend a lot of money in order to gain new customers. This, in turn, means that the temporary cash-flow hole they dig will be bigger the faster they want to grow (see below).

Venture capital firms step in to pre-finance this funding gap and they do so in view of the hockey stick-like growth in revenues that is expected to manifest later. This explains why SaaS startups and venture capital are a very good match.

Impact of Faster Growth on P&L/Cash Flow of SaaS Startups



# 3. ANALYZING THE KEY PERFORMANCE INDICATORS OF A SAAS STARTUP

The most important metrics to gauge the sustainability of SaaS companies revolve around the questions of how hard it is to gain new customers, and how much these customers will be worth. These metrics are but one element when looking at a startup, and investment decisions should be based on a complete picture that also includes the team and its strengths, market size, traction and milestones achieved, the competitive landscape etc.

## **ARR (annual recurring revenue)**

is a central measure of how much recurring revenue can be expected per year. If billing happens monthly,  $ARR=12 \times MRR$  (monthly recurring revenue).

If subscriptions are contracted over longer periods of time, say, 2 or 3 years, the contract value is divided by the number of years to reach ARR. ARR is a forward-looking metric. As a company adds new clients and sells additional services to existing clients, it has an immediate impact on the ARR. If a SaaS startup makes subscription revenues of 1k in January and 10k in February, the ARR is 120k (12x10k).

## **Customer Acquisition Cost (CAC)**

This number tells you how much a company spends on acquiring customers and is expressed as the cost to gain a single customer. It is calculated as the total of all marketing and sales activities needed to motivate a customer for a purchase, divided by the number of new customers.

## **Customer Lifetime Value (CLV)**

This number indicates the revenues of a single customer during the time they use the product. There are several ways to calculate the CLV. If, on average, customers will stay loyal to the product for 5 years, and the subscription price is USD 100 per year, the customer lifetime value is USD 500. The problem is that maybe that product hasn't been that long on the market and you need to calculate the average life time of a customer based on other information you have at hand. One information that is available is the number of customers that do not renew their subscription. This is called churn rate. If customers spend USD 100 on average per year, and 20% of them cancel every year, the CLV is USD 500 on average ( $100/0.2$ ).



# **QUESTIONS TO ASK WHILE ANALYZING CLV**

**How many customers does the company have? What kind of customers? What is the customer segmentation by size, industry and geography - is it a concentrated or a diversified customer base?**

Segmentation matters when you are trying to ascertain how “stable” and predictable the company’s business is - you might have one very big client, but if something goes wrong, your ARR suddenly disappears from one month to the next. This is why most successful SaaS companies have a very broad client base (or secure their big clients with long-term or prepaid contracts).

**How does the company acquire new customers, and how easy is it to onboard new customers? Is that approach scalable?**

Especially for early-stage companies it is important to see where existing customers came from. Are these all based on the personal network of the founding team or have they acquired customers to whom they do not have a personal connection?

**What does the sales pipeline look like? How efficient is the sales team at closing sales (which is measured by the conversion rate, which indicates how many qualified leads are converted into actual sales).**

**How long are the sales cycles? Who is doing the sales, is there an established sales team and how experienced are its members?**

Especially in the B2B segment sales cycles can be long and therefore a large pipeline that is systematically processed is key. It is also important to see who is in charge of sales. Is the CEO effectively leading sales or is there a dedicated team in place? Assessing the quality of the sales team and the incentives that drive them is worth taking a closer look at.

# **QUESTIONS TO ASK WHILE ANALYZING CLV**

**Is the sales strategy based on direct, indirect sales (working with distributors or re-vendors) or self-service?**

A lot of companies claim that inbound leads can convert with minimal effort, however actually getting this right is extremely hard. Has the company proven that they can actually pull this off? Working with distributors can be a viable option but it is important to understand how (and if) the distributors' sales teams will push the solution and how it fits in their overall offering (is it a key feature or just one on a list of many). It is key to see what the company has achieved instead of just relying on what they plan to do.

**What is the average revenue per customer and how does that impact the clients budget? What is the average contract length? Can the CLV be increased over time, and can the CAC be decreased?**

**What level of customer support is necessary to ensure customers are satisfied? What are the reasons why customers leave? How can churn be avoided?**

**Can the company handle significant growth in its user base?**

Obviously an investor is looking for rapid growth, but "going viral" can also mean that your single support person suddenly is being overrun with hundreds of questions everyday, or that your servers simply cannot handle the traffic.

## Relationship between CAC and CLV

Those two metrics, CAC and CLV, have to show a healthy balance. If it costs more, on average, to attract new customers than what they're worth ( $CAC > CLV$ ), the company is in big trouble. CLV needs to be significantly higher than CAC to allow for a healthy development. As a rule of thumb, CLV should be at least 3 times higher than CAC. If the ratio is very high, however, say, 10:1, this might indicate that the company is not spending enough to acquire new customers and that it could grow even faster by doing more.

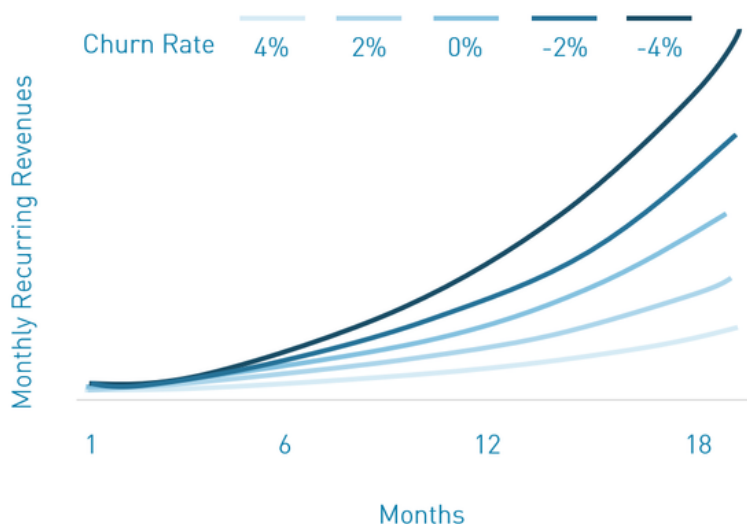
Payback time indicates how long it takes for a company to recover its spending on acquiring new customers. As a rule of thumb, it should be below 12 months.

Churn is the proportion of customers that leave and essentially a measure of dissatisfaction. Reasons for churn include the lack of perceived value or better offers from competitors. Churn is also a metric that is easy to underestimate.

**The difference between losing “just” 4% of customers or expanding the revenue from existing customers by 4% (negative churn) doesn't sound like a huge difference, but over time it will make one.**

As the illustration below shows, this can mean that only after 2 years, the MRR for these two cases will be several times apart. High churn means that the company must spend more money and energy to compensate for lost customers. Negative churn leads to impressive hockey stick-like growth, and means that with constant sales efforts, the MRR will still grow more than in a linear way.

## Churn's impact on revenue growth



**i** Revenue churn rate is the rate of lost revenues due to lost customers or decreased subscription plans

**i** A negative revenue churn rate means that instead of losing customers, the company is managing to generate more revenues from its existing customers

As a general rule, the churn rates of consumer-facing startups will be much higher than those with a B2B business model (but CAC should also be substantially lower for a consumer audience). To be fair, an elevated churn rate at an early stage of a startup shouldn't be overinterpreted either, as the company might not have found its perfect product-market fit - as long as you're not yet spending millions of investor money on marketing this can be fine.

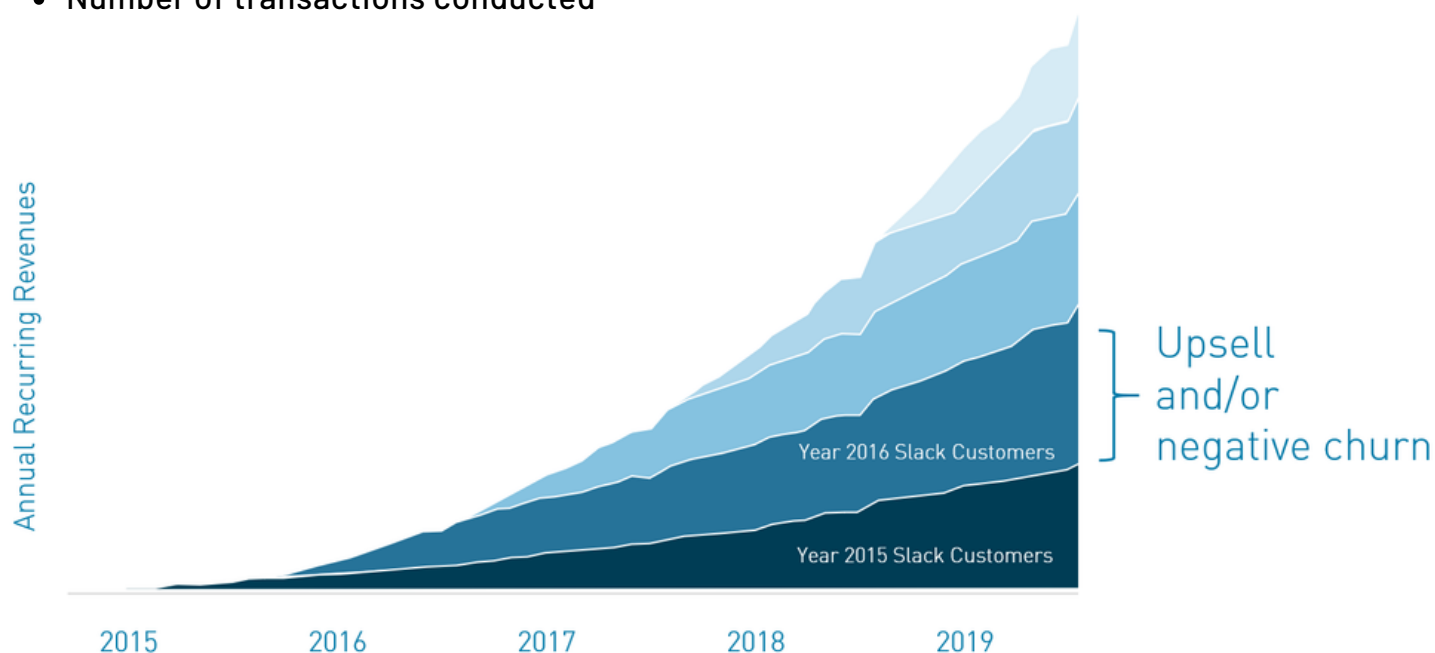
Churn is obviously a backward-looking figure. To gauge the future development of the churn rate, we look at indicators that center around user engagement. If a customer or their employees are not using a software to its full potential, this customer is more likely to churn than others.

Typical churn indicators for an early-stage company are:

- Number of monthly/weekly/daily active users
- Account activation rate (how many employees of a corporate customer have activated their account)
- Amount of data uploaded/downloaded
- Number of transactions conducted

### The magic of negative churn & upselling

The following chart depicting Slack's ARR development shows how the yearly cohorts grow over time. By winning new clients each year and growing the ARR per yearly cohort Slack was able to achieve hockey-stick growth, what every venture investor dreams of. Selling more to existing customers is nearly always more efficient than acquiring new customers. The upselling can be to new teams inside the client companies that start to use the software, subsidiaries in other countries, or upgrading a company to a more expensive "Pro" or "Enterprise" license. This "land and expand" strategy has worked very well for several startups we have financed, and the upsell potential that large enterprise clients represent is often several times as large as the current ARR. You might have to work very hard to sell to the first company department or country subsidiary, but then expanding to more departments or geographies within the same company will be much easier.



## Beware of the KPI jungle

To sum it up, SaaS startups lend themselves more easily to an analysis based on numbers than others, and they typically are textbook examples of companies with a financing gap that venture capitalists are eager to fill. There are tons of metrics that are touted as essential and the discussions about which are more important than others fill countless web pages. In this report, we aimed at a lean introduction into the topic that focuses on the KPIs that have been key in our assessment of hundreds of SaaS startups that we have reviewed over the years. It is important to state again that these metrics are just one important factor when looking at a startup and it should be by no means the only one. Ultimately, these metrics are expressions of market dynamics, the usefulness of a software and the quality and drive of the people that build and sell it.

**Verve Ventures has given its investors access to many SaaS companies. Examples include Beekeeper, Sherpany, and Cognism.**

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