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# The Value of a User for Codacy



**C O D A C Y**

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## Abstract

This research was developed in straight collaboration with the Portuguese startup Codacy with the purpose of valuing the different types of users by defining metrics for each segment created. The users were segmented according to their subscription plan — Cloud and Enterprise, Monthly Recurring Revenue (MRR) - Small, Medium and Big Accounts and subscription length - Monthly and Yearly. The main conclusion is that medium and big accounts are the main growth drivers. Furthermore, those metrics also provide powerful insights by enabling Codacy to be more data-driven across departments especially approaching Product Market Fit.

**Keywords:** SaaS, Lifetime Value of a Customer (LTV), Cost of Acquisition (CAC), Retention Rate

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# Introduction

## Software-as-a-Service Industry

Software-as-a-Service (SaaS) usually describes a software company distribution model in which applications are offered through a license on a subscription basis (monthly or yearly frequency) that is hosted centrally on a cloud service. The inception of this alternative of offering a software arises in the late 90s with a handful of major players such as Salesforce and NetSuite, taking the lead.

In the traditional software business, companies do most of their profits by selling a perpetual license for a software and selling add-ons of the new features. In this model, the client pays an upfront value for the license plus a recurring annual maintenance fee to cover new upgrades. At the end of last decade, several players realized that the market was looking for a new service where only the features used by the clients are charged with frequent upgrades, more friendly interfaces, and simultaneously, with higher security privacy and data protection standards. Salesforce was the first tech company addressing this new market by offering a platform of Customer Relationship Model (CRM) that is still nowadays the market leader and considered by younger companies a case study on how to create a successful SaaS business.

Among the advantages of this type of services is the time spent on installation – since the service is hosted on a cloud, there is no need to install or download neither the software nor any updates – everything is done naturally without the client perception. This type of software delivery also offers the possibility to small and medium businesses (SMB) to use a service that they would never use as the high prices of a traditional software one time fee reduces drastically the added value for those companies. As result of the wide use of SaaS in different industries with different sizes and backgrounds, opportunities for integration between services started to

emerge in the market. Nowadays, companies like Hubspot grant users the possibility to integrate their software with services from third companies as for example Zendesk (customer support), allowing companies to have in the same place all the deals, with the intention to provide customer support to those users.

One of the major drawbacks of the SaaS industry is the lack of control by the users over the software that they are using since their data is hosted in a cloud service provided by a third company provider as for example AWS or Azure. Even so, this downside was used by the market to create a new market — on-premises software — where the software is hosted on their client' servers. The license prices are higher in order to overcome the fact that the client has access to the code.

## **Introduction to Codacy**

Codacy is a Portuguese startup that operates a SaaS model offering a platform that carries automatic code reviewing for developers enabling them to ship their products faster. On average, each developer spends 20% of the time reviewing code and 45% correcting bugs and managing technical debt (when code is written to be easy to implement in the short term but it is not optimized to support future changes to the product which will require more time to fix it in the long run). Currently, the company offers two plans – Cloud and Enterprise (on premises). In the Cloud plan, the clients pay a subscription (\$18 per month, \$15 for the annual plan) which gives access to all the features available and for all the languages supported. In the Enterprise plan the price is not public and depends on several aspects.

As stated before, for security and privacy reasons some companies do not want to host their data on a third company provider. Codacy, as most of the SaaS companies, offers the possibility of hosting the software on the clients' servers for a higher price and a customized

service. Codacy offers as well an open source service working as a freemium model — the users do not pay to use the service. In 2014, Codacy was the winner of the Web Summit pitch competition, which further enabled its growth from 300 cities and less than 3,000 users to more than 6,000 cities and 60,000 users today.

## **Statement of the Problem**

Codacy secured three rounds of financing — two seed rounds and the most recent Series A for a total of 6.7 million dollars. In the last round, the series was lead by EQT Ventures — the european venture capital, and participation of Armilar Venture Partners, Caixa Capital and Faber Ventures. Today, Codacy has a product in the market, however, as most of the companies that raise a Series A, the Product Market Fit is still not well identified, which is crucial to the future success of the company as well as critical to raise a Series B. The best way of defining Product Market Fit is given by Marc Andreessen (2017) - *“product/market fit means being in a good market with a product that can satisfy that market”*.

When the company hits the perfect Product Market Fit, the churn rate ( percentage of users that cancel or downgrade their subscription) will be negative (upgrades are higher than downgrades and cancellations) and the customer lifetime value (average gross profit from a commercial relation with a user) will be one of the drivers of future growth with a major impact on post-money valuations for a future investment round. Nonetheless, there is still a lot to be achieved before Codacy hits a Serie B milestone but taking into account the average runway (how long a company can survive if the revenue and expenses stay constant), this financing is something that should be prepared in advance to avoid shortfalls of cash. This sets the stage for the purpose of this research — understand the different users of Codacy and

their financial consequences for the company and the impact of their behaviors on the strategies implemented over time on product, marketing and sales. By the end of this paper, we should be able to answer all these points.

## Literature Review

### Value High-Growth Businesses

It is fair to say that the value of a company depends on the judgement of sellers and buyers regarding the current and future cash flows. For SaaS in particular and tech companies in general, the net present value (NPV) of the future cash flows has been reduced to a simple formula based on a multiplication of a multiple by the Annual Recurring Revenue (ARR). Among the reasons behind that is the disparity between the investment realized and the cash flows obtained, the absence of operating history and because most of the young tech companies do not make it through the early stages to succeed in the market. Consequently, it is not surprising that most of the literature available argue that the relative valuation might be more useful to value tech companies as a contrast to an intrinsic valuation.

In an intrinsic valuation, the value of the company is estimated as a function of the cash flows generated. Accordingly, *“assets with high and predictable cash flows should have higher values than assets with low and volatile cash flows”* (Damodaran A.). There are four pieces that make an intrinsic valuation conceivable: cash flows from existing assets, expected growth, discount rate and viability of when the company will become a stable growth company.

In a relative valuation, the value of a company is compared to the value assessed by the market for similar companies through a multiple. In order to do a relative valuation, a group of comparable companies needs to be identified, commonly the multiples used in SaaS

industry are related to the Annual Recurring Revenue (ARR). Aswath Damodaran mentioned on *“Intrinsic Valuation in a Relative Valuation World”* that 85% of all the equity research reports on Wall Street is based on multiples, and more than 50% of all acquisition valuations are based upon multiples. A relative valuation usually outperforms an intrinsic valuation as it reflects the perception that investors have of the market when similar companies are used, something that an intrinsic valuation cannot incorporate by simple discounting the cash flows of the company. But the key advantage of an intrinsic valuation for a tech company is the limited information required.

Tomasz Tunguz (2017) on the article *“The Narrowing of SaaS Valuations”* investigates the multiples practiced by the industry in recent history. The firm value multiples peaked in February of 2014 (7.7 times the ARR) and is around 5 times the ARR in 2017. The variance within the industry is also much narrower today – “In 2014, forward revenue multiples ranged from 1x to more than 20x”. From 2015 onwards, the maximum outlier has 10x. Tomasz Tunguz (2017) believes that the justification for the narrower of the multiples is justified by the fact that *“investors have become more sophisticated in understanding these businesses and valuing them.”* The second reason is there are fewer companies going public and the growth rates representative of the industry *“are slowing at scale”*.

Aswath Damodaran has spent part of the last years researching about the differences between valuing a tech company – where a value of a user is a key metric – and the traditional methods of valuing companies based on revenue and cash flows. Those models do not suit to a modern economy where companies are more focused on growth and accumulating users and subscribers making them stick with the company for at least enough time to compensate the resources spent on acquiring the customer. For this reason, when we think about companies like Facebook or Twitter, we measure their growth by the number of



users/visits that they have and the time that each one spends on the platform. Consequently, the valuation process is done based on a bottom-up approach starting with the number of users instead of the conventional top-down approach. On the paper *“Valuing young, startup and Growth Companies: Estimation Issues and Valuation Challenges”*(Damodaran A.) , the author reinforces this idea by saying *“The fact that young companies have limited histories, are dependent upon equity from private sources and are particularly susceptible to failure all contribute to making them more difficult to value.”*

Tim Koller, Marc Goedhart and David Wessels (1990) on the book *“Measuring and Managing the Value of Companies”* suggest that the intrinsic valuation based on discounted cash flows work well even for high-growth companies since the core principles of finance and economics are reflected in the discounted cash flow (DCF) valuation model. In their analysis, they highlight the imprecision of the relative valuation methods given the example of the price-earnings multiples as an example, because they *“generate imprecise results when earnings are highly volatile, cannot be used when earnings are negative and provide little insight into what drives the company’s valuation”* (Koller et al., 1990, 691).

The authors also pointed out the disparity between the traditional DCF model and a DCF model applied to high growth companies where the historical financial results are assessed beginning with the future and then the past. For this reason, to make this exercise a well-defined point in the future has to be delimited, at the time when the company's financial performance is likely to stabilize.

## Trade-off between Growth and Profitability

For many years, most companies have been driven by profits as a measure of success. However, in the recent history of the expansion of the internet and the growth of venture capital, more and more people have been defending that growth is more important than profitability. Jon Markman (2017) outlines this on the Forbes' article where he states that "*profits are so yesterday*" being what really matters the "*vision and great storytelling*" of the companies.

The present article uses the case of Amazon to validate his opinion. Amazon was created in 1994 by Jeff Bezos and was initially a website focused on selling books. The company has become the fourth largest company in the USA, although in these 23 years, only had a few profitable quarters. The reasons pointed out are the capacity of tech companies like Amazon, to efficiently raise large amounts of capital from the market allowing them to take riskier projects in markets not yet explored as for example, in Amazon case, cloud computing businesses or movie studios for streaming. This set the stage for copycat by companies like Tesla or the recent IPO of Snapchat, both of them with large public valuations without a single record of profits. By replacing growth for profitability, the investors are betting that those tech companies will either public or will be acquired by market leaders capable of paying the multiples currently practiced in the industry.

Lastly, it is important to define which is the threshold between growth and profitability currently used by the market. The authors Eric Kutcher, Olivia Nottebohm and Kara Sprague (2014) on the paper "*Grow fast or die slow*" have collected data from 3,000 software and online-services companies between 1980 and 2012 and the conclusions are appealing. The first conclusion of the study was that "*high-return companies offer a return to shareholders five times greater than medium-growth companies*". Furthermore, "*companies*

*whose growth was greater than 60 percent when they reached \$100 million in revenues—were eight times more likely to reach \$1 billion in revenues than those growing less than 20 percent.”* Finally, the authors also reached the conclusion that achieving a sustainable growth is extremely hard — *“just 28 percent of the software and internet-service companies reached \$100 million in revenue, and 3 percent reached \$1 billion”*.

Mark Suster (2017) in the article *“Should Startups Care About Profitability”* reinforces this idea of growth being more important than profitability by the fact that the resources needed today to fund growth will only come after six months or even one year. The author gives the example of salespeople to justify this assumption. When a company hires sales representatives, they might not close any deal for six months due to the learning curve to learn on how to sell the product and understand the procedures in practice by the company. Therefore, profitability will go down by six months to grow dramatically afterwards.

## **Customer Retention**

In a competitive market as the technology industry, economies of scale and market share have an important rule when new rounds of financing are being prepared. Saying that, acquiring and retaining new customers is one of the main concerns of top managers. At the beginning of a SaaS company, churn rate metrics are not as important as when the product is already well defined and the market fit fully settled by the market. When a company starts preparing a Series A round of financing, the values asked are typically between 5-10 million of dollars with a pre-money valuation between 15-45 million dollars and consequently, investors want to be sure that the company has the fundamentals to prosper in the market, and achieving high levels of growth and market share.

With the Product Market Fit settled, one of the most important metrics is by far the churn rate. J. Epstein, Marc and Manzoni, Jean-François (2008, 208) defined retention rate *“as the proportion of customers active at the period  $t-1$  who are still active at the end of period  $t$ , while churn rate for a given period is defined as the proportion of customers active at the end of period  $t-1$  who dropped out in period  $t$ ”*. There are two types of churn: customer churn rate and revenue churn rate. Customer churn rate is the percentage of total customers who churned in a given period of time. This metric does not provide a true image of the financial landscape of the company because the company can lose a large number of clients but each one representing a low value. Therefore, revenue churn is more relevant to understand a company’s ability to satisfy and retain customers, representing the percentage of recurring revenue lost due to churned customers. There are two types of revenue churn: gross and net churn. Gross churn only takes into account the users that have churned or downgraded their plans. Net churn also includes the positive effect of customers that have upgraded their subscription. Consequently, the goal of any company is to achieve a point where the upgrades by itself are enough to repay the churn and downgrades and achieve a growth rate only from the existing users – which have a lower cost to sustain them to acquire new ones. Kate Harvey (2016) on the article *“The 10 reasons SaaS Customer Churn (and how to combat them)”* refers that among the reasons for a customer churn are a bad onboarding of the service, mainly helping users to achieve their first big success with the service. *“If you’re too slow in helping them reach their first success, you’re going to see churn, as they look for more immediate ways to reach their goals.”*. Not defining customer support as a priority by the management is another reason pointed out by the author for churn. In most of the companies, the customer support allows not only for a smooth

adaptation of the users to a new service but also encourages upgrades. There is also the possibility of customer churn because the service provided by a competitor is simply better.

## Lifetime Value of a Customer

LTV is the net present value of the future gross profits of a customer and gives a crucial insight into how much money a company should be spending on acquiring each customer to be profitable in the long run. LTV is usually described in the literature as “*sum of cumulative cash flows — discounted using the weighted average cost of capital - of a customer over the entire lifetime with the firm.*”

$$LTV = ARPA * Gross\ Margin\ (\%) * \left( \frac{1}{1-k} + \frac{G*K}{(1-K)^2} \right)$$

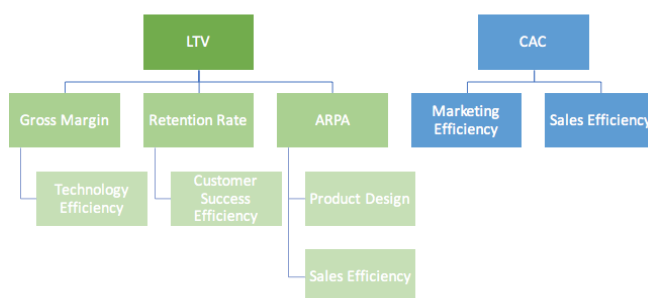
$G = Growth\ Rate\ for\ the\ customers\ that\ have\ not\ churned$

$$K = (1 - Churn) * (1 - Discount\ Rate)$$

Equation I: LTV Formula

Nonetheless, LTV is a tool - and not a strategy - with too many inputs that are outside of managers control, like ARPA and CAC (Cost of Acquisition). Additionally, the variables used are “*interdependent not independent and are an overly simplified abstraction of reality*”. For example, if a company increase prices (ARPA), churn should increase as a consequence. On the other hand, if managers spend more money on marketing, CAC will increase which could increase Churn could also increase as we would be attracting customers of a lower quality. To sum up it, it is theoretically impossible to have all the metrics of LTV increasing at the same time.

Figure I: LTV:CAC Ratio



## Case Discussion

### Conversion Rates

In the last decades, the freemium platforms have become the business model used by tech companies to grow their users base, in which a customer get some of the features for free and can unlock the remaining features by paying a subscription fee. A free tier has shown to be a successful alternative to a 30-day free trial or other limited offers because customers find the opportunity to use the product for free more compelling.

Therefore, the driver of growth is the conversion rate from page views to signups and at a later date from signups to paying users. Codacy started by operating in 2014 with a full freemium model, as many of other B2B SaaS companies, that has shown to be the most effective model to reach a meaningful user base to experiment the product and to figure out if the product has enough market fit to succeed in the market. As the time went on, paying subscription plans were added to the portfolio, and the freemium model became only available for open source projects.

Regarding conversion rates from a free user to a paying user in a freemium model, a rate of 1% is too low — meaning that the company is offering too much for free or consumers do not value the premium features to pay for them. On the other side, a conversion rate of 50% is too high because it means that the platform has no ability to generate the same number of leads needed in the future to keep the sales pipeline working, in other words, the potential to acquire new customers in the future is limited. The conversion rate of Codacy, as for any other tech company, is a strong indicator of the potential value of new users — since there is a strong idea of how many visits are needed to sustain the sales pipeline. Companies

with higher conversion rates will have a higher user value, since the cost to acquire a user will be kept constant over time.

For this reason, the first step to evaluate a user and the impact on the overall company structure is to estimate the conversion rates. If the conversion rate from page view to trials is high and for instance the conversion rate from trial to paying user is low — it could mean that there is interest from the market to test the product, but not enough to pay for it. In fact, a B2B SaaS company which has higher conversion rates than most of the tech companies, since the product offered is to a specific market that when visits the web page is already showing some interest in paying for the subscription. Codacy has currently conversion rates in line with the benchmark.



Figure II: Conversion Rates Funnel

## Cohort Analysis — Retention Rates

A cohort is a group of customers that share a common characteristic over a period of time. It helps to understand if a specific group is actually getting better over time or if it is churning/downgrading the subscription. This sets the stage to evaluate the different groups of customers over time and find patterns in the product commercialization and consumer behavior. After all, cohort analysis involves looking at a group of people over time and observe how their behavior changes. The retention rate can be observed on the horizontal axis

and the product lifetime on the vertical axis of the retention table. Consequently, the users were segmented accordingly with the subscription plan (Cloud and Enterprise), subscription length (Yearly and Monthly) and size of the account based on MRR (Figure III). This particular segmentation was chosen because within each segment the results are expected to be different, for instance, if a user pays annual, Codacy has a full year to work on the onboarding of the user until the next renewal. Additionally, in the meanwhile, the user cannot churn, as it has already paid for one year upfront which is why annual contracts are much more valuable for Codacy. The same happens for accounts with larger MRR — which have a bigger LTV:CAC (ratio between the Lifetime Value of a Customer(LTV) and Cost of Acquisition (CAC)) value for the company since there are economies of scale in acquiring these clients.

The most remarkable conclusion from the revenue retention cohort is as the time goes by, the most recent cohorts have a better performance than the older ones which means that Codacy is being able to improve the onboarding process which also reflects it is adding Product Market Fit. The cohort for the monthly data has a similar behavior throughout the different cohorts, which demonstrates the weight that monthly contracts still have on the overall MRR of Codacy. Even so, the annual cohort still provides important insights about the behavior of a user, mostly when compared with a monthly subscription user. The behavior of the annual cohorts is steadying over time, which is a consequence of the payment of a full year upfront, which reduces the incentive to cancel before the renewal date. The behavior of the monthly and yearly cohorts will be used as part of the analyses of the main segments created in this research - small, medium and big accounts.

One should be aware that the weight of the Enterprise compared to the Cloud segment in the overall MRR of Codacy makes the analysis of those cohorts slightly less effective,



because there is no real variance over time, apart from the renewal date that happens only once a year. On account of the limitations of Cloud vs Enterprise segmentation, we segmented the clients according to their MRR: small accounts are the ones with an MRR lower than \$500, average accounts between \$500 and \$1,000 and big account higher than \$1,000. In fact, there are subscriptions that are in the Cloud segment but have a higher MRR than some of the enterprise clients, which makes this analysis more helpful for the scope of the project. It is worth noting that on the small accounts, the retention rate drops over time in all the cohorts presented in the Appendix. With this analysis it was possible to identify the type of users with more churn tendencies over the past few months and it was concluded that most of this churn comes from freelancer developers — who subscribe Codacy only when they have big projects and pre-series A startups that are still testing their product on the market. This implies that the value of the small users is low for Codacy when compared with the cost that it was acquiring them since they do not stick enough time to recover the money invested in their acquisition. Clearly, the most valuable users at the moment for Codacy are the medium and big accounts, since these are the cohorts with the strongest retention rates over time. This means that Codacy is retaining these users for long enough to cover at least 3 times the CAC and at the same time being able to upgrade their accounts - part of the *land and expand* sales strategy (start with small teams of developers and progressively expand inside the companies).

Surprisingly, the big account cohort has a similar performance to the medium accounts which reinforces the idea that current user base should not be the growth driver in the future, since it is the one that presents the worse retention ratios as well as the lower LTV. These numbers are slightly lower than the values expected at the beginning of the cohort analysis which leaves room for improvements and shifting of marketing and sales strategies

from a small account user base to a medium/big account user base. The evidence from the cohorts analysis points towards the idea that the lifetime value of a user will be larger for enterprise and annual contracts.

## **User Lifetime Value**

### **1. Weighted Average Cost of Capital (WACC)**

Before computing the number of months that a user sticks with Codacy on average, there are several inputs that have to be computed. The first one is the Weighted Average Cost of Capital (WACC) which gives the average cost between the two sources of financing — Debt and Equity. The value raised in the last round of financing by Codacy will be used as a proxy for the value of Equity and, as with most of the tech companies, debt will be assumed to be 0, since the most common source of financing is equity from venture capitalists or investment funds. The companies that were used to calculate the beta for Codacy were: Box (cloud storage), Workday (HR and financial management software), Shopify (e-commerce company), Salesforce (CRM Software), Zendesk (customer service software), Hubspot (Inbound marketing and sales) and Splunk (software company). The criteria used to select these companies was: public companies in USA which the core business of business-to-business (B2B) software service. It should be noted that only American companies were considered because the tech market in Europe is still underdeveloped with few public companies - the major European tech company is SAP and it constitutes alone 42% of the Top 100 in company revenue, being almost eight times bigger than the second company on the list.

Considerable attention must be taken to the expected return of the market. For a private company, the expected return of the market is typically measured by the return of an

index. However, for a young tech company the risk associated is larger. Hence, the expected return of a venture capital fund was used as proxy for the returns of the market. In an ordinary venture capital portfolio, the returns expected by the investors is likely a binary result - either the investment fails or grant a generous gain. *“Historical venture capital performance shows that 5-10% of investments generate 60% of the VC returns”*. Cambridge Associates projects that on average the return of a VC is equal to 17.70% per year. In this paper a WACC equal to 26.18% will be used to all future computations.

## **2. Average Revenue per Account (ARPA)**

There are two types of ARPA: new and existing. The new ARPA takes into account only the new subscriptions and helps understanding if the value of new accounts is higher than the value of the existing ones. For the purpose of this research, the ARPA for the existing customers is used for the three segments, bearing in mind that medium and big accounts have similar behaviors by which will be evaluated both at once. As expected, there are few accounts with a medium/big dimension with a higher MRR — which is explained by the dimension of each team of developers in these accounts. Therefore, the ARPA for the medium/big accounts for the last seven months has an average value of \$2,000 and for the small accounts of \$300.

## **3. Gross Margin**

The third metric needed to compute the LTV for each segment is the gross margin of Codacy split by account size. The gross margin is a reflection of how much a dollar of revenue is valuable to Codacy. A good benchmark for a SaaS company is around 70-80%, since most of the costs are associated with an investment in future growth — as for example

engineering and marketing salaries. In order to differentiate the gross margin for small and medium/big accounts a few points should be mentioned in order to allocate the right percentage of COGS for each one. The small accounts are more cost demanding mostly because most of them pay monthly which increases the cost with payment terminals like Stripe, credit card providers or Paypal. It should be noted as well that small accounts tend to be more customer support demanding based on historical internal data. The reasons for this result are not yet completely understood but the fact that the teams with lower number of users, makes them more demanding for support. The COGS imputed to medium/big accounts is overstated if the percentage of MRR versus total MRR was used as weight, because most of those accounts are on-premise solutions — no cost with servers for Codacy. The present findings have important implications to define the gross margin for each segment.

#### **4. Cost of Acquisition (CAC)**

The investment that a company does acquiring new customers is one of those metrics that a Head of Sales and a CEO have to be always aware of in order to have a clear idea of the current growth of the company and future profitability that this growth can represent. Notwithstanding, the lack of information regarding the average cycle of a deal for the small accounts in contrast to the medium/big accounts it is predicted that the number of months that a sales representative needs to close a bigger deal is higher than for a small account which will impact the overall CAC for each segment.

#### **5. Lifetime Value of a Customer (LTV)**

Once we know how much Codacy will invest to acquire a new user for each one of the segments, it is crucial to assess the value that each user will bring to the company. The

most common metric adopted is the LTV, since it takes into consideration the several aspects of the interaction between the user and the company — how long the user stays with the company (retention rate), cost with the retention (gross margin), the growth rate of the company and the intrinsic discount rate. Making use of the segmentation done before, the LTV value will be computed for both segments assuming the same growth rate and discount rate. However, extreme caution must be exercised regarding the growth rate, since in the future it is expected to be the medium segment the main growth driver of any SaaS company. Hence, the LTV for the small accounts is lower than the LTV for the medium/big accounts which translates that these ones are more profitable for the company.

## **Conclusions and Limitations**

For a company that recently closed a Series A, the top priority is to grow the number of users and revenue in order to fulfil the milestones defined by the market to fund a Series B. As part of the growth strategy of Codacy, achieving Product Market Fit as well as targeting the more profitable users is mandatory. This research paper is only the first step to analyse the problem and define the metrics for the future. It is plausible that a number of limitations might influence the conclusions presented, in consequence of Codacy being one of the fastest growing SaaS startups in Europe. Most of the assumptions are built on top of historical metrics, which will be unreliable in a near future and therefore should be updated systematically. As an example, the thresholds were defined based on current cohorts, but as Codacy starts to target bigger deals, the values should be adjusted to reflect the new reality.

Being aware of those limitations, the conclusions that we can take from the current data are that Codacy, as most of the SaaS companies, have a higher percentage of MRR coming from Small and Midsize Businesses (SMB). The small accounts and Cloud segments

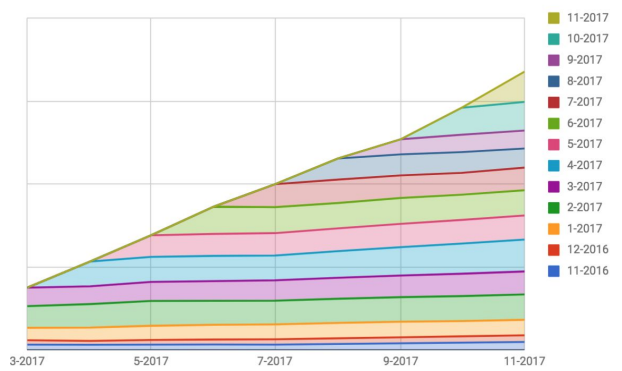
come to Codacy, mostly through Organic channels — the user visit the webpage signup and starts to pay. Currently, Codacy has higher conversion rates than the benchmark. However, the value of those users is significantly low, since they do not stay with Codacy enough time to recover in LTV the value spent in acquiring them (CAC), even if this cost is small — as concluded from the cohorts analysis. From a cash flow perspective, those segments are also the ones with less value, since most of them pay monthly, which increases the probability of churn events, as well as reducing their importance from a cash flow point of view.

On the other side, the medium/big accounts and Enterprise users have a higher cost of acquisition, because even starting organically, Codacy has to spend resources on their expansion as part of the sales strategy which is based on land and expansion of organizations (start with small teams of developers and progressively expand inside the companies). Even with a higher CAC for Codacy, the LTV is also higher, since from the cohort analysis is possible to conclude that these users tend to stay with Codacy for long periods of time and actually upgrading their accounts. These segments tend to pay one year upfront which allows Codacy to finance their operations with annual contracts.

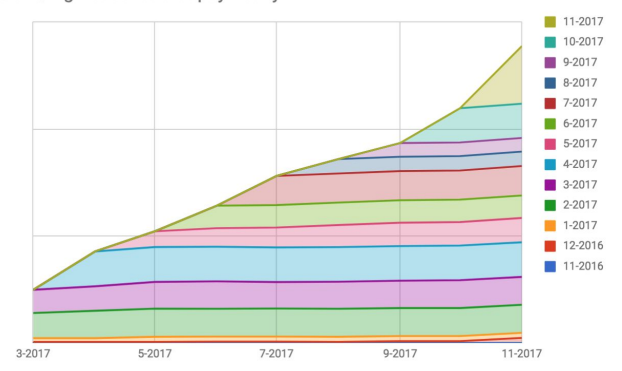
All in all, this paper will give the data and metrics that Codacy need to become more data driven and define sales, marketing, growth and product strategies for the future according with the needs of each segment.

# Appendix

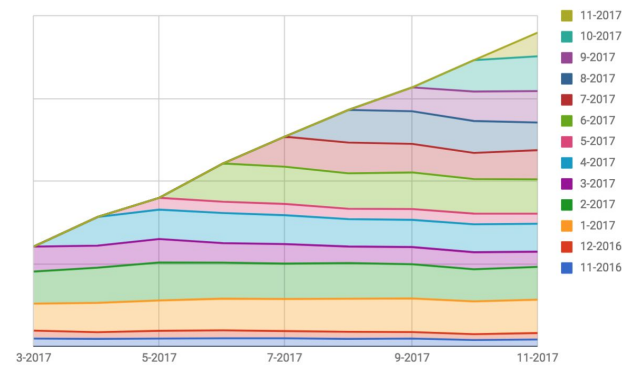
Revenue Cohort



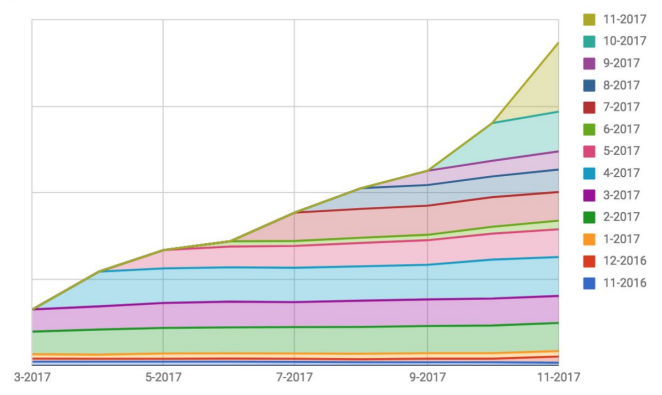
Medium/Big Accounts that pay Yearly



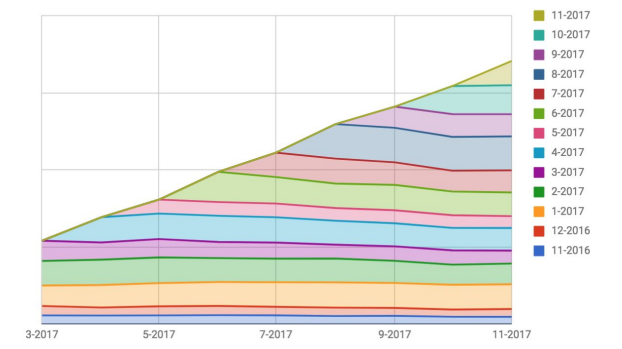
Monthly Revenue Cohort



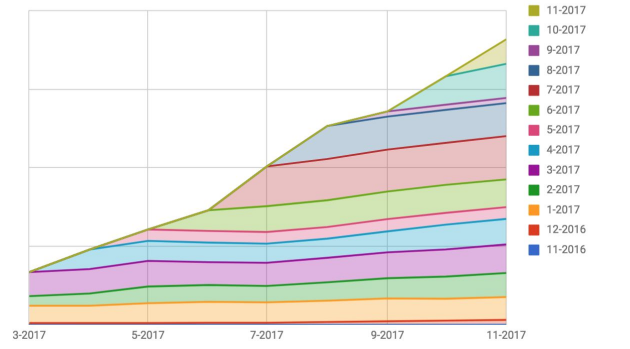
Yearly Revenue Cohort



Small Accounts



Medium Accounts



Big Accounts

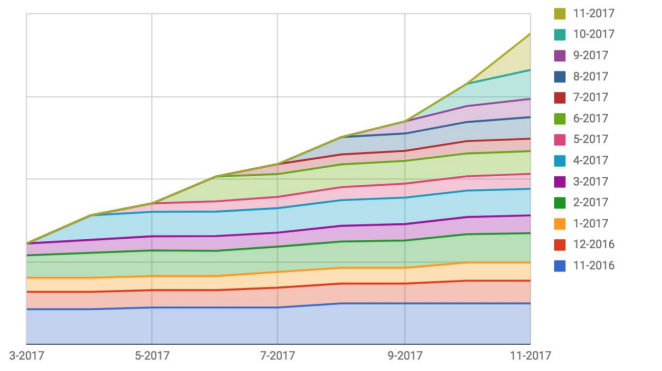


Figure III: Cohorts

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