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Key Factors of Health Score System in Customer Success

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Abstract

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SaaS vendors can struggle when the contract period with the customer comes closer to an end. The contract renewal should be done and there is not necessarily such visibility and information on the customer account status and health. The optimal situation would be to know in advance will the partnership with the customer continue. For this dilemma, a Customer Health Score Tool brings a solution with a holistic view of the customer accounts since it is multiple times more expensive to acquire new customers compared to keeping the existing revenue running.

The commissioner of the thesis was a Finnish SaaS company operating in a B2B sector in the global space. The company has thousands of customers, and the contract renewals are the key to secure the existing revenue plus build growth on top of the existing.

Customer data was scattered in the commissioner organization and was not utilized to get value and insights of the customer statuses. Research questions set to bring understanding and usability of the customer health score data were: 1) How does the Customer Health Score tool output help in building better customer success? 2) How does the Customer Health Score tool output help the commissioner organization to work proactively and give predictive warnings of unwanted results? 3) How could the Customer Health Score tool secure the case company´s future revenue?

The thesis work utilizes quantitative data collected from the commissioner's organization and qualitative data from the interviews the author conducted. There were interviews for the commissioner's organization's customers and internally in the commissioner´s organization. The thesis outcome convinces and confirms the need for the customer health tool for the commissioner and also generally for other SaaS business organizations. The thesis will support also decision-making when selecting the tool for the health score and Customer Success platform.

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1 Introduction

Everybody wants to be successful in their private and business life. Nowadays there is pressure to perform all the time better and demonstrate continuous improvements and development across multiple areas. Current technologies bring along such capabilities that data can be utilized more efficiently all the time. Visibility increases through access to data and that can be highly demanded for instance from the business leaders in organizations. Data has been taken as a powerful asset also in better business decision-making. Data utilization may lean on benchmarking and comparison of how own business performance is against the market average or best in class performers in specific areas.

Different types of customer data is collected nowadays through multiple channels. There are, for instance, customer helpdesk queries, survey feedback for customer satisfaction, or just the data that is collected from the usage of the tool or service itself. A significant number of actions are recorded continuously, and that data is usually stored in multiple locations in software or service vendor organizations which makes it hard to have a holistic view of the customer accounts based on all collected data. In the Business to Business (B2B) sector, many customer surveys play an important role and there can be data collection on daily basis also. A frequently used survey format is the Net Promoter Score (NPS) which indicates on a scale of 0-10 how satisfied and how likely a customer would recommend the supplier company to a colleague or friend.

The commissioner company in this thesis operates in the B2B sector where the company is dealing only with other firms. This sets a different methodology in business than the consumer business B2C (Business to Consumer) what comes to agreements, average deal values, contract lengths, service levels, and so on.

Customer experience will be covered specifically in chapter 2.4 but it´s worth mentioning here that despite the fact the business between companies compared to consumers is different. It is still humans on both sides doing the decisions and a positive customer and service experience needs to be established in every interaction. Business can be also with large corporations and involve many employees on both sides. For a positive experience, many individuals need to be engaged and influenced. When doing business with smaller firms it does not vary that much from the consumer business since the staff size can be only one or two employees in the whole

company (Filenius 2015, 77). It depends on the business but usually, the biggest count of customer companies may be relatively small with only a few employees. This is also the so-called micro or small and midsize business (SMB) segment depending on the customer categorization in the vendor company. Customer segmentation is usually seen as a pyramid where the upper part contains the enterprise firms, which can, in many cases bring most of the vendor company's revenue.

In the early 21st century the traditional model for computer software of delivering on-premise installations got a strong alternative, Cloud Computing. In Cloud Computing, also known as Software as a Service (SaaS), an application or service is offered to end customers to use with an internet connection and a web browser or other piece of dedicated application. Practically it means that infrastructure costs which come from different type of servers and services which were previously required for certain applications in the on-premise model, are now longer needed or maintained by the end customer. The clear advantages of Cloud Computing are for instance better visibility and forecast of costs, lower risk for the end customer, and automatic updates. A vendor company offering the service from the cloud keeps the system up to date by automatically updating the software. This means that there is no need for separate and expensive upgrade projects plus the tool is always up to date and in the same version for all users in the user organization. New released versions can also be offered for the users to download on demand if the technology has a native application, like mobile apps.

A major difference in the data storage and a service usage type of data point of view is that in the SaaS service, the usage data is stored with the service provider and opens the possibility to utilize this data in many ways. Compared to a model where usage data is stored in to end customer environment where the vendor company does not have such access and visibility to which features and how often they are used for instance.

The amount of data is increasing at an incredible pace nowadays. Customers are producing data for service providers from multiple different channels and sources every day. When thinking about the data and such signals that would help service providers to identify the customer success better, be aware of the customer satisfaction for certain accounts, and do proactive corrective actions in the delivered services. Perhaps based on the received feedback or preferably with the data utilization and combination from multiple sources.

Customer data can consist of surveys like NPS, software usage in the SaaS service, financials, helpdesk statistics, and many others. This already shows that customer-related data is much more than just one survey. To get a holistic view of the customer account's current status and pulse, data needs to be taken and combined from different sources.

To take this to the next level and to get a more holistic view of the customer accounts and their statuses, it requires several data sources to be used. Some data sources may be updated more frequently than others, but all can be relevant data to tell the status of a customer account in a relatively trusted and informative way.

In the SaaS business, transactions are usually a fundamental part of the vendor company´s revenue generation. SaaS models often consist of transactions which can be relatively low also for one customer on a monthly basis, but the key is the length of the contract and continuation of the transactions and agreements. Contract renewals are crucially important for vendor companies since it enables and secures a successful future from the revenue point of view for the software vendors.

The recurring revenue is very important for SaaS companies. It can be measured on monthly recurring revenue (MRR) or annual recurring revenue (ARR). Practically it means that when the agreement has been made between the customer company and the software vendor. It defines the fact that at least the same revenue will be paid until the contract expiration date. Potentially even more if a customer purchases more features or other services. Their usage, the number of transactions for instance may increase in the contract period and if the number of transactions is limited to a certain level in the agreement, there is a possibility to get additional revenue from the overage part. A renewal date can be said to be a critical touchpoint from the software vendor's point of view since in the SaaS world it is also relatively easy to change the supplier if the functionalities or service level has not been suitable. Alternatively, even though the previous items would have been on an acceptable level, but it is known that perhaps with the same level of costs or with a lower fee much more can be achieved from the other vendor, a service supplier change can happen. There can be multiple factors causing the supplier change since it is anyway humans doing the decisions and what influences most in the buying behavior and decision-making is dependent on several things.

This thesis is confidential so the commissioner company cannot be mentioned by name. The organization has been in the Information Technology (IT) business for more than 35 years and has experienced a lot as a company. In the IT business, decades have been different, and the landscape is changing rapidly due to developing technology. The firm has done a successful transformation from on-premise products to SaaS services some time ago and is now in an era of growth from the cloud.

The aim of this thesis is to analyze the commissioner company´s initial customer data for the potential Customer Health Score system. The purpose is to investigate and explain "what the data tells" about the customer accounts and their health. The commissioner company has set an internal Proof of Concept (POC) for the health score tool. One important element in the thesis outcome is what kind of development proposals could be given and taken into account when taking the health score tool towards the first production version. At the time this thesis was written no decision was made yet, will the production version of the health score system be an internal tool or alternatively some commercial platform.

A case study was used as a research approach in this thesis and the methodologies used were both quantitative and qualitative research methods. The qualitative data for the research was collected from the customer and commisioner´s internal interviews.

2 Customer Success

We can say that everybody wants to be successful but what does good look like in Customer Success? How do you know and how do you measure success and the performance of a customer? This needs certain metrics to be put in place to do the measurement. Many times, it can be specific KPIs (Key Performance Indicator) that are either defined together with the customers or alternatively a service provider may give those as a target when benchmarking with potential performance level from similar organizations or the market in overall.

Customer Success is a concept that it is not just in the hands of one team or individual in the organization. It is more a substantial theme that goes across team borders and through the whole organization all the way up to the executive level. Customer Success is a relatively new term and is often confused with customer satisfaction or customer loyalty for instance. Customer Success is for attitudinal loyalty which can be seen different as behavioral loyalty says Mehta, Steinman, & Murphy (2016). Mehta et. al. also state (2016, 108): “Success isn´t Destination; It´s a Journey”.

Vaidyanathan & Rabago (2020, 24) define Customer Success with the formula CS = CX + CO. Customer Experience (CX) plus Customer Outcome (CO) are the crucial ingredients for success. Customer Success can be said to deliver value for the customer with a unique and outstanding experience.

2.1 Customer Data in Organization

A quite common challenge in organizations can be there is a lot of data, perhaps too much already, and it is not structured well enough. We can say that the data is there, but it is scattered in the organization. Data may also lack ownership and is not then utilized in the best possible way or not bringing any value to the vendor organization or towards customers (Vaidyanathan & Rabago 2020, 115).

Filenius (2015, 209) highlights the fact that there is a huge amount of data for harvesting and storing that is frequently taking place within organizations. This is good since the data can be very powerful if used correctly but it does need to be used not just stored. Also, the data quality

matters significantly. With a good data, predictions and analysis are more precise than with a bad and unstructured mass.

2.2 Customer Churn

Service providers aim always to have a life-time long customer relationship. This is, however, not always possible since the customer journey consists of so many interactions and some external and unforeseen obstacles may suddenly come up, e.g. acquisition or company mergers. These may cause a happy loyal customer to turn to using other tools due to these significant changes. This is very natural that changes happen in the business world. Today's SaaS services make it also slightly easier to make these changes since services are not tailored compared to the old on-premise environment where the change of business critical software was tough to do and required significant projects and higher costs. Customer churn is a term used when customers leave the current service provider and are not renewing their service subscriptions. (Mehta et al. 2016, 18-19.)

The opposite of customer churn and a customer leaving is customer retention where a customer stays and renews and possibly expands their contract. Retention rate is often a key target for a SaaS company and retention does not come for free. Every churn revenue needs replacement with a new sale, and this does not come automatically if starting from fully new logos (new customers). It requires sales and marketing activities to have the leakage revenue replaced. Based on studies, it can be 8-16 times easier to develop and upsell to existing customers in B2B than to win totally new accounts (Holma, Laasio, Ruusuvuori, Seppä & Tanner 2021, 35). Top-performing companies can keep the customer churn in single digits (Lah & Wood, 2016). The previous text highlights in a nutshell the importance of contract retention for SaaS vendors and how critical it is to minimize churn to be able to secure success in the future and to have growth possibilities from the existing customer base.

Many organizations make the mistake that they do not take a customer leaving as a learning and are passengers to the decision process. The first recommendation is to ask for contract renewal proactively so that it does not come as a surprise to both parties. Secondly, if the customer has

declined to renew. Then it is important to go through the reasons for the churn and why they came up with that decision. Even a third-party service can be used for this interview purpose if that is seen as more neutral option. (Mehta et al. 2016; Vaidyanathan & Rabago 2020.)

2.3 Measuring Success

Measuring success needs an understanding of the organization structure. There are usually many stakeholders involved, company strategy sets own guidelines to follow and then there are all delivered services and products from different resources and their competence levels. Measuring system and performance need to have certain priorities defined so that it supports the targeted success. It is also very important that the measuring system can alert when things are going below to defined threshold levels. It gives time for organizations to react and still do necessary actions proactively towards their customer accounts. Another advantage is that a measuring tool gives an indication of new opportunities and helps to utilize those better. Relevant data is usually much more than just one value. An important factor is that also organization needs to adapt and be capable of utilize the data from the tool. (Laamanen 2005, 350-351.)

Data can be very powerful if used correctly. A systematic and analytical approach is many times needed when available data needs to be refined. Filenius (2015, 212) highlights the traditional flow of successful development. Flow is to Measure, Monitor, and Develop. It is iterative and the loop continues to have successful results. Many organizations are collecting data but only a few can utilize it correctly says Ahvenainen, Gylling & Leino (2017, 127). This is an issue in many organizations since not all are aware of what kind of data is already available and how to utilize it in an optimal way. Data Scientists and similar experts are real professionals nowadays to show the real power of data.

2.3.1 Measuring Customer Success with NPS

A traditional way to know how customers are feeling and experiencing the given service has been a customer survey. It is a relatively good method to get customer insights and feedback. An important part is the post-work to take survey feedback to corrective and concrete actions. It is not leading to successful results or changes if different surveys are just launched without proper post-work for analysis and learning for the service delivery organization. (Vaidyanathan & Rabago 2020, 147-150.)

There are also many different forums where customers can be listened to. It can be in frequent or ad-hoc meetings, phone calls, or even emails. What is the current pulse of the customer, do they still feel loyal to the business partnership? In bigger organizations, there can be multiple contacts from different organization units in communication daily basis. That is why there needs to be a customer responsible person or persons who have a holistic view and can any time tell what is happening in the customer account at least on a high level. This sentiment can also be recorded and tracked as a trend and may tell something valuable about the customer status. This may be very useful if someone from the vendor organization who is not frequently in contact with the customer is about to give a call to the customer. If such call is not that urgent it may be even good to postpone that a bit if the current status that is shown in the sentiment is not optimal for anything new.

2.3.2 Net Promoter Score (NPS)

NPS is a common survey method with a scale of -100 to 100 as an outcome. According to Vaidyanathan & Rabago (2020, 133) in NPS score already above 70 score can be considered as a very good result on a global level.

NPS logic and score is calculated based on figure 1 below.

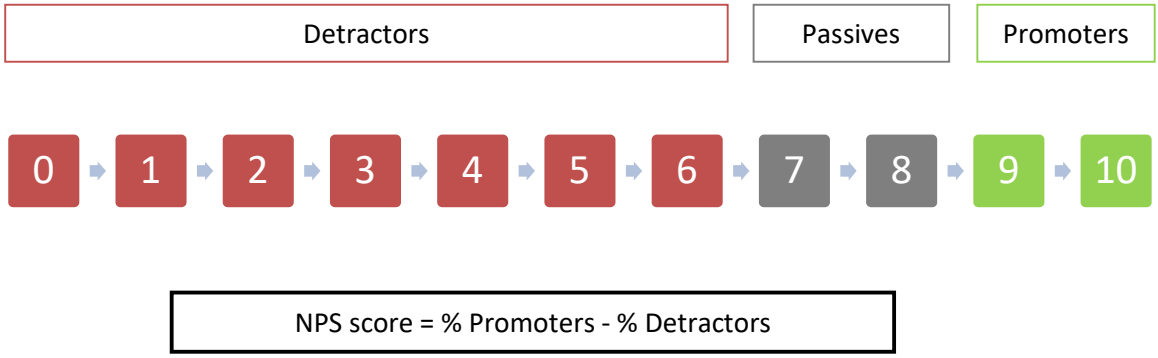

Figure 1 NPS score calculation (Modified from Gerdt & Korkiakoski 2016, 167)

On the left-hand side starting from zero, is most unlikely response values (0-6) and on the right-hand side of the scale are very likely values (9-10) (Gerdt & Korkiakoski 2016, 167).

NPS has also limitations although it is very widely in use. Since the NPS score is based only on numeric feedback it goes much to emotional experience the responder has at that particular moment when running through the survey. NPS is used globally but even different nationalities may have a different view on how they see the items and the current level of the service provider. (Filenius 2015, 125.) Even though experience would be very good, the outcome may still turn out to be 7 or 8 which is neutral and does not influence on final score to targeted positive digits.

Gerdt & Korkiakoski (2016, 166) mention that the NPS survey score is a good indication of a customer pulse, but the real status of the customer and reasons can be seen from the open text feedback. Holma et al. (2021, 263) say that the NPS score represents the loyalty of the vendor. Minor changes in the given number on a scale of 0-10 will change the final score rapidly. For instance, 6 to turn to 7 so from negative to neutral. Another example is 8 to turn to 9 which is from neutral value to promoter, leading to a positive final score.

Other important factor for listening to customers is to ask retention directly that will the customer renew the contract when time is closing for contract expiration. Same goes for going through the case when a customer wants to leave so why did they terminated the contract and retention was not possible. (Holma et al. 2021, 265.) It can be also 3rd party involved in to do such an interview if not comfortable for the company or customer to do it with the former agreement parties. Such interview when leaving and the outcome needs to be analyzed deeply and taken to vendor company learnings how to possibly do better and more efficiently with other their customers (Vaidyanathan & Rabago 2020, 98).

The original NPS mechanism was created already in 2003. With the limitations it has and due to changing environments, it has been time to renew the system. Reichheld, Darnell & Burns (2021) have introduced a new enhanced version of the NPS mechanism. They highlight the difference between the earned growth which is the revenue from referrals and accounts coming back as customers. Another type is bought growth that comes from advertising and sales actions. The new NPS version (3.0) has also financial figures involved in the final score of customer accounts.

The NPS is not seen as a base tool and measurement to represent customer satisfaction. The NPS is more for customer loyalty. Zaki, Kandeil, Neely & McColl-Kennedy (2016) state that the NPS is based more on customer attitude than behavior. A study has shown that a single measurement is usually not enough and does not correlate enough with sales growth for instance. The study showed also that even between genders, females rated higher in the NPS than males. This is an interesting fact and just one more argument that the NPS itself is not a sufficient measurement for Customer Success for instance. NPS is the best tool to predict in short-term sales growth (Baehre, O'Dwyer, O'Malley & Lee, 2022).

2.3.3 Customer Health Score

Customer Health Score is a mechanism for categorizing and helping service provider organizations to get visibility and understanding of the current state of their customers. The health score system is purely for internal use for the service provider organization. There is no strict definition of what a customer health score should contain but each company defines the data sources by themselves. Recommendations are to use for instance adoption how well customers take new

products or product features in use. A second usable data is an engagement, how loyal customers are. This data can be taken with NPS and other surveys representing the loyalty and customer experience in the feedback channel from their side. A third valuable data is a sentiment score. It means that a customer responsible will give a score of the current customer account status. Many companies have tried to approach health score only with one metric and others have made it very complex with too many parameters. The balance is somewhere between these so there are several data sources used but all data should be relevant for customer health outcome. (Vaidyanathan & Rabago 2020, 129-134.)

Health is such a concept that it needs some concrete items to be used and come up with a definition of the health status. To make this customer health status definition slightly easier, a mechanism called Customer Health Score has been defined to help organizations to get the needed visibility of their customers health based on the customer data. (Mehta et al. 2016, 36.)

ClientSuccess (2017) refers customer health to similar as the expiration date of a milk in a fridge. It is something that each customer team should know what is the customer account status.

Customers in different statuses can be categorized in many different ways but perhaps the easiest would be to have categories: Healthy, Neutral, Not Healthy, Sick. This categorization goes well also with traffic light colors where green indicates healthy, yellow neutral, and red sick. Orange color can be taken as an additional to represent not healthy category. Almost in the same way as humans being sick, not feeling ok, or having some symptoms. There is need for humans to go to the doctor. Customer organization may be “sick” as well. Their healthy level is not optimal, and it needs actions to be taken to get back to the track on the healthy level. One method to prevent unforeseen changes in customer health is to keep regular Health Checks in customer accounts. (Mehta et al., 2016.)

Customer Health Score Tool is a huge support in customer adoption, retention and expansion to be able to categorize, weight and measure different customer accounts says Phil Nanus (TSIA, 2019.) Predictability in revenue growing and early warning system are the key features the Customer Health Score system brings to a SaaS organization states Amity (2018). Customer Successbox (2019) says the same that the Customer Health Score system is for early warnings and for driving specific and correctative actions. The optimal health score system has fresh and valid data on daily basis. Custify (2021) refers to a recent study which states that 98 B$ of potential revenue

is not achieved when SaaS vendors fail to optimize the business outcomes for their customers. ClientSuccess (2021 a) says that the study done in 2021 revealed that 35 % of B2B organizations can successfully reduce customer churn when risks are identified in early stages. ClientSuccess (2021 b) suggests that it would be good to review overall performance in the health score tool in 3-6 months and do necessary changes. Gainsight (2018) has also a good reflection to sport teams what comes to Customer Health and Success Management. There are similar items to lead a sport team to win compared to a customer success. Gainsight gives one recommendation that not all sources in the health score tool would be for already happened items. Involve AI (2022) highlights the facts that there is no magic setup that would fit for every company. One of the most important items is to show and give the right value for the key stakeholders for example early indicators for the success. Customer Health Score Tool shows when customers are progressing to the right direction and helps to handle the internal orchestration.

2.4 Customer Experience Management

Good customer experience is certainly a targeted outcome when working with customer accounts. There are different customer experiences but the one causing the “wow” effect should be the one to be targeted (Ahvenainen et al. 2017,11).

A positive customer experience can have many advantages for the account status and to the length of the customer relationship. Emotional part is the one that is usually in the customer’s mind much longer than what was said or done so how the given service made customer to feel. With a good customer experience, a customer may become an advocate on the field and can recommend vendor company services and products for other potential organizations which very nicely adds new sales opportunities. This can happen through customer loyalty programs or automatically when received good service. Social media is also a very powerful tool nowadays. It is strong in good and bad marketing and experiences are shared widely on social networks. To serve customers with a five-star customer experience is also a unique way to differentiate from the competitors. Company reputation, references, and customer advocates are in an important role

when potential new customers are doing selection for their new business partners. (Holma et al. 2021.)

According to Ahvenainen et al. (2017, 33), a holistic customer experience is built from three particles presented in the figure 2 below.

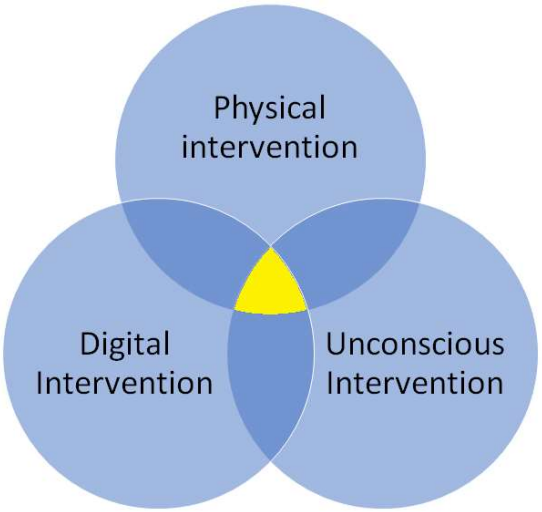

Figure 2 Interventions for the optimal Customer Experience. (Modified from Ahvenainen et al. 2017, 33.)

Physical, digital, and unconscious interventions create a harmonic entity where the customer needs to be in the center. If any of the three areas is dominating too much, optimal customer experience is not created.

Ahvenainen et al. (2017, 123) also state that successful elements of customer experience are as in the figure 3.

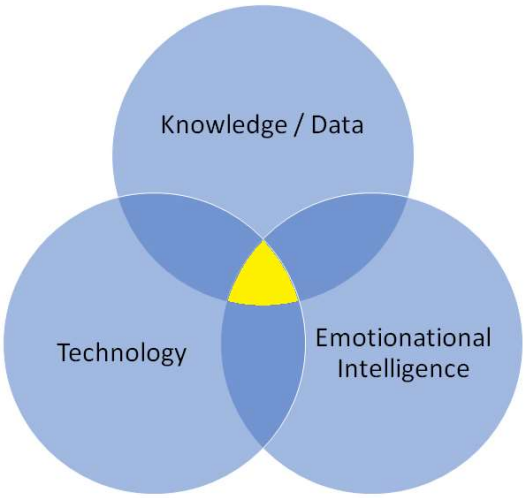

Figure 3 Elements of Customer Experience. (Modified from Ahvenainen et al. 2017, 123.)

None of the above elements in the figure 3 is enough individually. A good mixture of all elements brings optimal outcome and a successful customer experience. Current technologies bring value and advantages, but it requires knowledge and expertise to get the most out of it. It is also the emotional part that needs to be involved as well and to be adapted in the right way to each service occasion with the customer.

Good customer experience is certainly a critical success factor, and it has a straight impact on vendor organizations performance. In the financial figures customer experience is often seen as a long-term result says Filenius (2015, 31).

Previously in this chapter, it was mentioned the wow effect and how the emotional part is important to how customers feel about the service situation. A human being can many times remember much better a negative experience and often quite minor items can still turn the overall experience negative. Filenius (2015, 40) highlights the importance to think like a customer and go into the customer's shoes to be able to understand and serve customers better. Every action counts and many times a good customer experience is built from multiple successful pieces.

Customer experience and a profitable company have a clear correlation say Gerdt & Korkiakoski (2016, 17). Positive customer experience reduces customer churn and adds loyalty to keep customers longer. It has been said that a good customer experience is even more important than the actual delivered service or price adjustment since it all starts from the fact that a vendor needs to know their customers. (Gerdt & Korkiakoski 2016, 46-47, 105.) What do customers need and

when and how to create value for the customers in a way that it differentiates from the competition in the market? Customer experience management is not just work with customer satisfaction surveys but a core for successful business which shows in financial performance (Holma, Laasio, Ruusuvuori, Seppä & Tanner 2021, 32).

The emotional part of the customer experience is a cornerstone for an outstanding customer experience. Gerdt & Korkiakoski (2016) state that even 70 percent of the customer experience is emotional and the remaining 30 percent goes for delivering the service which can be the technical part. This clearly states, that staff working in customer-facing roles needs to have trainings frequently for soft skills since studies show that a customer experience will be made with that part rather than pure technical competence. Holma et al. (2021, 27) mention also that the customer experience is always a unique occasion and two similar experiences do not exist.

In many vendor organization roles, people are in contact with customer contacts. Customer experience is built in these interactions. However, it is not one individual creating the whole customer experience for a customer. It is teamwork and it comes from the whole organization delivering the service. (Fischer & Vainio 2014, 165.)

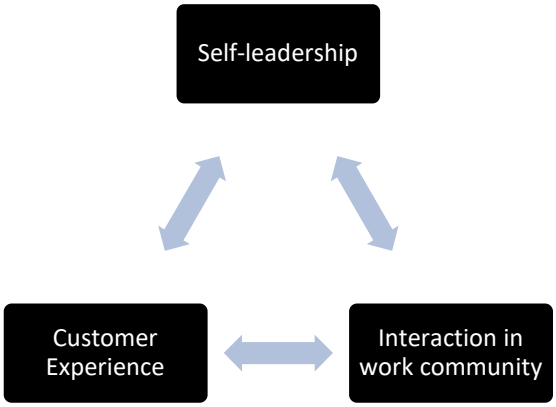

Figure 4 Key factors of the service experience. (Fischer & Vainio 2014, 16.)

Fischer & Vainio (2014, 16) highlight also that when talking about the service experience, customer experience is only one cornerstone. Other important ingredients are self-leadership and interaction in a work community (figure 4).

Recently, services have been moved more to end customers. This self-service approach makes customers to work independently with the tools. It brings benefits to customers and vendor

organizations but there the customer and the user experience is built only from the tool itself, not from the human interaction. It is important that the key responsibilities are in contact with their most important customers frequently to hear them and to check that all is working smoothly. This is something that needs to be taken into account when services are based on Artificial Intelligence (AI) or Robotic Process Automation (RPA). So, in other words, computer-aided instead of real human work. (Villani, 2019.)

Villani (2019) says that a good customer experience creates happy customers. This is certainly true and it has a straight correlation to vendor organization as well. “Happy customer make for happy employees” says Villani (2019, 47). Customer experience is a personalized journey toward success. If customer experience is forced to be a destination it goes wrong badly. (Villani, 2019.)

Bigger organizations have usually many persons who are in contact with the customer. During the customer journey, there are many departments involved in delivering hopefully the outstanding customer experience. Vaidyanathan & Rabago (2020, 3) say that the Customer Success Manager (CSM) role has been in a significant increase since 2015 how it shows in open positions in organizations for instance. CSM's role in the organization and towards valuable customers is as the name states, to deliver success for customers but also for the vendor organization. “Customer success is where 90 % of the revenue is” (Vaidyanathan & Rabago 2020, 16).
Products and services are possible to copy by competitors. Human interaction between persons and emotional connection cannot be copied so that is still a unique competitive advantage. (Fischer & Vainio 2014, 10.)

Saarijärvi & Puustinen (2020, 35) states that customer experience is a core in the organizations management and strategy.. Also, Steve Jobs, the co-founder of Apple Inc. had said: “You’ve to start with the customer experience and work back toward the technology, not the other way round” (Saarijärvi & Puustinen 2020, 46).

3 Customer Health Score in the Case Company

The case company has done an evalution of which kind of data would be available for the customer accounts. This data combination should give a more holistic view of the current status and in longer term than customer satisfaction surveys for instance.

In the case company, Proof of Concept (POC) solution for the Customer Health Score consists of the data sources listed below. These data sources can be called data buckets.

- CSM sentiment
- Customer satisfaction surveys
- Customer support statistics
- Financial performance
- SaaS service usage data

Figure 5 Data buckets for the Customer Health Score Tool

Final score for the customer health will consist of the previously mentioned data buckets. Data will be put together and it is like in the figure 5. It forms a data funnel where the outcome is a Customer Health Score for an individual customer account on a scale of 0-100.

Since the data from different data buckets is not necessarily equal from the value point of view it delivers. It has been agreed that for a POC value weighting towards the final health score, value weighting is done based on the table 1.

Table 1 Weighting of the different data sources in the Customer Health Score

Data bucket	**Weighting**
Customer Feedback	30 %
Customer Support	30 %
CSM Sentiment	20 %
Financial Performance	10 %
SaaS Usage	10 %
Total	**100 %**

Table 2 Health Score values for different categories

	Health Score Categories
Healthy	Green > 70
Neutral	Yellow 50 -69
Not healthy	Orange 20 – 49
Sick	Red 0 -19

Above table 2 shows how the case company has defined the health score categories on a value scale. All other categories than healthy need naturally attention and actions so that the customer account status is not going to worse during the upcoming periods.

Actual health score values are included in the thesis for anonymous customer accounts. This will be used to show trends and connections between bigger customers which consist of many different sub-accounts. For instance, regional accounts and possible differences in the performance or health values between the accounts belonging to one master account.

Changes in customer organization may cause significant hiccup in cooperation between vendor and the customer. If for instance, a new sponsor on the customer side is supporting more likely

another vendor and perhaps not even on fact-based reasons what comes to current performance. History will also follow for a long time, so it is important to flag key resource changes on the customer side right away and be aware of those. Key contact change can be a red flag in the customer health score since in most of the cases it is not helping things right away but will cause uncertainty until the situation is stabilized.

Health score should give 360 degrees holistic view of the customer account with multiple dimensions. In a longer run, health score should create happy and healthy customers which are categorized based on the traffic light system in the commissioner company´s case. (Orange color as an additional to traffic light indication)

Customers are categorized in many organizations based on their importance to the company. This categorization usually comes from the revenue customer is bringing, growth possibilities, strategic opportunities, and many other. Quite a traditional way can be to categorize customers for instance into segments A+, A, B, C, and D. A+ represents the most important customers. This is important to keep in mind and to take into consideration with the Customer Health Score values. Even though every customer is important, naturally A+ and A customers should have the most focus. In other words, perhaps a D category customer being in bad health score value is not that concerning than where the much bigger revenue comes from for instance A+ and A category customers. This example shows that the health score value itself needs interpretation that the actions will be focused on the right and correct accounts as well.

4 Research Strategy and Research Methods

Research starts always with a research problem that needs to be resolved using different research methods. A fundamental role of a research is to produce such information which will help in decision-making. Research can many times be a start for something bigger in the future, but research will first confirm or open the phenomenon under investigation. (Kananen 2013, 22-23.) Kananen (2008, 10) states that a phenomenon has to be defined very well first in order to be able to use a quantitative method for a research.

Kananen (2013, 22) has also illustrated research methods in a graphical way, figure 6 below.

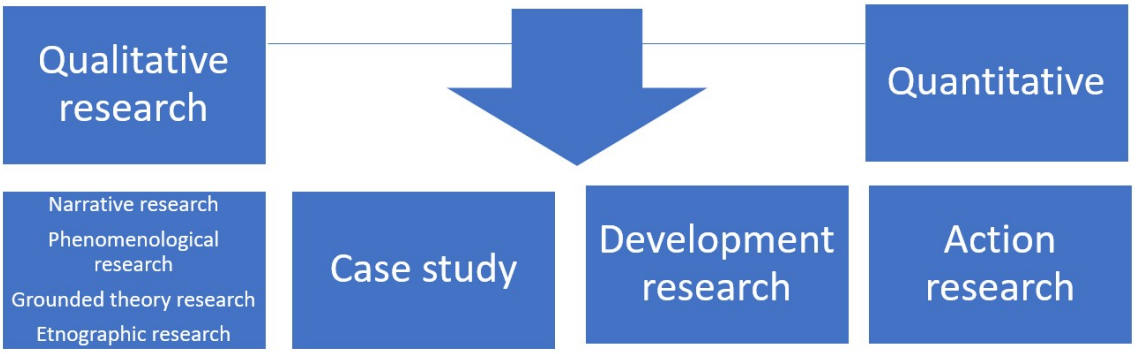

Figure 6 Research methods. (Kananen 2012, 22)

Qualitative and quantitative research are placed most far from each other in the figure 6, but it can be seen that the case study as a research strategy is there between these research methods. It means that both methods are valid even though a case study is nearer to qualitative research.

Triangulation, also called as mixed methods is an adapting combination of quantitative and qualitative research methods. Triangulation works well in a very complex and large research (Kananen, 2013, 33.)

Hirsjärvi, Remes & Sajavaara (2007, 132-133) state that a qualitative and quantitative approach are complement for each other and these should not be considered fully as opposite methods. Quantitative research can be also very systematic (Kananen, 2013, 58).

With a chosen research methodology and the selected strategy, the aim is to go beyond the phenomenon and generate something new that was not acknowledged before. There is a strong connection between the theory and empiricism (Hirsjärvi et al. 2007, 139.) This is illustrated in the figure 7 below.

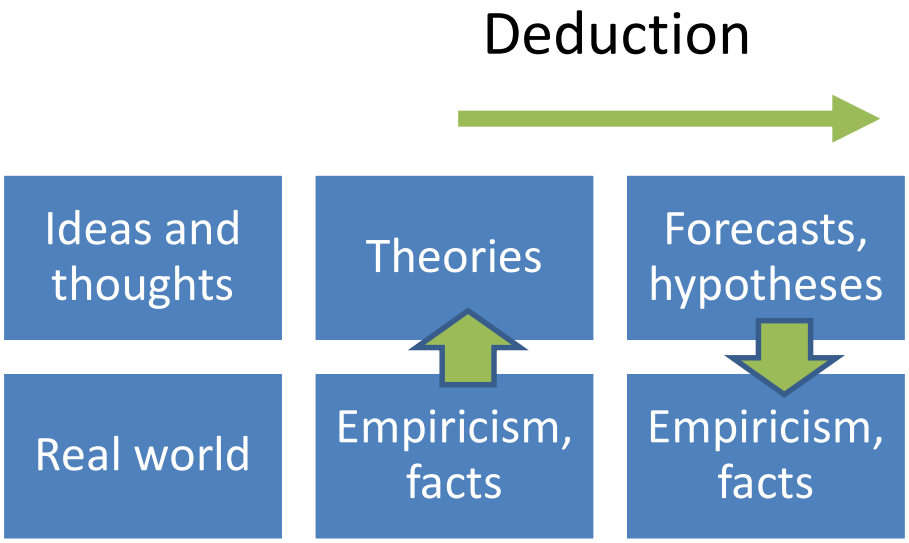

Figure 7 A connection between the theory and empiricism. (Modified from Hirsjärvi et. al 2007, 139).

Quantitative research is also known as hypothesis-deductive research. It can be seen from the figure 7 above that empiricism and theory are relevantly connected. Theories are built and based on real-world observations. Core items of the quantitative research are among other decisions from the previous research, previous theories, hypothesis, data collection, creation of factors, and data analysis. (Hirsjärvi et al. 2007, 135- 139.) Quantitative data is numeric and under investigation is the frequency of the phenomenon (Kananen, 2008, 10).

4.1 Case Study as a Research Approach

An important and a characteristic fact of a case study is that a case research strives to find a resolution for a research problem and questions. It will be enough to present a resolution since if a research proceeds to testing or to implementation phase it is already a development or an action research. (Kananen 2013, 15.) Vilkka (2021, 103) also mentions that in a case study type of research it is important to get the research case as clear as possible with supporting literature and materials. When combining materials, it may be a case that some sources will be overwritten by other materials.

A characteristic feature of a case study is that there is also an empirical part of the phenomenon with a real-life context included. Robson (2002, 178) mentions that a case study utilizes data from multiple sources for evidence. Yin (2003) supports that thinking and that a case study has borders between the phenomenon and the context which is under the research. A case study as a research strategy is especially recommended when there is a purpose to gain more understanding of the context and the processes under investigation. (Saunders, Lewis & Thornhill 2009, 145-146.)

Simons (2009) states that a case study explores a unique single case. It can have reference to other cases but the key is to understand specifically the individual case. A case study is also an empirical research that investigates real-life context utilizing multiple sources for evidence (Kananen, 2013, 54). The case study itself is not focusing on to generalize but aims to have a clear understanding of one specific case under the research (Kananen, 2013, 9).

4.2 Quantitative Method

Quantitative research goes from one to many and the purpose is to generalize. Items selected for the research will represent the whole population. A driving factor for a quantitative research is that the phenomenon has to be specified first before proceeding with the method. Recommendation is usually to use qualitative research method for new phenomenons since when it is

not known well enough, the qualitative will support better to get the first understanding. (Kananen, 2008, 10).

4.3 Qualitative Method

Qualitative research method can be used when the phenomenon is not known well enough. Qualitative research tries to normalize and give understanding about the phenomenon. Kananen says that the qualitative research is the start of all the the research work. Quantitative research does not support hypotheses. (Kananen, 2014, 16,17,57)

Clarity and create new information on the phenomenon are the main aims of qualitative research. There are several ways to analyze qualitative data. These are for instance Thematic Analysis, Typification, and Classification. (Eskola & Suoranta, 2014, 138, 161)

5 Thesis Implementation and Analysis

This thesis is using both quantitative and qualitative data. The data from the health score system is in a key role but it is supported by the interviews. Characteristic for a quantitative research is that it aims to go from one to many, meaning it will generalize the phenomenon. Quantitative research use usually a limited dataset but that represents a bigger population. Results in a quantitative research will be processed with statistical methods.

Data analysis and conclusions are presented as a thesis outcome. Commissioner company's data is used in the thesis for an analysis. This goes to a specific case for Customer Health Score so a case study as a research approach was a valid selection. A case study aims to deliver an understanding for one case. In this thesis, health score data was analyzed and recommendations plus development proposals were given by the outcome and results of the data analysis both from the quantitative and qualitative data.

The research questions for this thesis were:

- How does the Customer Health Score tool output help in building better customer success?
- How does the Customer Health Score tool output help the commissioner organization to work proactively and give predictive warnings of unwanted results?
- How could the Customer Health Score tool secure the case company´s future revenue?

The case company has started an internal program to build a Customer Health Score tool to support such scenarios that it is not only the health score value itself, but the score should support different stakeholders and departments in the best possible way when facing and working with the customer accounts. This use of the health score tool goes for predictive analysis, early warning signals, and other proactive actions in the vendor organization. A health score system is an internal tool for software vendor organizations to see, monitor, and act from the customer account

management perspective by utilizing the data from different sources to get the health score value and other valuable information.

The case company operates in a B2B SaaS environment. To be able to serve better big and global customer base and to be on top of coming changes in the future. The company has started a program to analyze different customer-related data which would help as a base in the customer health scoring mechanism. The initial program with the POC type of data and the results will show and convince the possibility to go further. Options are either to have an internally built tool for the Customer Health Score or alternatively some commercial platform.

The case company has thousands of customers around the globe. Customer companies are from all industries and from big global enterprises to domestic firms with only few employees. This sets a nice but big and challenging variation between the customer accounts. Naturally, there are also large and strategically important accounts that need more attention and resources to work with them to secure the optimal high touch with the customers.

5.1 Data Collection in Practise

The research methodology in this thesis leans to a deductive method in the quantitative part. In the research, data will tell a lot and the data analysis will show how it supports the theory (Kananen, 2013, 49). Since the health score data is taken from multiple different data sources from the commissioner company systems.

5.1.1 Quantitative Data, Customer-related Data

Data in this research is from the commissioner company´s customer-related data that is prepared for the customer health score tool. Every enterprise can choose their customer health score data independently as mentioned earlier. The case company selected to use Google Analytics to track

document transaction data for customer usage in SaaS services. For customer satisfaction surveys there are own survey tools which are used for the surveys so feedback data was received from there. A customer responsible, either Customer Service Manager or Customer Success Manager will record account status to a shared spreadsheet on monthly basis. This is called CSM sentiment and that data can be fetched from an external file. Financial data is pulled from the company´s billing system and a cloud revenue is taken from 12-month rolling period. Helpdesk data, number of support incidents, and resolution times are taken from the support system. Personal data is fully excluded from the health score data so individuals cannot be identified.

Customers are producing a great amount of data for the case company. Customers are also delivering hidden signals in their digital footprint. Data should show these, what kind of trend a specific customer account has had and what is the current pulse.

For the thesis analysis data, the data described below was selected from and the valid data point from 3 months time period, October-December 2021.

- ✓ Adoption (Customer account adoption rate for a new user interface that has been available for some time already. A new user interface has plenty of additional features and is based on the newer technology that works in any up-to-date web browser without any separate add-on installation. The service for which this new user interface goes is not in use for all customers, so this data is not available for all customer accounts. Scale in 0 – 100 % usage for each account the new user interface is active.)

- ✓ CSAT (Customer Satisfaction Score, customer feedback given to support incidents after the support ticket is closed. Action is optional for the customer and the number of feedback varies from customer to customer. Scale in CSAT feedback is from 1 to 6, discrete values (1,2,3,4,5,6). CSAT value may not exist to every account and for each month if feedback is not given.)

- ✓ CSM Sentiment (Customer responsible for filling in the monthly score of the customer account status. The scale is from 0 to 2., discrete values (0,1,2). This is available just for the biggest and most important customers where the Customer Service Manager / Customer Success Manager (CSM) person is involved. This data is available for each month.)

- ✓ Finance (Cloud revenue in last rolling 12 months period. This is a euro revenue. Three months average is calculated and the average for the same period from the previous year 2020 is deducted. This indicates that has the revenue increased or decreased. Data is available for each month.)
- ✓ Support (Average resolution time of support tickets was selected here for all three months and their average was calculated and used for the analysis. Data is available for each month and for every account but can be also 0 if no single support incident is recorded.) Resolution time is calculated and presented in days and hours.

Above data sources, data buckets, were collected first into a Microsoft Excel file. Some cleanup and preparation activities were needed to prepare the data for the statistical software. Preparation work included, for instance, removing duplicates, and cleanup that the data values were in the defined scale for instance adoption cannot be negative. This work was done in the Microsoft Excel tool.

After the data preparation work, data was moved to the statistical program PSPP which is a free software and a good alternative for a well-known commercial statistical software SPSS. PSPP software has more limited functionalities than SPSS but is a tool that can be used in the quantitative research for data analysis.

The selected dataset contained data for 205 customer accounts and their calculated data points in the defined time period for all 5 data buckets.

5.1.2 Qualitative Data, Customer Interviews

To support the quantitative data from the health score dataset from the commissioner systems. Qualitative data was gathered as well in the research. The primary data was collected from customer interviews and leaned to an inductive research approach.

There were five participants selected to these interviews from the commissioner company´s customers. The interviewees were not connected directly to the health score data of their individual organizations. In the interviews, the focus was to get data on a general level.

The interviewed persons were first approached by email and by sharing a background information regarding the research. *ParticipantConsentForm* (appendix 1) was shared with all interviewees also in advance. The consent form highlighted the anonymity of the interviewee and their possibility to withdraw from the interview at any moment. All interviewees gave a permission to record the interview session.

Interviewees were selected from different roles and levels in the organizations. This brought a better outlook on how the discussion themes were seen in different organizations and organization ladders. Interviews were conducted in the interviewees' native language. The interview length was approximately 45 minutes each.

Table 3. List of interviewees with their roles in the organizations, organization size, and the interview language

	Role in the organization	Organization size (number of employees)	Interview language
1. Interview	Director, IT solutions	10 000 – 50 000	Finnish
2. Interview	CFO (Chief Financial Officer)	1 – 100	Finnish
3. Interview	Systems Manager	100 – 500	Finnish
4. Interview	System Coordinator	5 000 – 10 000	English
5. Interview	Global Process Owner	50 000 – 100 000	Finnish

Questions and discussion themes for the interviewees were as below:

- 1. Key Elements of the Success
- 2. Will the Service Experience have a connection to the buying behavior in the future?
- 3. Data, is it powerful and reliable to do certain predictions?
- 4. Feedback channels and indications of performance and quality changes
- 5. Top business pain points, development areas, or such where the message is not going through to the service provider

All interviewees were informed in advance that they could respond related to the services the commissioner company is providing or alternatively talk the responses to a more generic level covering SaaS service providers in overall. For the researcher, the latter type of responses were under a higher interest since in this qualitative data part it was not an idea to connect the responses directly to the corresponding health score data for the same organization.

Some of the discussion topics were direct questions. It was not accepted to deliver a Yes/No response and all interviewees opened the themes much more in their responses.

5.1.3 Reporting of the Summary of Customer Interview Responses

The transcription of customer interviews is summarized in this section. Data analysis is presented in the section 5.2.4. (page 45)

Question 1, Elements of Success

Interviewees saw the service reliability and availability as key items. Also tool efficiency and performance in daily use without delays plays a big role. Since there is always something that raise requests, Helpdesk actions were also seen very crucial together that the service will be available on the requestors mother language.

Service upgrades and changes in the services require clear communication and notifications. There is no room for customer specific customizations to get impacted by the service changes.

Tool and the service user friendliness has to be on a level that it is as convenient as possible for the end-users.

The expectation setting has to be on the right level. What the customer ordered and was promised to be delivered has been met. One example, service reaction time in the Helpdesk activities, is it hours or days?

Service quality and the joint governance are crucial for the cooperation. The customer is buying end-to-end service and the Service Manager is in an important role to push items forward in a right way in both organizations.

Question 2, Buying behavior in the future

“Absolutely reflects to additional deals and future services.” There will be no new deals if bad experience from the previous deliveries since the price is not necessarily the meaning one. Good service experience has always been a good base for the future actions.

In some rare cases it may also be a case when buying is a bit forced when the entity is so big for instance Enterprise Resource Planning (ERP) system that there are practically no other options or at least no quick solution that would be an option.

Time will eventually fix it if the service provider takes an advantage from the fact that despite the bad service experience the customer does not have an option to move away. Such situation is not fruitful for the cooperation.

If possible, not optimal situation from the customer point of view to be in connection and dependant on only one vendor. Cost for the change and capability to change matter also.

Question 3, The power of data

Data is nowadays a base for a decision-making but can be a double-edged sword as well if the data quality is not good. The quality level of the data has to be verified to really trust on the data. Not all potential of the data usage is unleashed yet.

In some cases, it is not so clear directly what the data tells. It may require expertise to do the data interpretation so that it can be trusted well enough. A starting point is to know that where the data has come from and what kind of values are realistic. Data may also bring up a “Black swan situation” so something that was not known to exist before.

Software robots have become very common to handle the data but it is not possible to utilize the data directly. Human needs to validate it first that the data is suitable for the usage.

It is crucial to do certain decisions and corrective actions with the data. Data helps streamlining since different persons may have different opinions.

Question 4, Feedback channels

It is usually a limited number of respondents and not necessarily giving the full picture about the situation. Visibility for the enhancement requests to the used services from the own organization and shared by other organizations is not given.

A health of the system would be a good indication for the successful development and future changes.
Feedback channels are key for a successful cooperation. Significant difference can be made compared to other suppliers and competitors if the feedback channel is working well.

Super important topic! It is always that it would like to be part of the resolution not part of the problem.

Some topics can be really challenging to explain, and the communication in a foreign language does not help. If not always up to date in the information flow you will lose it and it will be hard to catch up afterwards. It may be easier perhaps for a person working frequently with support tickets for instance.

Working feedback channels are the base for the cooperation and a significant advantage in the competition is to be achieved with a powerful communication.

Helpdesk and customer support are hidden strongly to the ticket system. It requires customer focus and interaction to the support cases and way too much on the tickets nowadays compared to direct calls. Call is usually much faster and more efficient way for a resolution.

Helpdesk is not knowing enough from the customer environment. Customers may be willing to pay from a dedicated team and expertise from the support organization to achieve the best service.

Question 5, Business pains in the service

There are number of products and services in use. A common problem is that there are no faces to the work but a new name case after case. This causes too much start from the beginning and basic facts and no understanding of the customer environment.

Much better service experience achieved from smaller organizations. They are agile and the given service feels personalized. Also, back in the days people came on site and all happened as face to face communication.

Named contacts are the key and it is crucial that you can trust that there is someone taking your issue forward and the resource comes back to it with status updates.

It is a major item that the contract is followed. What is agreed in the contracts is crucial and a major item for the cooperation.

A feeling-based items are very hard to explain to a non-technical person. Many times management and decision-makers are non-technical and too far from the roots.

Proper tracking is often missed. Not good that something that was developed today was already in the discussion years ago but due to personnel changes in the organizations etc. no good visibility to the history. Also too much data in the knowledge base type of sources. It is not supporting the idea well enough to find information as a self-service if you get 1000 hits you give up easily.

The terminology used with the customer is sometimes too technical or internal for the vendor organization. The customer needs to understand and would be also good to acknowledge that the message is understood.

"The customer is on the sea and nothing seen on the horizon". Especially important in sales phases since the customer may not know where to go, just seeing problems everywhere. Many times, the issue that raises may connect to something that has originally happened already months ago. Active seeking from the vendor side how they may help and bring value to the customer.

It is important to know the customer setup and the environment. The customer does not care about the product lines and how the provider is organized. Is the offering just a small portion or an end-to-end solution for a certain process? All parties need also to work efficiently and jointly. Once there are fewer issues, there is also less work for an unproductive type of work.

5.1.4 Reporting of the Commissioner Company Interview Responses

Interviewees were conducted also in the commissioner organization. Number of interviews was two and the main idea was to get qualitative data from the commissioner side. The Customer Health Score is for the vendor company use so this interview data gave the thoughts and better understanding from the internal organization.

Same procedure was followed in the commissioner interviews as well. Interviewees were contacted in advance by email and a background information regarding the research was shared. *ParticipantConsentForm* (attachment 1) was shared also with internal interviewees. Participants had possibility to withdraw from the interview at any moment. In both interviews the permission was received to be able to record the session.

For interviews, the persons were selected based on their role and knowledge about the Customer Health Score topic already. Interviewees native language was used in the interviews. Length of the inverviews were about 30 minutes each.

Table 4 List of interviewees with their roles in the commissioner organization and the interview language

	Role in the organization	Interview language
1. Interview	Director, Operational Excellence	Finnish
2. Interview	Director, Operational Excellence	English

Questions and the discussion themes for the interviewees were as below:

- 1. Why the Customer Health Score is important?
- 2. How the Customer Health Score will be developed?
- 3. How the Customer Health Score will be utilized in practice?
- 4. What kind of risks the Customer Health Score may have if any?

5.2 Next Level Approach to Data Analysis

In this data analysis, the focus is to find patterns and trends to support to set possible alerts and predictive analysis. All the previous will lead to better Customer Success when preceding steps are successfully balanced.

Figure 8 Actions based on the health score tool. Modified from Filenius (2015, 183).

A traditional model to be reactive and get the feedback first from the customer is not an optimal way to work nowadays. It can be too slow and until concrete and corrective actions and improvements are shown. A new model and a way of working and the recommendation to the commissioner company related to health scores, is to go to the proactive mode based on the data. Figure 8 above, shows that instead of waiting for customers to tell, alerts and monitoring can be set based on certain target levels to trigger alerts when there are too big variation in the data. For instance, health score values dropping too much. With a bigger amount of data, it will be possible to do predictions for the future as well based on the previous trend how the Customer Health Score and the customer status eventually will evolve. If no changes are done, the overall health may come down significantly. All the actions that will be done proactively will lead to better Customer Success if the actions done are the right and corrective for the original issue.

5.2.1 Descriptive Statistics

To visualize the linear connection between the variables, a Scatterplot graph has been taken from the PSPP statistical tool for all ten data pairs in the correlation table (table 6). These graphs are available in the thesis work appendix 2.

The second selected item to visualize the data and the connection between the variables is histogram graphs. In the histograms, it is well visible how the data points were spread out, and not all occasions had data available. These graphs are found in the thesis work appendix 3.

The third method used for validating the normal distribution was Kolmogorov-Smirnov Test. The significance value for Kolmogorov-Smirnov Test should be greater than 0,05 (ScienceDirect 2022). This means that the data is normally distributed. The finding here is that the Kolmogorov-Smirnov Test gives normal distribution only to CSM data. These graphs are presented in the thesis work appendix 4.

Table 5 presents all data variables and their selected key values describing linearity. The outcome based on the Kolmogorov-Smirnov is that only CSM data has a p-value greater than 0,05. The conclusion is that the used data does not follow a normal distribution in CSAT, Adoption, Finance, or Support categories.

Table 5 Collection of key measurements in data linearity

	N	Mean	Standard deviation	Min value	Max value	Kolmogorov-Smirnov Test value	Kolmogorov-Smirnov Test significance value
CSAT	85	4,08	0,83	1,00	5,60	1,67	0,004
CSM	35	0,83	0,79	0,00	2,00	1,24	0,073
Adoption	68	0,77	0,25	0,50	1,00	2,99	0,000
Finance	205	54384 eur	226120 eur	-1326333 eur	964505,10 eur	2,48	0,000
Support	205	17,4 h	32,68 h	0,00 h	179,09 h	4,26	0,000

Since the commissioner company has customers around the globe, there are also bigger customer accounts that consist of multiple entities. This is an interesting area since in the health score data there may be for instance a sub-account in Europe and another one in Asia but both belong to the same corporation.

5.2.2 Data Correlation Analysis

The data analysis was followed by finding a correlation between the data variables. This was taken by using Pearson values. Pearson´s correlation coefficient between the variables is shown in table 6. For all values above 0,3 correlation, there is a correlation or strong correlation between the values in the cases where the value is higher than 0,7. Below the 0,3 value, the correlation is weak or there is no correlation at all between the variables. (Tähtinen et al. 2020, 186).

Worth mentioning already here is that “CSAT“ (customer feedback for the support incidents) and actual resolution time of the support incidents “Support” datasets. They do not correlate or the correlation is very weak with the value -0,167. The assumption would be that the Support Service resolution time would correlate with the CSAT but that is not the case with this data this time. The customer satisfaction could most likely be higher if the case resolution time is shorter.

In overall, the correlation between the variables seems to be only with variables CSM-CSAT where the correlation is negative, -0,584. All other pairs have a correlation value less than threshold level 0,3.

Table 6 Correlation table between the data variables (n=205)

	Adoption	CSM	CSAT	Finance	Support
Adoption	1				
CSM	0,154	1			
CSAT	0,026	-0,584	1		
Finance	-0,113	-0,073	0,002	1	
Support	-0,092	-0,197	-0,167	0,189	1

5.2.3 Data Observations

In the selected dataset, some special observations were found. Big organizations may have several contracts with the commissioner. These contracts can be for instance region region-based. Below figure 11 illustrates a case where a global customer account has services in use in multiple regions. Regions can be for instance Nordic countries, Central Europe, USA, Asia or Australia.

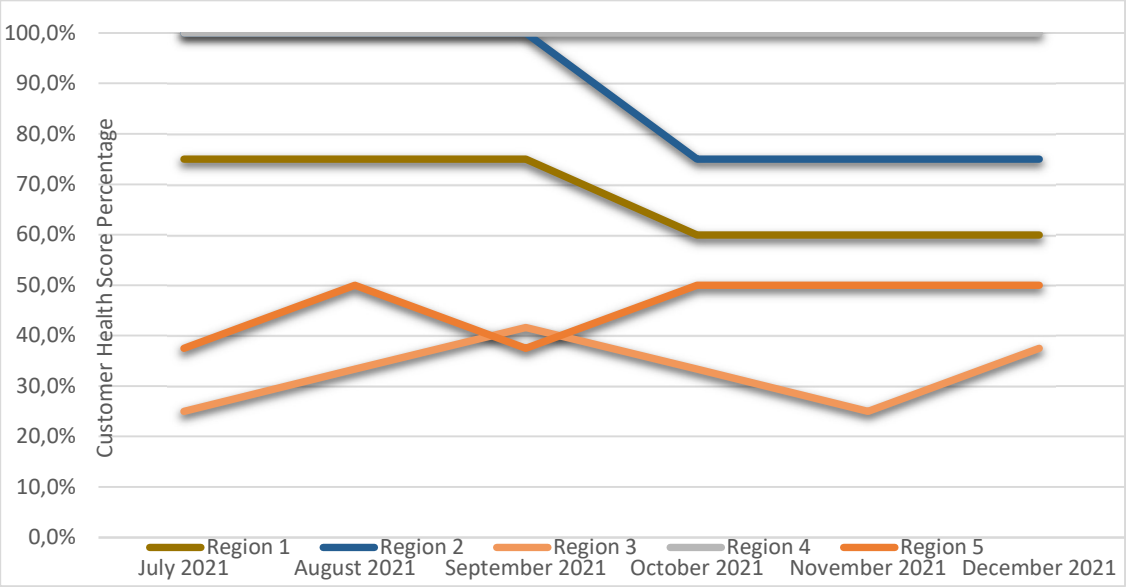

Figure 9 An example of a bigger customer organization consisting of multiple sub-accounts

The above data shows that there can be a relatively big variation in different territories inside the same corporation, how the health score output turns into a final score. The upper section shows that the account would be healthy but the bottom part is fully the opposite. This is a very crucial and describing example that every action counts and has a meaning to the final output and the health score value for big global multi accounts. The recommendation here is to, first at all, highlight the multi-account cases so that it is well-known that the entity has multiple inputs impacting the Customer Health Score. Then also to consider for instance a median value of the health score data. Would it be reliable enough for these cases?

All dataset (205 customer accounts) and their final health score values during six months period is illustrated in the figure 12. Each line represents one customer account. This graphical view of the data shows that there is variation even with the same accounts and between different months. This is natural that it is not all the time flat values but gives also the possibility to set levels and trigger alerts which level is already too concerning or needs immediate actions in the organization for instance.

Figure 12 illustrates also healthy levels of customer accounts with their percentage values. Green equals to a healthy category and it goes for health score values above 70 percent. The neutral category with yellow color is for health score values between 50 to 69 percent. Orange color is for the not healthy category. Here, the percentage interval is from 20 to 49 percent. Red corresponds to a customer category, sick. The health score values in red are from 0 to 19 percent. It is good to see from the figure that the majority of the score values seem to be on a "good" area but there are certainly accounts that need attention and corrective activities. It is also visible in the data that there has been significant improvement in the health score values during the selected focus period. Light green line, for instance, going through the whole scale from 0% to 100% in 6 months time.

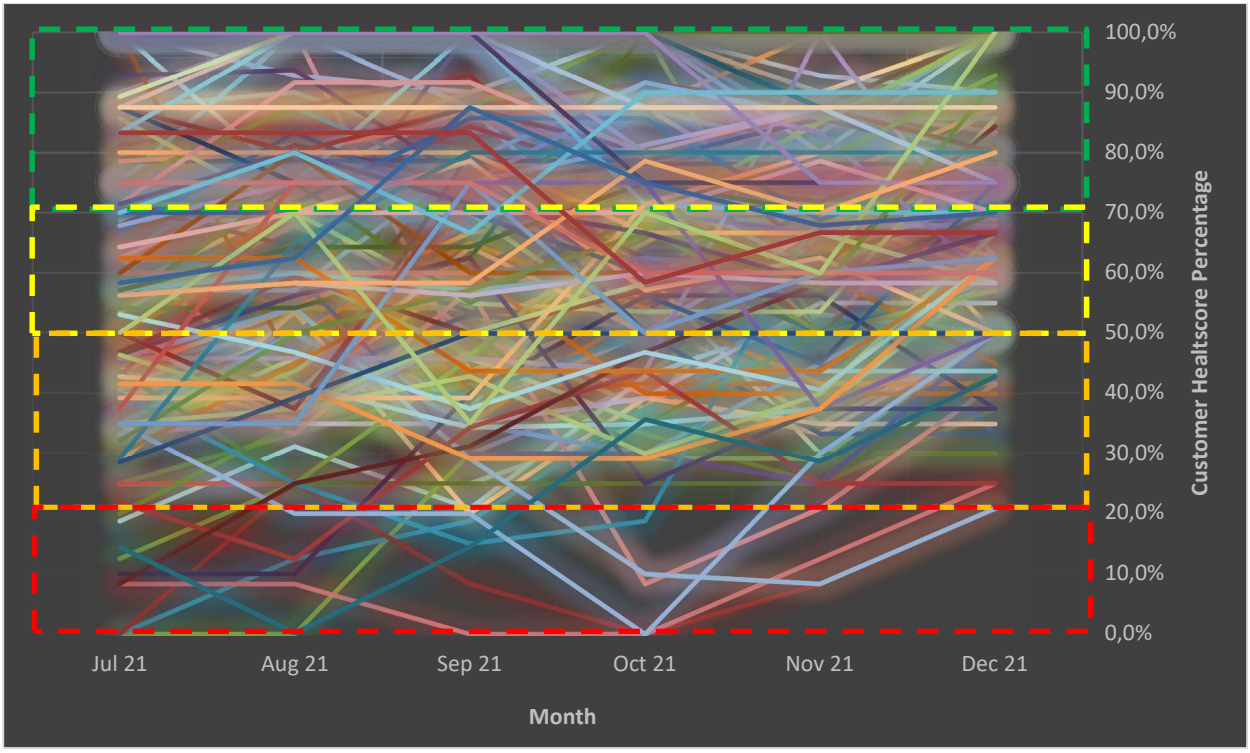

Figure 10 Customer Health Score value illustration with health levels

5.2.4 Qualitative Data Analysis

Customer interviews

Interview data was reduced to more simplified form. From the interviews the following themes were identified:

- ✓ Service reliability and availability
- ✓ Price of the service is not meaning all. Good service experience is more important
- ✓ Not to be dependent on one vendor
- ✓ Data is powerful in the decision-making. Data needs to be understood and helps in streamlining in the organization
- ✓ Limited number of respondents participating surveys
- ✓ Feedback channels are key for the successful cooperation
- ✓ "Would like to be part of the resolution not part of the problem"
- ✓ Customer specific competence needed when delivering the service
- ✓ Named and designated contacts
- ✓ Work efficiently toward joint goals

The Customer Health Score Tool aims to give a holistic view from the customer accounts statuses to SaaS vendors. Customers value high-level service reliability and availability. Secondly, the data needs to be understood well enough to be used for decision purposes. Thirdly, even though data-driven processes and activities have grown. The customers highlighted a joint human to human work with designated contacts.

Commissioner internal interviews

- 1. Why the Customer Health Score is important?

Original expression	Simplified expression	Subcategory	Main category
Tärkein elementti on varmistaa että hankittu revenue pysyy talossa	Secure revenue	Revenue	**ARR**
Pystytään hakemaan laajennusta eli lisää revenueta	More revenue	Extension	
We could perhaps see an expansion opportunity	Expand the business	Growth	
Kyetään tunnistamaan osa-alueita tai teemoja joille pitäisi tehdä jotain	Identify themes and needed activities	Corrective actions	**Actions**
Tapa sitoa cross-functional prosesseja yhteen	Connect processes	Collaboration	**People**
Different persons have dissenting opinions of the customer statuses	Different opinions	Opinions	

- 2. How the Customer Health Score will be developed?

Original expression	Simplified expression	Sub category	Main category
Halutaan paljon dataa sisään. Samat datalähteet on oltava saatavilla kaikille asiakkaille.	Lots of data and data-sources to be same for all customers	Data and data sources	**Data sources**
Health Score ei saa olla liian operatiivisiin asioihin pohjaava mittari.	Also other than operational items to be included in the Health Score	Health Score sources	
We will add more product adoption since it is a very good indicator of health.	Product adoption is a good indicator of health	Product Adoption	**Product Adoption**
Suggestion has been that not to change the Health Score items too often since it will be hard to look at it historically.	Not to change the Health Score measurements too often	Changes in the tool setup	**Development**
Development will be ongoing and constant thing anyway so it will not be a static.	Constant development work	Development	

- 3. How the Customer Health Score will be utilized in practice?

Original expression	Simplified expression	Sub category	Main category
Sopimusten tarkastelu etupainotteisesti.	Contract review	Expiring contracts	**Contracts**
Mietitään mikä on asiakkaan Health tilanne.	Customer Status	Health	**Customer Health**
Esimiehet saavat raportin aina halutessaan ja vanhat subjektiiviset näkemykset eivät päde.	Managers have always up to date data available	Available data	**Data**
Customer Health Score on actioneiden mahdollistaja sisäisesti. Vanhat subjektiiviset näkemykset eivät enää päde vaan kaikki katsovat samaa dataa.	Customer Health Score makes it possible to do corrective actions. No more based on the feeling.	Correction actions	**Actions**

- 4. What kind of risks the Customer Health Score may have if any?

Original expression	Simplified expression	Sub category	Main category
Yksi riski on että tehdään liian monimutkaista. Health Scorea ei voi myöskään muuttaa jatkuvasti.	Risk that it comes too complicated	Data quality	**Data**
Osa asioista mittaa samaa.	Measure the right things		
Historically we have had data in many many places.	Available data		
Meidän busineksessa asiakkaan oleminen keltaisella ei välttämättä tarkoita että asiakas on lähdössä.	Business specific behavior		
We need to make sure we bring in the right data. We can´t just laser random data to picked up.	Right and quality data		
Ihmisten ymmärrys että kestää aikaa että asiat muuttuvat.	Understanding that things take time to change.		

Tarvitaan realismia että yksittäinen pieni liikahdus datassa ei välttämättä aiheuta mitään massiivista sisäistä eskalaatiota.	Understand the data behavior.	Understanding and right kind of expertise	**People**
Paniikkitilanteiden välttäminen vaikka Health Score data olisikin punaisella.	Understand the data content.		
We need to train the teams so that everyone understands what they need to do. Also a guideline is needed what to do if the customer is on red or amber.	Guidance and training for the people.		

5.3 Summary of the Results

The selected data in the POC represented a good variety of the commissioner company´s customer accounts from a global perspective. The dataset for the quantitative part was limited but gave a good view and approach as a POC thinking to have such results that can be analyzed and to get a confirmation that are the selected data sources reliable and is there a possibility to proceed further from the POC setup.

Qualitative data which was collected from the customer interviews gave a good outlook what few customers could share about these topics. There were many recurring themes from several interviewees but also some new areas to be considered for the service delivery organization.

In overall the thesis research opened the customer statuses from multiple angles. The quantitative data gave the hard facts what the data told and was not perhaps known earlier. Then the qualitative part from the customers gave the general view from the field from the customers directly. In the service business, it is really important to listen to customers and take the feedback from them to both positive and to constructive areas to be able to enhance the service and customer experience.

Customer Health Score is topical in many businesses and this approach was all new that can there even be such data that the outcome would be reliable? Thesis author got such questions and comments several times during the process. As mentioned already earlier, some cleanup was necessary to do since not all the data was available for the targeted period. To calculate the Customer Health Score value from just one or two data sources might have been too misleading and not giving the right kind of status of the customer health and trend.

All data was authentic and not modified for the research purpose to make it look better or more suitable for the research. Also, the customer interviews were arranged in an open atmosphere where the interviewed person could openly tell related to the discussed topic and share as much information as he or she wanted. The researcher tried to minimize any additional questions or items which would have led or influenced the respondents in the interviews but also the interview was kept in a reasonable length, approximately 45 minutes each.

The thesis work strengthened the idea and concept that when combining customer related data from multiple sources. It will generate a tool that can give relatively reliable results of the customer health and trend. This data and Customer Health Score values will help the commissioner organization to focus on the right and the selected accounts based on the data driven model. The same works for any service provider organization on their own data.

The research touched the research questions but this time a response could not be found for all of them. Research question 1: How does the Customer Health Score tool output help in building better customer success? This was quite obivious, the data and to utilize the customer data in a new way in this health score tool will help the commissioner organization in many ways to be on a driver seat and lead the customer success with proactive monitoring and findings in customer data from the customer health tool. This will show as a better service and corrective actions in some cases where the customer has not even realized yet the service quality trend changes.

Research question 2: How does the Customer Health Score tool output help the commissioner organization to work proactively and give predictive warnings of unwanted results? This was already partially responded in the previous section but the predictive warning part is something that was not analyzed too deeply in this research. The author thought that this is something that requires more data and for a longer period. Now the data that was analyzed for 3 months only. All the available data was for 6 months. Triggering points should be set and what is expected to happen if the trend continuous. This may be something that even Artificial Intelligence could be used but requires much bigger amount of data to be able to do such predictions. This is certainly an area that could be investigated further in a possible future research.

Research question 3: How could the Customer Health Score tool secure the case company´s future revenue? This is an area as well where it will be seen in practice how the possible health score will help to secure the revenue. But when thinking about the fact that in SaaS business a lot goes to service agreement retention and expansion. The health score tool and the data gives a good outlook what is ongoing on a certain account and how it connects to upcoming service renewal stage or what is the status of used service features for instance. This lands to a fact that with higher and solid health score values the retention will be more likely than unexpected customer churn.

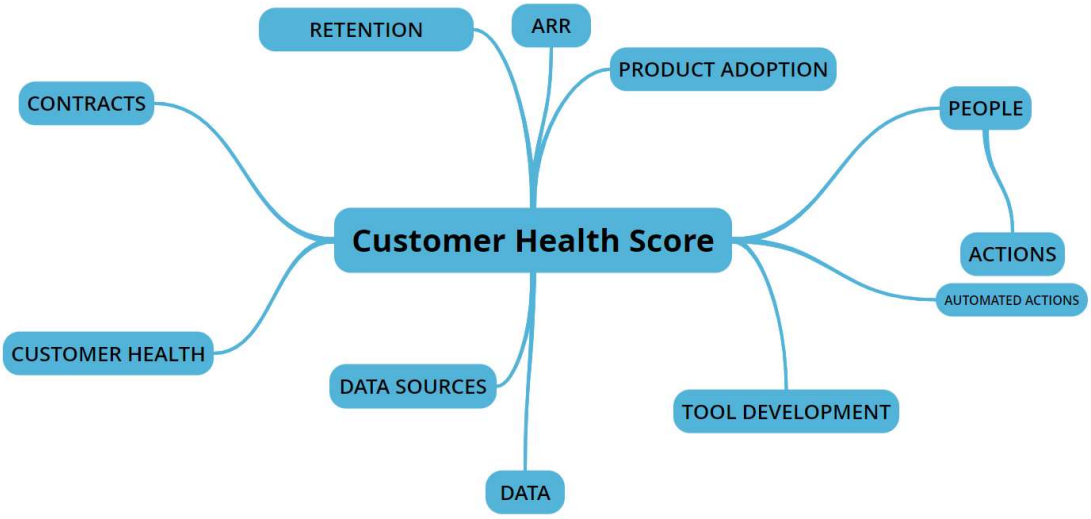

Figure 11 Visualization of the Customer Health Score main categories from the internal interviews

Based on the interviews analysis and finding the themes around the Customer Health Score, there are many items influencing the health score and to other way round as well. These items can be gained from the Customer Health Score for the SaaS organization to serve their customers better and achieve value for both parties.

6 Discussion and Conclusions

Mehta et. al. (2016, 108) talked about the Customer Success being a journey instead of a destination. This summarizes it very well that for a good or preferably to excellent customer success, there is work to do continuously and the work does not end until the whole journey is finished. The aim should be to have also new journeys for returning customers. A traditional way to utilize the data has been to analyze customer satisfaction survey results and do necessary actions. Nothing wrong on that but in today's fast-paced business world such approach is not bringing anymore the optimal outcome for the whole customer account management. This is also a very reactive way to do changes and sometimes it may be even too late for the improvements. Customers may have done their selection and decision for the next steps already. This means they will go with another vendor and lost revenue becomes a reality for the vendor company.

Previously in the Chapter 2 for the Customer Success ClientSuccess (2017) mentioned that customer health is like a milk in the fridge. It is a very good metaphor since there are different types of milk products and in the same way, customers are all different and so are their health statuses. Perhaps the aging has also some impact that the focus may decrease compared to fresh cases. Health status also changes and if it is not followed and monitored in any way, it may go bad unexpectedly.

It is important to be able to work with all customers and react proactively already when first signals appear that things are not working properly. It is much harder to do corrective actions later and sometimes not even possible anymore if a customer has made a decision to go to another path. Value to customer should be delivered all the way during the customer journey and contract renewals cannot be taken for granted until an agreement is signed.

Outstanding customer experience is important, but it also comes from the fact that customers need to be engaged well and build trust in them. Good loyal customers are powerful asset for the vendor company and can be advocates on the field. This is especially important in peer reviews since those tell a lot about the service provider brand. An organization doing vendor evaluation or buying decision wants to see a shared neutral experience and such can influence heavily to their decision-making. Similar way as consumers have access nowadays to thousands of feedbacks given from the service or product, was it as expected and worth of spend.

Customer happiness correlates nicely in many areas and boosts for better and more successful results. Everybody wants to be successful, and it is much easier to work when things are going smoothly and there is a positive and progressive atmosphere. It will also bring certain structure in the cooperation with the customer and will show to the customer and to the vendor organization the current status. Measuring different benchmark levels may be also useful in health check outputs. Gainsight and TSIA companies for instance are one of the leader organizations nowadays in Customer Success and Customer Health Score topics.

Different measure methods can define customer success as mentioned in the previous chapters but also customer health. When items are going smoothly and there is continuous development to better and targeted directions, then also the customer health is usually on a good level.

In this thesis, the research outcome was as expected but the researcher found out that the data that was available was sufficient for the initial analysis but for deeper research much more data and from a longer period would be needed. For a potential future research, multiple health scores per account would be an interesting topic, and also to analyze the data from a longer period to see the customer status trends. This research did a holistic outlook on the quantitative data from the commissioner organization and expanded to qualitative data from the interviews with customers and the commissioner´s internal participants.

Data used in the research was collected from reliable sources and the validity was verified. The Pearson´s correlation revealed that the selected dataset did not correlate well. In this research, the original data analysis approach plan was Factor Analysis with five variables. Further analysis revealed that Factor Analysis was not a suitable method for this dataset. The reasons were that the data was not linear and did not correlate well enough. The selected data followed normal distribution only to one variable according to the Kolmogorov-Smirnow test and did not give greatly credible results in the data analysis but the output was more like a framework how to analyze such data from multiple sources. Persons who joined the interviews were selected based on their roles and the expertise they presented. In the literature review, the selected content was based on the market leaders and experts from decades already in the SaaS business and Customer Success space.

The thesis work increased the researcher´s own professional expertise in Customer Success, Customer Health Score, and Business Management context. The thesis outcome and the value for the commissioner organization was to research and potentially confirm the use and possibility to drive success to the customers, expand the business value, and minimize customer churn. The Customer Health Score will respond to all these areas where agreement retention plays a vital role for SaaS companies. This thesis can be of help to other businesses as well than just for the commissioner company to confirm and show the business value from the customer health related data.

“There is only one boss-the customer. And he can fire everybody in the company from the chairman on down, simply spending his money somewhere else.” -Sam Walton, founder of Wall Mart (Järvi, Karttunen, Mäkilä, Ipatti 2011, 60)

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Appendix 1

KAMK - University of Applied Sciences

Participant Consent Form

Title of the research project

Key factors of Health Score System in Customer Success

Name and position of researcher

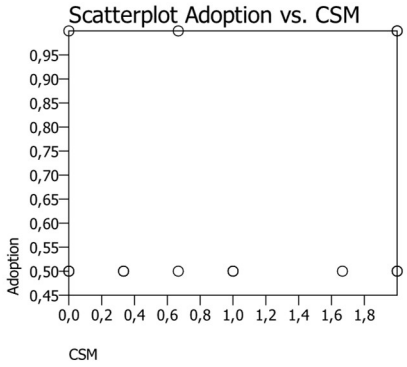
Ville Mäkelä

Master's Degree of International Business Management, Kajaani University of Applied Sciences

1. I confirm I have read and understood the information for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason. ☐
3. I agree to take part in the study. ☐
4. I understand that anonymised quotations from the interview may be used in research publications. ☐
5. I agree to the interview being recorded. ☐

_____	_____	_____
Name of participant	Date	Signature
_____	_____	_____
Name of researcher	Date	Signature

Appendix 2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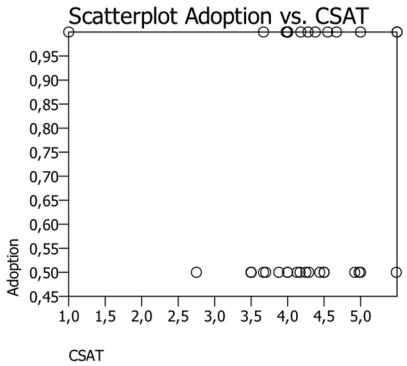
Adoption
CSM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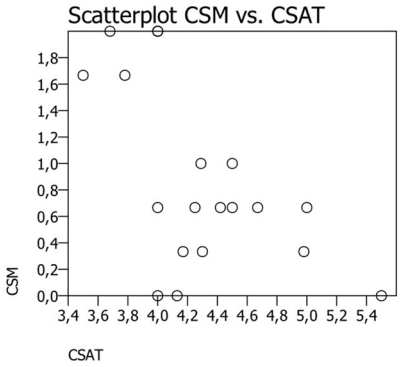
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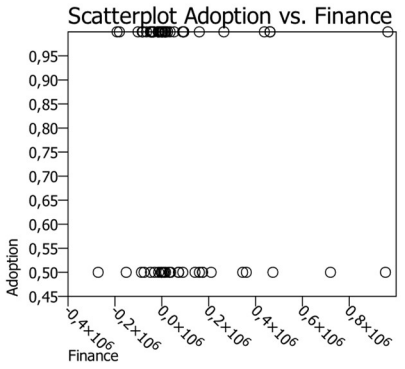
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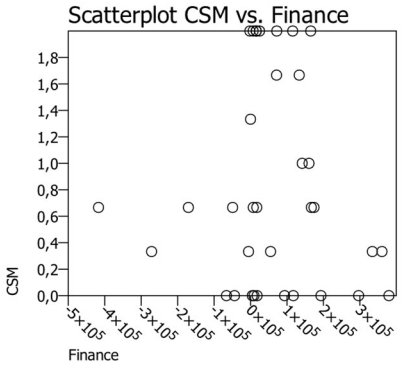
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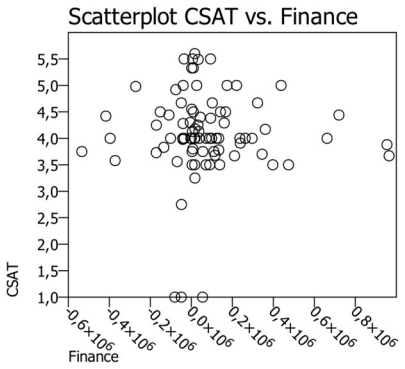
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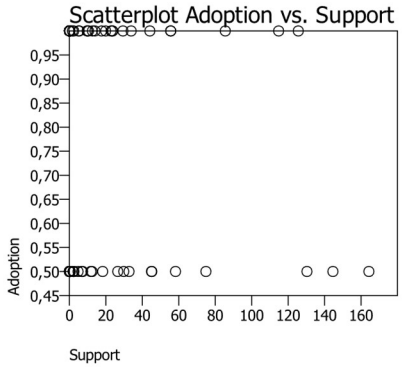
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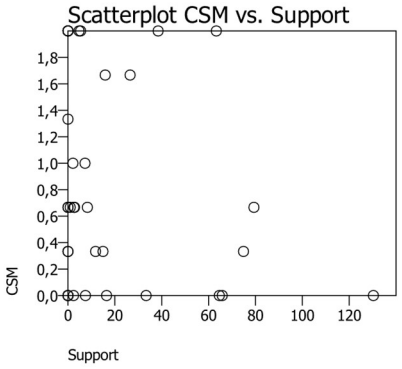
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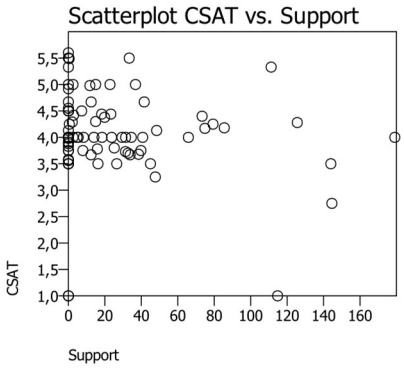
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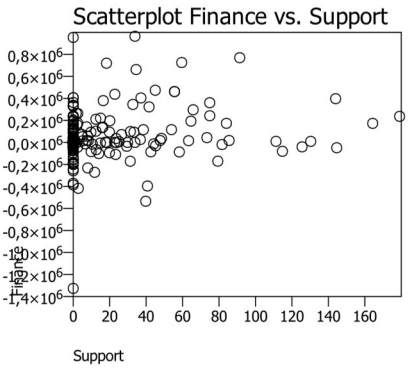
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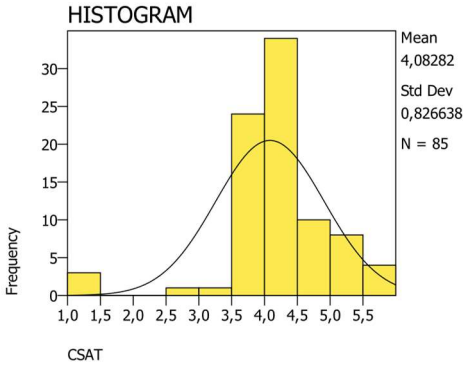
Appendix 3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Std Dev
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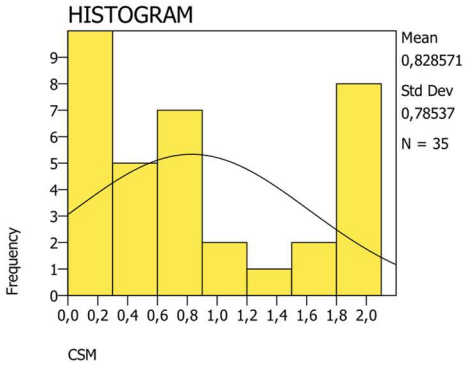
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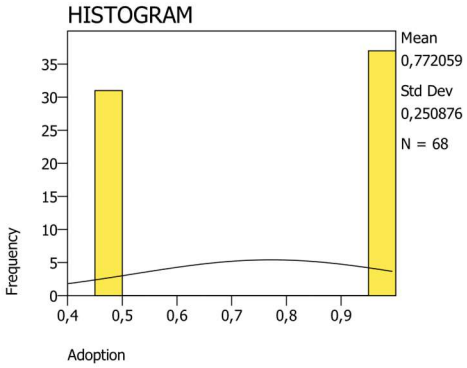
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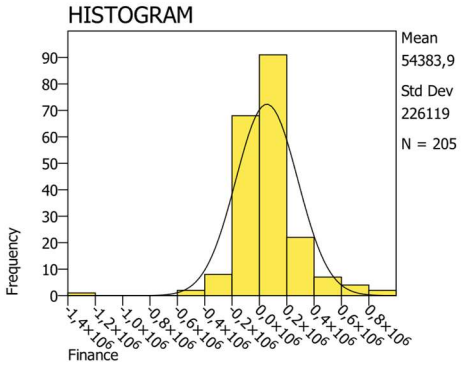
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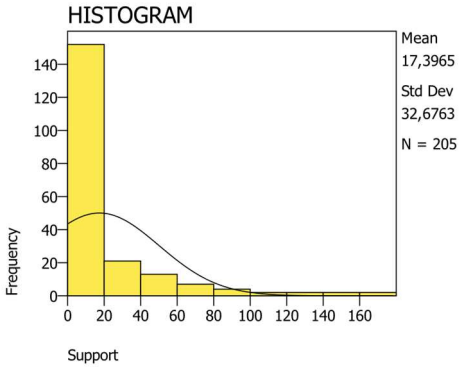
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Std Dev
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Frequency
Support

Appendix 4

One-Sample Kolmogorov-Smirnov Test

		CSAT
N		85
Normal Parameters	Mean	4,08
	Std. Deviation	,83
Most Extreme Differences	Absolute	,18
	Positive	,12
	Negative	-,18
Kolmogorov-Smirnov Z		1,67
Asymp. Sig. (2-tailed)		,004

One-Sample Kolmogorov-Smirnov Test

		CSM
N		35
Normal Parameters	Mean	,83
	Std. Deviation	,79
Most Extreme Differences	Absolute	,21
	Positive	,21
	Negative	-,16
Kolmogorov-Smirnov Z		1,24
Asymp. Sig. (2-tailed)		,073

One-Sample Kolmogorov-Smirnov Test

		Adoption
N		68
Normal Parameters	Mean	,77
	Std. Deviation	,25
Most Extreme Differences	Absolute	,36
	Positive	,32
	Negative	-,36
Kolmogorov-Smirnov Z		2,99
Asymp. Sig. (2-tailed)		,000

One-Sample Kolmogorov-Smirnov Test

		Finance
N		205
Normal Parameters	Mean	54383,92
	Std. Deviation	226119,5
Most Extreme Differences	Absolute	,17
	Positive	,17
	Negative	-,17
Kolmogorov-Smirnov Z		2,48
Asymp. Sig. (2-tailed)		,000

One-Sample Kolmogorov-Smirnov Test

		Support
N		205
Normal Parameters	Mean	17,40
	Std. Deviation	32,68
Most Extreme Differences	Absolute	,30
	Positive	,28
	Negative	-,30
Kolmogorov-Smirnov Z		4,26
Asymp. Sig. (2-tailed)		,000