



**LUND UNIVERSITY**  
School of Economics and Management  
*Department of Informatics*

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# **Banking-as-a-Service and the transformation of the finance industry**

**An empirical investigation**

Master thesis 15 HEC, course INFM10 in Information Systems

Authors: Petrus Aleksii Tuoma  
Walter Edward Ekegren

Supervisor: Osama Mansour

Grading Teachers: Nicklas Holmberg  
Asif Akram

# **Banking-as-a-Service and the transformation of the finance industry: An empirical investigation**

AUTHORS: Petrus Aleksii Tuoma, Walter Edward Ekegren

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ABSTRACT (MAX. 200 WORDS):

This thesis aims to provide a deeper look into the current status of Banking-as-a-Service through digital ecosystems, digital platforms and API economy. Research was conducted as qualitative research, which had a purpose of examining the lightly researched concept of Banking-as-a-Service, and shed light on what is the current status of Banking-as-a-Service by pondering its benefits and disadvantages. The topic was approached from the perspectives of business, technology, and legislation. It turned out that most of the current benefits that Banking-as-a-Service creates, are business benefits, but most of the disadvantages are in the context of technology and legislation. At the moment it can be said that there exists a variety of understandings regarding what exactly Banking-as-a-Service is seen as. Our results bring many new and interesting perspectives to the table, and it can be said that the more and deeper we dive into the whole of what Banking-as-a-Service includes, the more there is width and possibilities, but also disadvantages and immaturity. At the moment the ultimate meaning of Banking-as-a-Service depends on how it is packaged and what it contains, as it is mostly provided for trusted partners, and other actors may then use the APIs according to what the PSD2 enables.

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## Abbreviations

<b>AISP</b>	Account Information Service Provider
<b>AML</b>	Anti Money Laundering
<b>API</b>	Application Programming Interface
<b>B2B</b>	Business To Business
<b>B2B2C</b>	Business To Business To Consumer
<b>B2C</b>	Business To Consumer
<b>B2D</b>	Business To Developer
<b>BaaP</b>	Banking-as-a-Platform
<b>BaaS</b>	Banking-as-a-Service
<b>CaaS</b>	Communications-as-a-Service
<b>CBPII</b>	Card Based Payment Instrument Issuer
<b>DPA</b>	Data Protection Agreement
<b>EBA</b>	European Banking Authority
<b>EU</b>	European Union
<b>GBF</b>	Get Big Fast
<b>GDPR</b>	General Data Protection Regulation
<b>IaaS</b>	Infrastructure-as-a-Service
<b>IDP</b>	Identity Provider
<b>IT</b>	Information Technology
<b>KYC</b>	Know Your Customer
<b>MSP</b>	Multi Sided Platform
<b>OBWG</b>	Open Banking Working Group
<b>OIDC</b>	OpenID Connect
<b>PII</b>	Personally Identifiable Information
<b>PISP</b>	Payment Initiation Service Provider

<b>PSD</b>	Payment Service Directive
<b>PSD2</b>	Second Payment Service Directive
<b>RP</b>	Relying Party
<b>SaaS</b>	Software-as-a-Service
<b>SDK</b>	Software Development Kit
<b>TPP</b>	Third Party Providers
<b>UK</b>	United Kingdom
<b>WTA</b>	Winner Takes All
<b>XaaS</b>	Everything-as-a-Service, Anything-as-a-Service



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# 1 Introduction

This introduction -chapter will introduce the fundamentals that creates the ground for our thesis. We provide a short introduction to the topic, explain the background, research problem and the research gap. Furthermore, we present the purpose and research question of the study, and then the frame of reference with limitations, and the most significant previous publications. Lastly, we describe the outline of our thesis.

## 1.1 Introduction to the topic

Both Banking-as-a-Service (BaaS) and Open Banking are relatively new concepts, they are of interest because the banking and financing sector are under a lot of pressure and upcoming change especially within the European Union (EU) and its market, because of new legislation and directives. We look into what the definitions and keystones that can be found are, and via our literature overview we form our understanding of the concepts, through our empirical part we then compare this understanding to how the status of BaaS is seen by relevant contacts in the financial sector at the moment.

According to Gozman, Hedman and Olsen (2018) there is almost no academic research done regarding Open Banking. Also based on our interpretation, there are a very limited yet recently growing amount of academic research to be found regarding BaaS, which goes hand in hand with what Gozman, Hedman and Olsen (2018) stated to be the case for Open Banking a few years ago. One definition is from Remolina (2020), who recently defined BaaS as what banks can right now via APIs develop into services provided online and that are outside of the traditional brick-and-mortar bank services. It is also important not to mix up the terms and abbreviations regarding Banking-as-a-Service (BaaS), which is not to be confused with Blockchain as a Service (BaaS), used as an example in the research done by Singh and Michels (2018).

Furthermore, the term Open Banking is defined as “*Open Banking is the secure way to give providers access to your financial information.*” by Open Banking Limited (2021). According to Brodsky and Oakes (2017) again, “*Open Banking can be defined as a collaborative model in which banking data is shared through APIs between two or more unaffiliated parties to deliver enhanced capabilities to the marketplace*“. They also list some potential benefits that Open Banking might allow for such as new and more sustainable service models and a better customer experience. Interestingly, the second definition for Open Banking and the definition for BaaS from Remolina (2020) are quite similar.

Gozman, Hedman and Olsen (2018) look at the Open Banking concept from a perspective of financialization and states that Open Banking has mostly been used by specialists. They continue by stating that the term is connected to a development and view regarding transformation from old and closed institutions to more open and transparent ways of working. This can be a difficult change for banks which has been seen as having solid reputations and usually operating in strictly regulated environments, in addition they might be afraid of risks regarding security and privacy and via this again worried about their reputation (Gozman, Hedman & Olsen, 2018). Also stated by Brodsky and Oakes (2017) banks are used to provide the role of protecting their customers data. However, even if there are risks with sharing data, it is

important to via the right processes and governance, keep up with the development such as the Second Payment Service Directive (PSD2) and keep customer transparency in mind.

Open Banking combined with other new innovations such as several digital platforms are together merging into the development of new digital ecosystems. According to Brodsky and Oakes (2017) the new ecosystems as they grow might collide and if they fail to share data it might be harmful for potential innovations and the business itself. They also state that traditional banks usually see the sharing of data as potentially more harmful for them, than they see it as an opportunity, and thus it has until now been mostly non-banks who has succeeded in creating value by using the data in new ways. According to Adner (2017), the vast number of actors that are involved in the ecosystems leads to changes in strategy because of trade-offs. Ecosystems seen from the perspective of value creation, will be even more important and frequently used in the future, however there is still much to learn in this area and hence a major opportunity for research to be done (Adner, 2017).

Digital platforms are also of interest in this research since they are the step towards our study of BaaS which is also closely linked to Open Banking. A great number of the literature mainly look at platforms and ecosystems from a perspective of operating systems, platforms that provides game or video and how hardware and software can be integrated. However, they also look at the company perspective of platforms, which thus is of interest to us since the company perspective of the platforms when having BaaS in mind, is according to us not very different. We then use the existing research to discuss and draw conclusions regarding how platforms and ecosystems are tied together with BaaS.

## 1.2 Problem background

As we have noticed during previous discussions regarding BaaS and Open Banking in various contexts, the subject often feels vague and broad, sort of as there would be something missing considering the knowledge regarding what it is, and should enable, for both companies and customers on the market. Furthermore because of the concepts being quite new, there exists many different understandings and views on the matter as we see it. Problems can arise from traditional banks being forced to develop in new directions that they without the legislation might not have chosen. Furthermore, how they are seen by the customers, can be problematic because the banking industry has been quite traditional and solid compared to many Information Technology (IT) companies that are known to change on a frequent basis. However, now banks and IT are merging more and more together, as most of other industries and IT are too.

In addition, new legislation, directives, and regulations, from which some covers the whole EU will have a huge impact on the market and the actors operating within it. In the EU, the PSD2 forces financial institutions to give access to customer accounts, via API solutions being the most common technology. This is done so that financial technology (fintech) companies can more straight forward develop platforms for customers to manage their accounts that are potentially held in different companies according to Constantinides, Henfridsson and Parker (2018). Furthermore, because the PSD2 entered into force quite recently, there can now continuously be found more information and research contributing to the still quite limited research available regarding BaaS.

APIs, meaning the application programming interfaces, is a platform boundary resource, which has an objective to allow others to innovate, design and build on top of digital platforms, which enables the API providers to get great benefit from the emerge of ecosystem of platforms (Huhtamäki, Basole, Still, Russell & Seppänen, 2017). How BaaS and Open Banking can be seen from the role of platforms and APIs are of interest to us since they are the basis that enables BaaS and Open Banking. BaaS and Open Banking are according to Remolina (2020) concepts that enable the use of APIs to connect third parties to financial institutions and via this build their own services and applications based on the data provided to them via the APIs (Remolina, 2020). According to her, BaaS and Open Banking are rising forms of action and hence bring both positive and negative effects with them to the financial system as we know it today.

Therefore, we see huge potential changes happening on the market in the coming years and still very little research done in the area of BaaS and Open Banking. Publications that deal within BaaS are mainly commercial articles or white papers, and there are very few in the academic literature. One of the reasons could be that digital platforms are especially complicated to study since they are larger and more complex which makes the ever-changing objects difficult for researchers to study according to de Reuver, Sørensen and Basole (2018). It seems that the commercial publications have come further with dealing with BaaS than academic literature has, which leads to a knowledge gap and hence there is an actual need for this new academic knowledge, that our research produces. Thus, we want to contribute and through this research clarify the status of BaaS at the moment. By examining the definition of BaaS, and by settling its current status in the financial markets, we answer to this research problem and offer new possibilities for further research, as this can be used as an opening shot for examining BaaS.

The very first task is to examine the relevant literature and the definition of BaaS, based on the available material, and therefore to make an interpretation of the object, as the current definition seems to be relatively broad and vague in the academic literature. Interpretations can be formed in different ways and the degrees of depth of interpretations can vary. At its simplest, the problem layout of interpretation is to describe the content of the concept of Banking-as-a-Service, but also to elucidate the broad and complex meanings associated with the object of our research. The interpretation forms the base of our research, as the goal of our problem layout is to interpret the status of BaaS in the financial market.

To support our interpretations, we need to make systematic analysis, structuring and sorting of the concept of BaaS and its contents, which aims to increase the understanding of the research object. The aim of this kind of typing and classification is to form types by generalizing our research object and its properties, and structure the information into different categories and groups. The specification and structuring are based on thematic design, which is a sub-objective of our research to further deepen the understanding of the concept of BaaS, and to support our interpretation.

In the literature review chapter, we will take a deeper look into digital platforms, digital ecosystems, API economy and relevant regulations, when placing BaaS in a wider platform literature and considering the conceptualization of BaaS. From all of this, what are the current status, keystones, and possible benefits and disadvantages, is something we hope to get a deeper understanding of through our empirical part of this thesis.

### 1.3 Purpose, research task and research questions

The purpose of this research is to examine the lightly researched concept of BaaS, via digital platforms and ecosystems, API economies and relevant legislation. Then through them shed light on what the current status of BaaS is regarding the digital transformation of the financial industry. Since the concept of BaaS is this far a quite lightly researched topic within the field of information systems, but also in general, as it does not seem to have a clear meaning in the academic literature of economics or business. We will look into relevant literature regarding BaaS to be able to address the current status BaaS has in the financial markets. Then in our analysis and discussion section, we will highlight its keystones and reflect the current status with the benefits and disadvantages that occur within it.

Moreover, from the survey and interviews we want to examine the current state of BaaS within API economy and digital platforms from the perspective of traditional finance institutions. We do this by pondering the familiarity and impact of BaaS, but furthermore addressing the benefits and disadvantages of the phenomenon. This is achieved by examining what kind of problems and possibilities occur within security, privacy, transparency, and governance while implementing BaaS, which are later reflected in the discussion about current status of BaaS.

The aim is to give a starting point for further research of BaaS, by investigating the status BaaS has within the industry at the moment. By addressing its status, we will expand the base of research regarding BaaS and closely related concepts such as digital banking, digital platforms and API economy in the field of information systems.

As the purpose is to clarify the current status of BaaS and ponder its benefits and disadvantages, the research task therefore is to, via the definition of BaaS, investigate its keystones and actors, and highlight possible problems and possibilities that may occur with it. To meet the purpose of the research, and guided by the research task, the research question was formed as follows:

1. *What is the current status of BaaS in the finance industry?*

### 1.4 Frame of reference, perspective, and delimitation of research

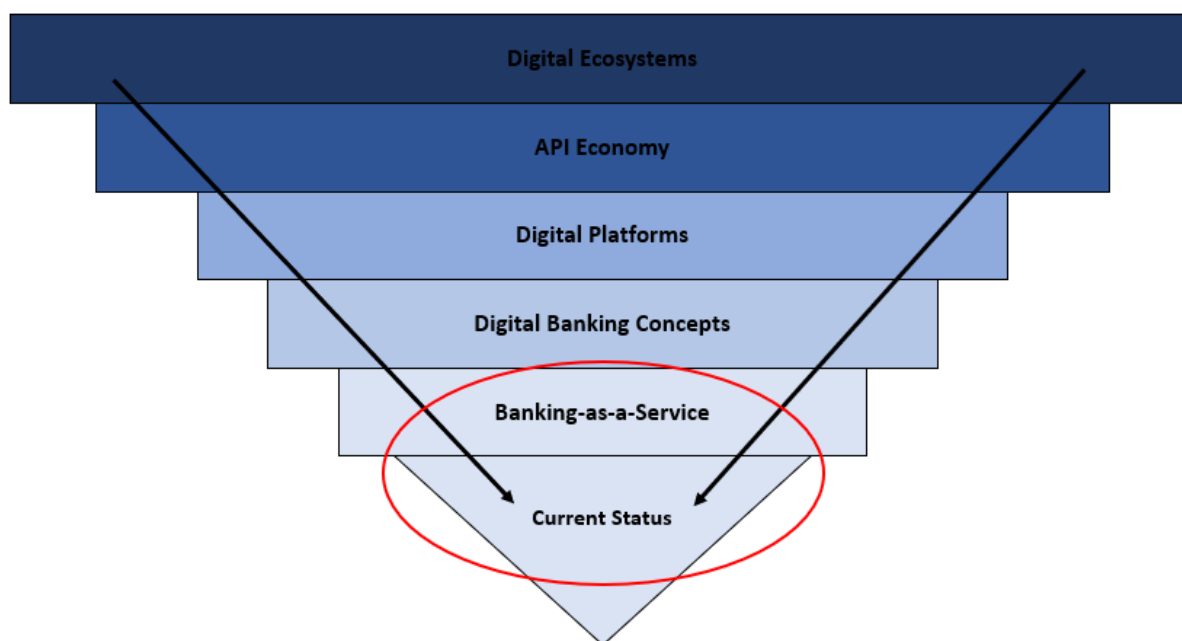
Since there is not much academic research done regarding the concept of BaaS nor Open Banking as stated before, our study will aim to via relevant literature and empirical data investigate and examine BaaS and its status. Then, from our own understanding through the literature review and empirical data collected, state the current status BaaS has on the digital transformation of the financial industry and related actors today.

As a limitation we will focus only on BaaS instead of BaaS in combination with Open Banking. They can be seen to go partially hand in hand, however because we focus on the EU and more specifically Sweden and Finland from the Nordic countries. We chose to leave Open Banking out of the scope and not deepen further into it, because of Brexit and the British

Open Banking initiative which are very specific to that geographical area and instead keep our focus on BaaS within the EU and PSD2 related matters.

Since the concept of BaaS is quite new, and it can be reviewed from several different perspectives, we will focus on the European, and more precisely Nordic markets, due to the different regulations in different economic areas. Therefore, the PSD2 acts as a limitation and as a base for our research, as the status of BaaS that we investigate is based on the regulations and geographical limitation of the directive. The topic can be further limited by using Finland and Sweden as areas of interest, and by targeting our data collection within the actors in these countries. This geographical limitation is significant and narrows down how our sampling and research is conducted, however still allows to apply the results in European economic area, as the PSD2 applies to the whole EU.

The most central and important terms and keywords in this research are “Banking-as-a-Service”, “Concepts for Digital Banking”, “Digital Ecosystems”, “Digital Platforms” and “API Economy”. This study mainly deals with BaaS on a general level, and instead of examining any specified financial institution as a case, it rather focuses on the current status and meaning of the concept of BaaS in context with API economy, digital platforms and digital ecosystems, which is aimed to be clarified in the frame of reference below (figure 1.1).



**Figure 1.1: Frame of reference.** Context of the research described as a pyramid, where the subject of the study is located as the tip, while others act as keystones for the investigation of Banking-as-a-Service and its current status.

## 1.5 Previous research and source material

In recent years, digital platforms and application programming interfaces (APIs) have been among the closely studied topics, both nationally and internationally. A considerable number of previous research, articles and other publications can be found on the topic, of which API Economy 101 -publication from Moilanen, Niinioja, Seppänen and Honkanen (2019) was

selected as a significant background for the theoretical basis of this work. API Economy 101 deals with the fundamental questions of API economy and clarifies the birth and shape of API economy, being the first Finnish API economy book that is based on scientific references. In addition to the publication above, other important academic publications for our research were the article of “Visualizing the Geography of Platform Boundary Resources: The case of the Global API Ecosystem” by Huhtamäki, Basole, Still, Russell and Seppänen (2017), which investigates the global footprint of APIs, and the article of “The API Economy and Digital Transformation in Financial Services: The Case of Open Banking” by Zachariadis and Ozcan (2017), which explores the fundamentals of APIs and connects these to the banking sector by dealing with the key challenges and possibilities of APIs in the context of the PSD2 and Open Banking Working Group (OBWG). With these publications, we are able to build a clear frame of reference and look at the digital ecosystems and API economy from the point of view of banking.

In addition to the publication above, other important academic publications for our research were the studies conducted regarding digital platforms and multi-sided markets. The papers from Constantinides, Henfridsson and Parker (2018) in combination with Gawer and Cusumano from 2008 and 2014 were especially relevant. The research done by Cennamo and Santalo (2013) is very closely related to the topic and hence also significant for our research.

## 1.6 Thesis outline

This thesis consists of six chapters and from three phases, which are illustrated in the figure below (figure 1.2). After the introduction chapter, the second chapter focuses on the theoretical background of the thesis, and introduces the object of research and its keystones, key concepts and actors, related research, and the applied theoretical perspectives, being the theory phase of our thesis. In the third chapter, the focus is on the strategy of the research and the used methodology, while the fourth chapter presents the results of the empirical study, which together forms the empirical phase of the study. In the implications phase, the fifth chapter outlines the practical and theoretical contributions of the study, which continues with the sixth chapter, where conclusions are drawn from the conducted research and reflected with the research problem and purpose of the study.

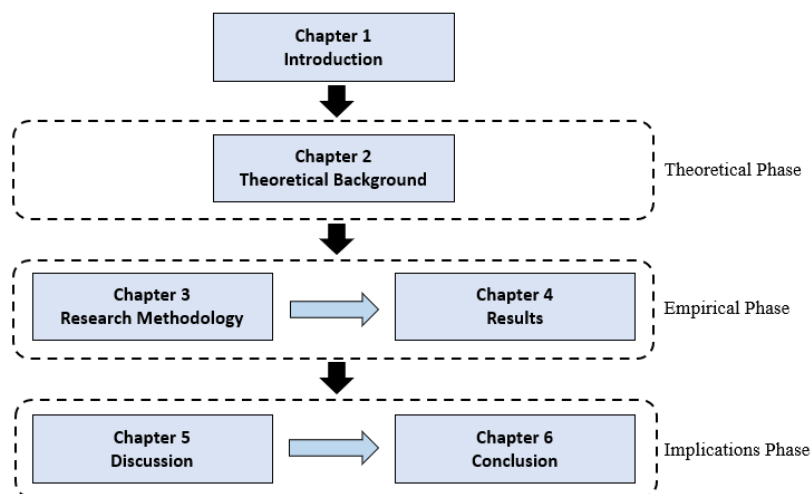


Figure 1.2: Structure of the thesis. Illustration presents each phase of the study.



## 2 Literature review

This literature review -chapter will act as a theoretical background for our thesis, and thus creates a frame of reference by dealing with relevant key concepts from prior research. This theoretical background builds the foundation for the further research of BaaS and its current status.

### 2.1 Digital Ecosystems

The term of ecosystems is borrowed from biology, however in our business and technology related context, it refers generally to a group of interacting organizations that depend on each other's activities (Jacobides, Cennamo & Gawer, 2018). These ecosystems can be divided into three different streams, such as business ecosystem stream, innovation ecosystem stream and platform ecosystem stream (Jacobides, Cennamo & Gawer, 2018). While business ecosystems are based on a firm and its environment, innovation ecosystems have its focus around a specific innovation or value proposition and on the group of actors that supports it, thirdly the platform ecosystems consider how the actors organize around the platform (Jacobides, Cennamo & Gawer, 2018). It is broadly agreed that complementarities, such as complementary innovations, products and services, and their providers are highly required for ecosystems to create value (Jacobides, Cennamo & Gawer, 2018). This gives the ecosystem the definition of *“a set of actors with varying degrees of multilateral, nongeneric complementarities that are not fully hierarchically controlled”* (Jacobides, Cennamo & Gawer, 2018).

The importance of designing ecosystems is increasing as the questions regarding customer value and the monetization of it becomes highlighted in a technologically developed world, as regulations also define how specific industries should work and what the actors in these sectors can for example legitimately sell (Jacobides, Cennamo & Gawer, 2018). The ecosystem captain or keystone organisation creates a relationship with the providers of complementarities from different industries without a need of being bound by contractual arrangements, yet having significant interdependencies (Jacobides, Cennamo & Gawer, 2018). The value for B2C-users is identified by the keystone organisation, but these do not necessarily charge the users for it, but rather the B2B-clients, who are willing to pay fees to obtain access to the ecosystems and to customer information, and then to provide complementarities as value-adding services, which converts the dependencies of the actors into multi-sided B2B2C-relationship (Jacobides, Cennamo & Gawer, 2018).

According to Adner (2017) ecosystems can be defined as follows: *“the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize”*. The term has gained growing attention within organizations (Adner, 2017). He also points out that the word ecosystem has many meanings and divides it into two general views that are, ecosystem as affiliation, and ecosystem as structure. The first one views ecosystems as groups of actors that are outlined by their relations to networks and platforms and puts weight on going beyond the regular industry borders (Adner, 2017). The second one views ecosystems as where the value is outlined by relationships of activity and puts emphasis on finding the actors who are needed for the concept to happen.



If we consider BaaS in the context of ecosystems, it is part of the phenomena of service ecosystems, that can be defined as “*complex, evolving systems of highly interdependent human and non-human stakeholders who co-create value and are shaped by institutions and social norms*” (Basole, 2019). As the PSD2 is expected to support efficient payment markets and promote competition of an environment where new generation payment products and services are emerging, which together provide higher transparency, security, quality of services and lower prices for end-users (Zachariadis & Ozcan, 2017), the PSD2 can be seen as a regulatory framework that enables or even forces to create a service ecosystem. The PSD2 does not actually regulate how and with what kind of technology the bridges inside the ecosystem should be facilitated, but APIs have become most reliable and tested technology for it (Zachariadis & Ozcan, 2017), which leads to the birth of API economy as one form of service ecosystems.

## 2.2 API Economy

One digital service ecosystem is the API economy (Basole, 2019). The API economy has grown rapidly during the recent years as many market leading firms has started to offer APIs for their services and products (Basole, 2019).

The API economy means that a firm utilizes other organizations resources, for example data or functions, to add value to their own customers (Moilanen et al. 2019). In this, the building blocks are the public interfaces that are either the firm’s own or provided by others, as well as developed communities, which help a firm to respond more quickly to unforeseen changes in customer needs (Moilanen et al. 2019). The API economy is characterized by the competition of the popularity of application developers, who are considered as primary customers, which then turns the business into providing business-to-developer (B2D) services (Moilanen et al. 2019).

APIs have become significantly more important as the idea of Everything-as-a-Service (XaaS) has emerged (Basole, 2019). The paradigm sights business capabilities, products and processes as a collection of horizontal services that can be accessed and used over the boundaries of organizations, instead of just discreet vertical commodities that are individually operated in silos (Basole, 2019).

According to Remolina (2020), BaaS is also related to XaaS since BaaS is based on the concept of Everything-as-a-Service. Everything-as-a-Service which is also known as Anything-as-a-Service, are both the same thing and hence more commonly spoken of as XaaS. Because the term XaaS according to Remolina (2020), is associated with a wide range of cloud computing services that in their turn started from Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) and Communications-as-a-Service (CaaS). Hence, BaaS via XaaS originates from all of them. Moreover, APIs are related to all of this via the platforms that allows for developers to build third party applications and software that communicate with each other via APIs. BaaS is therefore the XaaS of what banks can do with the help of APIs to provide digital banking (Remolina, 2020).

With everything connected, the digital services included have a nature to grow in many directions, APIs allow companies to change and develop in fast iterations and totally new solutions will come out of innovative combinations of APIs (Basole, 2019). According to him, API-centric models are already today used in companies, furthermore companies are also

combining APIs with their existing legacy systems to be able to reuse and make them more modern and fit into the XaaS world of today. However, this is not enough today, companies must also create a suitable API management model that enables them to keep track of usage, billing etc. based on usage (Basole, 2019). APIs have been shown to transfer design capability to users and to generate complementary assets, and it is suggested that the appropriate craft of API strategies will be essential for survival, innovation and growth as corporates are becoming progressively hyperconnected (Huhtamäki et al. 2017).

Before the extensive use of APIs in service development, services were produced by re-using code (Moilanen et al. 2019). The recycling of code became more common with open-source code, best-known example of such being the Linux operating system created by Linus Torvalds (Moilanen et al. 2019). Later APIs replaced open-source codes in the development of application and services, as new services were developed by recycling and re-using productized programming interfaces, either one's own or someone else's (Moilanen et al. 2019). The use of these as a part of developing and producing one's own services guides companies towards ecosystems, as the use of APIs creates dependencies between the organisations that utilizes them (Moilanen et al. 2019).

From a business perspective, the use of APIs creates new ways to foster the markets for one's own products (Moilanen et al. 2019). APIs that are opened between business partners, called as partner interfaces, open new digital routes for reaching end-users and to form supply for consumers, and instead of relatively long-lasting integration projects, the companionships between firms can be created in a much shorter periods of time (Moilanen et al. 2019). Typically, the partner interfaces are used to create service packages from various services of several companies, that is aimed to ease and simplify the transactions of an end-user, which is expected to create more sales of services and make the customer experience better, and therefore benefit every stakeholder (Moilanen et al. 2019).

With the help of APIs, banks via BaaS open their framework which in turn enables services that are similar to the bank services to be developed outside of their own stream instead, this should according to Remolina (2020), create attractive customer experiences across industries. The question is if banks should develop these kinds of services and application themselves also, or just let others develop them based on the data they provide, which seen from a different perspective, could be seen as the customers data since it is about the customers finances. Instead of being just a technical integration tool, it has been realized that APIs are also products that can be sold and re-used while developing and producing new services and applications, which has resulted as a business of offering and selling APIs in one's own developer center for specified target groups (Moilanen et al. 2019). The first forms of platform economy, such as joint marketplaces, has been built on these interfaces (Moilanen et al. 2019).

As an example, if we compare APIs and mobile applications as businesses, there is a lot in common as the biggest difference is the target groups (Moilanen et al. 2019). Mobile applications are sold to end-users, and the sales and installation occur in the platforms, called as marketplaces, that are designed and targeted for consumers (Moilanen et al. 2019). APIs then are offered and sold for the developers of these applications, and the logic is quite the same, as the API product is being used as a self-service on the platform (Moilanen et al. 2019). The objective is that the developers are delighted and satisfied with the solutions that are supposed to quicken and simplify the development of services, and are offered on the platform (Moilanen et al. 2019). This is how the phenomena of API economy emerged, and suddenly API was not

only a side product or additional feature to a physical product on the side of a service or an information system, as APIs have become increasingly more individually value-adding products and essential part of businesses (Moilanen et al. 2019).

There are indeed several positive effects and benefits in this new service ecosystem reality, called as API economy, yet there are still some major challenges (Basole, 2019). For example, how the diversity of actors is managed and integrated, how to provide sufficient control and security mechanisms, and how architectures that continuously adapt to changes and scale can be created (Basole, 2019). These are technological questions that needs to be answered in turn to be able to offer organizations own interfaces for use and launch new sources of income. Alongside of the technical point of view, from an economical perspective, these new service ecosystems are re-shaping how businesses are conducted, as API economy requires new and different types of business models for facilitating different expectations and operations, those may be even more freely connected than before (Basole, 2019). Then from the point of view of policies, the API economy has a massive impact on governance, taxation, and geographical boundaries (Basole, 2019). For example, data in the ecosystem can be distributed geographically, in which case it should be clarified which data residency requirements applies, how overall security and the privacy of the object of data is ensured, and how the policies are adopted and implemented (Basole, 2019). These challenges work as a fertile ground for the research and empirical phase of our study.

The benefits that are created by APIs functioning as a digital platform provide economical benefits and value to the end-users of the deliverables, such as digital services, but also to the companies providing the APIs (Huhtamäki et al. 2017). From the point of view of user groups, API systems work as a digital platform, by gathering actors from each side of the multi-sided marketplace together and creating positive effects in internal network but also externally (Huhtamäki et al. 2017).

Despite the benefits, not all large corporations are opening their APIs, as for example Amazon on the one hand uses APIs as the core of its business and everything is built around it, yet on the other hand Walmart uses APIs only to a small extent (Huhtamäki et al. 2017). This is due to the strategic decisions, which are founded to have larger effects on digital transformation than technology itself (Huhtamäki et al. 2017). It is argued that the status of leader of digital transformation is achieved by an adoption of a comprehensive digital strategy and from willingness to take technological risks (Huhtamäki et al. 2017).

As an ecosystem, the API ecosystem is different from a platform perspective in terms of governance (Huhtamäki et al. 2017). A regular platform by definition is being governed by the owner of it, who can choose to develop resources that allows others to co-create or not, hence the owner of the platform has the tools needed to govern and the developers can with their choices contribute to the platform and because of this it can be said that the ecosystem is co-evolving (Huhtamäki et al. 2017). According to Huhtamäki et al. (2017) in an API ecosystem there are a continuous development of services in regards of different combinations of APIs. Furthermore, this leads to the outcome where certain APIs can be chosen to not be used if they become too expensive since it is simple to start using another API instead, in other words the platform ecosystem is depending a lot more on the owner of the platform (Huhtamäki et al. 2017).

Huhtamäki et al. (2017) suggest that governance should be thought of in four categories for the API ecosystems as follows. Firstly, governance regarding data over country borders

should be considered, secondly governance regarding the combination of digital services with possible restrictions for different countries should be considered, thirdly governance regarding the use of restrictions for technologies and services in some countries should be considered, and finally governance regarding the management of APIs should be considered. Furthermore, according to Huhtamäki et al. (2017) APIs in a way standardizes the communication among participants leading to a changing competition because it removes the costs of switching suppliers. Moreover, this leads to a new shape of the landscape where European companies have a strong opportunity as emerging platforms and hence should consider in what ways they are participating (Huhtamäki et al. 2017), which leads us to digital platforms in the next section.

## 2.3 Digital Platforms

The attention for platforms has grown lately within the field of Information Systems according to Ghazawneh and Henfridsson (2013). Also, Hagi (2009), states that the word platform has gained popularity among executives. Moreover, digital platforms have starting from a few years back, been of a growing interest because many of the highest valued companies we hear of nowadays are platform businesses, such as Google and Facebook (Constantinides, Henfridsson & Parker, 2018). The access to existing digital solutions has according to them boosted the building of digital innovations based on previous digital infrastructures. Furthermore, this has also changed the job market via new online labour platforms, instead of mostly permanent jobs, there now exists the availability of need-based outsourcing of employment because of these kinds of platforms.

Digital platforms have a crucial role within online communities, since as an enabler and sustainer, it plays a role of a building block that serves as a foundation for which kind of complementarities can be developed, and also provides an essential function to the technological system (Spagnoletti, Resca & Lee, 2015). What differs digital platforms from applications is that the design context of a digital platform is under a constant and broad range of change, due to the growing user base and addition of new complements and IT capabilities (Spagnoletti, Resca & Lee, 2015). According to Hanseth and Lyytinen (2010), the difference between applications and platforms is that applications are developed to meet specific needs within specific target groups, when platforms are developed to meet the needs of several different and growing target groups.

The concept of platforms is according to Baldwin and Woodard (2009), described as a system with components that via being connected to each other, can enable the development of other components. They divide the term platform into three areas that are still connected to each other, these being product development, technological strategy, and industrial economics. In these three areas many things have been called by the word platform, originating from engineering design (Baldwin & Woodard, 2009). They further state that a platform allows for the opportunity to make a new product or service without having to reinvent everything from scratch again. They also argue that there is a similarity in the architecture of platforms, and that architecture can be divided into a stable collection of components and into a complimentary collection of components that are meant to change. This structure is key to further development without having to start from the beginning every time since it allows for features to be added and changed during the lifetime of the platform.

Cennamo and Santalo (2013), describes how platforms can differentiate between each other and compete in the platform markets. There exist different strategies for platforms to succeed better than others, however there are also trade-offs as Cennamo and Santalo (2013) puts it. Cennamo and Santalo (2013), looked into how platforms perform and what trade-offs there are when companies put together platform systems mostly within the gaming industry and that the companies with quite similar products and services mostly target the same consumers. However, we argue that digital platforms can vary widely but still be very easily accessible for consumers in the apps market competition, hence this also applies for other industries and our research.

According to Huber, Kude and Dibbern (2017), organizations transforming into platform-oriented businesses or owners, eventually end up governing complex ecosystems with different sizes of complementor companies that bring their offerings to the platform. In their study they came to the conclusion that the governance almost always starts with an arm's length cooperation involving the platform provider and the company or companies complementing the platform with their add-ons. In addition, they found out that some of the collaborations ended up with closer bonds between the companies resulting in them going past rules regarding the ecosystem in the first place. The takeaway for them was that the lower the governance costs were, as an example in the arm's length interactions, the lower the value created together also was. In line with this, they also argue that a more comprehensive collaboration results in more value but also larger governance costs. This is why we argue that it is thus important to find a balance between the partnerships and amount of governance platform owners engage in. Huber, Kude and Dibbern (2017) also mention a very interesting possibility in their suggestions for future research regarding how complementors within the same ecosystem might react to other complementors getting a better partnership from the platform provider and owner than the others. This would adjust for a study of its own, however we argue that special pricing and deals, companies, and competitors between is something very common in the business world and hence not of much weight for the results of this specific research.

As Cennamo and Santalo (2013) puts it, platforms can strive to get big fast (GBF), since a larger user base usually attracts more developers which can provide a larger variety and better quality of products or services for the users in the long run. One possibility is to provide special content compared to the competitors, in this case it is still important to also provide general content since users might choose the platform that is most general if they cannot for example afford a combination of different platforms (Cennamo & Santalo, 2013). If the GBF strategy is chosen by an organization, they should target the platform which provides the most target consumers. However, they conclude by stating that platform competition is not only about putting together the biggest network. They also argue that a distinct platform might be good if it is meant to diverge from other platforms. Platforms can also implement several of the strategies simultaneously. It is according to them argued for and against, that the Winner Takes All (WTA), would be a typical result in the platform market according to other scholars. However, they state that different platforms can exist side by side since consumers might be after different content or the costs for similar platforms are not too high. The WTA approach would according to Cennamo and Santalo (2013) mean that the platform should be placed only where the most potential customers are which would then not allow for targeting customers via a differentiation strategy, hence they argue that the distinctive positioning of platforms might even lead to better results.

According to de Reuver, Sørensen and Basole (2018) again, openness within digital platforms relates to not only arrangements within companies, such as rules but moreover to the



technological openness like APIs and software development kits (SDKs). They also point out the question if payment platforms should be considered as digital platforms or as a phenomenon of its own. We argue that the concept of BaaS is not yet mature enough for us to be able to classify it as one or the other. It could also be argued around if cryptocurrencies such as Bitcoin can be combined with BaaS. However, in this study we are not looking into cryptocurrencies and blockchain because as stated by Constantinides, Henfridsson and Parker (2018) the scaling of blockchain infrastructures face great challenges and would justify for a study of its own. Furthermore, to compare the number of transactions traditional banks and Bitcoin allow for, as an example by Constantinides, Henfridsson and Parker (2018) Visa processes approximately 25 000 transactions per second, when Bitcoin can process between five and seven transactions per second.

Multi-homing which is relevant to digital platforms and hence to this research, is by Constantinides, Henfridsson and Parker (2018) described as the complements of a platform participating in several platforms simultaneously. This is according to them done to both ensure a lower risk than by being tied to only one platform, but also to broaden the plausible market. According to Gawer and Cusumano (2014) again, network effects can be very useful and much cheaper when they apply between the user and platform relationship, compared to multi-homing which can be expensive and problematic because of various standards with the different interfaces. At the same time, Economides and Katsamakakos (2006) argues that open-source operating systems attract for bigger investments into application than if the system is proprietary. This can be seen as a good thing to attract more investments to use the data available because of the PSD2.

However, it can be asked if this eventually will lead to a WTA outcome as they point out amongst others. In accordance with this, Eisenmann, Parker and van Alstyne (2006) points out that the winner takes it all approach is important to keep in mind. When thinking of platforms, the pricing is critical to get right and moreover to subsidize price and quality sensitive users. Big organizations like Facebook or Google could have the resources to develop services and platforms that are much ahead of the competitors and via this become big players in the concept of BaaS in the future. This is also argued around by Gawer and Cusumano (2008), who states that the size of a company can be of importance when tipping a market. However, they conclude with stating that industries that are in transition and technological changes are happening fast, smaller players can have an advantage because new innovations and solutions are needed hastily. This is something to think of for organizations looking into possible opportunities based on what the PSD2 allows for via Open Banking and BaaS.

As Gawer and Cusumano (2008) describes sites as Facebook can now be seen as platform battlefields, from where ecosystems can be formed if the leader of the platform and other companies that are supplying additional services work together. Moreover, this can lead to new users being attracted to the particular platform and what it has to provide to them. They continue by stating that organizations usually do not succeed with transforming their products to industry platforms. Furthermore, it is important to know the difference between product and industry platform. According to Gawer and Cusumano (2008), a product is mostly not open and managed via the company when again an industry platform can be seen as a service that is needed by larger ecosystems of businesses. There can also exist several similar platforms without one ending up as the winner takes it all, for this to happen there should exist niche services and it should be easy for the user to change between platforms (Gawer & Cusumano, 2008). When looking at the PSD2 from this light, it should enable for many companies to use the open access to customers data and resulting in an easy way for the customer to choose which platform

they want to use. As stated by Gawer and Cusumano (2008) it is a very difficult task to simultaneously keep own profits and let others take part of the platform and via that also the profits. This is definitely a valid statement when companies think of their profits and face new challenges with PSD2 related matters. Again, customers will probably in the first-place benefit from this but in the case of one big actor increasing its market share, they might eventually end up with more expensive services if this creates a lack of competition and smaller companies fall behind in the technological development.

Later on, Gawer and Cusumano (2014) wrote that because platforms as they are called by both researchers and managers, exist in a broad range of different industries they can be seen as industry platforms. Because platforms work as a network between organisations, they attract more companies to join the ecosystem and network, because more users are joining, this can hence be called a platform-based ecosystem (Gawer & Cusumano, 2014). Here we can see a pattern between many research papers, which state that the bigger the userbase of a platform is, the more companies and users will be attracted to join it. Furthermore, they divide platforms into two different forms, which according to them are internal platforms and external platforms. The first one can be seen as resources that organizations can use for their own products to succeed, when again the second one can be seen as otherwise comparable to the first one, adding the ability for external companies to develop their own additional fruit to.

Third party development is by Ghazawneh and Henfridsson (2013) defined as the kind of development where an external stakeholder instead of the platform owner develops the product or service provided via the platform so that user of the platform is provided with more content and through that is more attracted to the platform. Furthermore, and accordingly with previous research we have referred to, the developer is instead of direct compensation usually provided with the marketplace and wider reach to potential customers that the platform allows for compared to a situation without the possibilities of the platform (Ghazawneh & Henfridsson, 2013). More importantly, they state that in accordance to develop platform systems that succeed, the company that owns the platform need to lay out the third-party developers with the right resources they need to build their products and services instead of developing them by themselves. Because of this it could be said that third-party developers are in a very important role of the success of a platform. This goes hand in hand with what the literature points out and observing that popularity attracting more users and developers. In other words, as Ghazawneh and Henfridsson (2013) pointed out, the developers function as the core for software leadership.

Multi-sided markets and multi-sided platforms can be explained with the help of the following two examples. If we think of a company providing home delivery of food via a platform, such as Wolt, Foodora or Doordash. The more a multi-sided platform such as one of these, gains individual users for their platform, the more restaurants will because of this become attracted to the platform and similarly also more couriers are attracted to the specific platform since there is a growing need of all roles. This goes all the way around to commercials and marketing, whom also will be more interested in the platform since all of the previous groups can as an example potentially be targeted. Similarly, to the first example but from a different market the use of credit cards can be used as a quite good and straight forward example. As a financial service company such as Mastercard or Visa in the credit card market gains more users, more banks are willing to work together with them and again, more users want to use their services since they will because of this be accepted in more and more places. According to Gawer and Cusumano (2014), multi-sided markets and industry platforms are related but not always fit into the same category, the similarities regarding indirect network effects between

those two are however important because of how they allow for communication between customer groups. In accordance with this, Hagiú (2009) states that the indirect network effects are crucial to achieve a true Multi Sided Platform (MSP) instead of a single-sided platform.

As Hagiú (2009) puts it, MSPs which connects the different sides of markets, occupy key positions within their industries, Google and Microsoft as examples. This is mostly happening because of what technology allows for to be done nowadays, and hence makes the difference compared to the MSPs that have existed long before information technology did. It is also pointed out by Hagiú (2009) that those who have tried, knows how difficult it can be to bring a new payment system to the market and specially to get both the consumer and merchant side on board. The solution for this is to have the right leverage, which in the age of technology can end up with very creative solutions and potentially disruptive results (Hagiú, 2009). Such as the way Uber changed the way we think of the taxi business today, compared to what it used to be 20 years ago. With the right solutions and provided tools for both sides of the service, in the Uber case a new way of orders, payments and connecting the driver with the passenger, both for the drivers and passengers were provided with a new platform that both adopted to at the same time. Something similar is probable to expect of BaaS within the financial industry in the coming years after the PSD2.

Importantly, Hagiú (2009) also states that quality assurance is something that should not be forgotten when the MSP strategies open new doors for organizations, since it lowers the search costs the MSPs sides between. In other words, the saying quality over quantity fits, also in this case. To conclude Hagiú (2009) points out that designing and developing MSPs, is an ongoing process and even more so within the technology fields, which should never be ready nor statute. The growing interest for platforms within the field of Information Systems as stated by Ghazawneh and Henfridsson (2013) and our research regarding how the previous research regarding platforms can be of use when investigating the current status of BaaS, will hopefully also feed future research in the area. With this we move over to digital banking concepts in the next section.

## 2.4 Concepts for delivering digital banking services

It is argued that innovations in technological and digital form create significant strategic implications for firms, as the market dynamics in an industry changes and the competitive landscape shifts (Porter, 1985). The technological change and increasing competition in different industries and sectors may result as benefits to end-user and customers as increased quality and in lower prices of services and products (Matsa, 2011). According to Zachariadis and Ozcan (2017), digitalisation and the PSD2 has significantly affected banking industry's payments, as the use of access and network technologies have enabled new entrants, such as fintech's and challenger banks, to enter the markets and claim their shares. This has left traditional finance institutions with two options; either they can accept the change in the industry and interact with the greater ecosystem of new service providers and other market participants, or they can try to defend the current market position and focus efforts to the innovation and development of competitive solutions for every product segment and customer group, and limit access to their infrastructure and systems (Zachariadis & Ozcan, 2017). The implementation of the PSD2 across Europe however directs the banking industry towards an open-banking environment with the help of APIs (Zachariadis & Ozcan, 2017), which has contributed to the creation of new ways of banking and delivering banking services.



To take a further look on uprising concepts for delivering digital banking services, a well-known fintech start-up investor Pascal Bouvier has defined API Banking as a synonym for Open Banking, as it offers third-party providers to access bank's software system and enables an external third-party application to be integrated with traditional finance institutions system with bank-grade security, authentication, and access management (Brear & Bouvier, 2016). Platform Strategy then is defined as the deployment of a set of business capabilities for maximizing value creation and identifying which capabilities works as a core and should remain as responsibility of the traditional finance institution, and which capabilities and responsibilities are given to partners for delivering services and products for end-users (Brear & Bouvier, 2016). Furthermore, Marketplace Banking is defined as one of the types of platform strategy, where the traditional finance institution creates a digital marketplace where platform partners can offer and sell their services and products to the customers of the marketplace owner, being the traditional finance institution (Brear & Bouvier, 2016).

To compare with the previous definitions, which might seem quite similar, BaaS itself has been defined as delivering banking capabilities to enable third parties to deliver their own services and products, for instance a traditional finance institution can deliver anti-money laundering services, financial data storage, payment services or account checking capabilities through APIs, which then could be used by the third parties for offering re-shaped financial services for end-customers (Brear & Bouvier, 2016). Furthermore, Banking-as-a-Platform is defined as a traditional finance institution's platform strategy, which includes Open Banking but may also include marketplace banking or BaaS (Brear & Bouvier, 2016), and it is in the interest of practitioners and policy makers as it is seen as one of the steps of the banking sectors digital transformation (Zachariadis & Ozcan, 2017).

According to Zachariadis and Ozcan (2017), the PSD2 forces banks to give access to the data regarding their customers' accounts and payment services for PSPs in line with the customers consent to enable more competition on the market. For this, the APIs are chosen because they are seen as the most common and trustworthy technology available right now for secure and stabile interaction even if the directive does not state explicitly which technology should be used for the purpose regarding PSD2 (Zachariadis & Ozcan, 2017). In accordance, the regulatory framework of the PSD2 sketches what responsibilities and functions there are for both Account Information Service Providers (AISPs) and Payment Initiation Service Providers (PISPs). They continue by stating that both of these online services can be provided by amongst other banks, fintech's, neo-banks or untraditional banks but extends also to social media and telecommunication companies among others. This is important since BaaS can basically be associated with almost any technologically developed company based on this.

Because of this, both the PSD2 in the EU and the Open Banking initiative in the United Kingdom (UK) enables new opportunities for the banking sector within Europe. As stated by Zachariadis and Ozcan (2017), the opening up of the APIs allows banks to implement the platform strategy of Banking-as-a-Platform (BaaP) and via this tilt the competition. In the case of doing so they state that, the banks need to provide value for all participants in the platform and hence reinvent their own role to fit the open-API economy where the best solutions will attract the developers and customers to join and shape the ecosystem that can provide lower transaction costs and more value than others can. However, there are rules to be followed which leads us to have a deeper look into relevant legislation regarding BaaS.

## 2.5 Second Payment Service Directive (PSD2)

Legislation that forces financial institutions to change and compliance are of interest to us since BaaS and Open Banking could in combination with these lead to a very different financial sector from what many have gotten used to in the past decades.

Some of these mentioned are the relatively newly revised Second Payment Service Directive (PSD2) from the previous Payment Service Directive (PSD). The new directive which is aimed to enhance consumer protection via the payment industry and furthermore also via non-banks to correspond to the changes and development within the market was published on 23 of December 2015 and had a deadline of transposition into national laws by the time of 13 January 2018, after this the requirement to identify customers by strong authentication entered into force by 14 September 2019 (FIN-FSA, 2019). Central changed to the previous PSD was that so-called Third-Party Payment Service Providers (TPP) was now included into the regulation, which means that PISPs, AISPs and Card-Based Payment Instrument Issuers (CBPII) gained access to customer accounts provided by account servicing banks with the customers consent (FIN-FSA, 2019).

In other words, this is done to protect the customer, to simplify and streamline the European market and to make payments safer than before (Constantinides, Henfridsson & Parker, 2018). Within the EU there also exists other regulations such as the General Data Protection Regulation (GDPR) which can be seen as the right for the customer to be forgotten if no other law conflicts with it. More importantly for our research, the PSD2 can be seen as the lever for the development of new concepts such as BaaS to take place.

As introduced before, the PSD2 comes with a great number of changes for the banks and fintech institutions to deal with. Constantinides, Henfridsson and Parker (2018) argues that the PSD2 brings forward some of the conflicts that arise when industries which are changing at a fast pace are regulated. They furthermore argue that even in the EU strived for better protection of the customer and safer transactions, they might have created opportunities for the tech giants like Amazon or Facebook to enter the market which might have potentially severe consequences for the possibilities of start-up companies to succeed. They also point out that the United States and the EU already have formed different perspectives on privacy. This is important because many of the tech giants are based outside of the EU, therefore even if this applies for them, when they have users within the EU, they might have more security within the market, since not all of their business is based within the EU and hence if something goes south, they still have other regions and markets where they can succeed.

Finally, Gawer and Cusumano (2014) state that even technologies such as payment and micropayment technologies can be seen as platforms that allow for financial transactions. This is most relevant to this research since this is precisely what BaaS and Open Banking allows for. Furthermore, this argues for why we can identify the meaning of BaaS as a concept that platforms and ecosystems will be developed and based on. This leads us over to the next section where we conclude how the previous sections are tied together with BaaS as we know it today.

## 2.6 Literature review conclusions

From the literature review the conclusion can be drawn that even if the banking industry amongst others are under constant pressure to comply with regulations and fulfill the needs of their customers, the banks are potentially facing a new threat from newcomers on the market that might use and present the data that the banks must share, in new and better ways for the customer. Hence the role of the bank might be shifting depending on the choices they make regarding the future development of their services they could become more of data providers for new applications or provide the applications themselves. Companies with platforms that are not yet open, cannot open them up lest because someone else of the competing companies will, there needs to be attractive features for others to build their complementary products or services on to attract others to join, meanwhile the company providing the platform needs a way to make their own profit out of the potentially growing ecosystem.

How all of this will turn out in the future regarding BaaS is hard to predict but the regulations such as PSD2 will most definitely make the development of the market and future platforms interesting to follow. After conducting our literature review, we have formed our understanding of BaaS and hence we summarize it as follows. Today, the role of BaaS is to work as the lever and sort of a new tool, but also as the word to go for when making use of digital banking solutions such as digital platforms, API economy and digital ecosystems when describing the phenomenon regarding what companies plan on doing based on new regulations such as PSD2. In addition, BaaS can be seen as a sort of invitation to new possibilities on the market that the use of APIs enable for both newcomer fintech's and brick and mortar banks. However as mentioned before, we are going to discuss the concept and look at it from the light of the collected empirical material to form an even deeper understanding of the status BaaS has today.

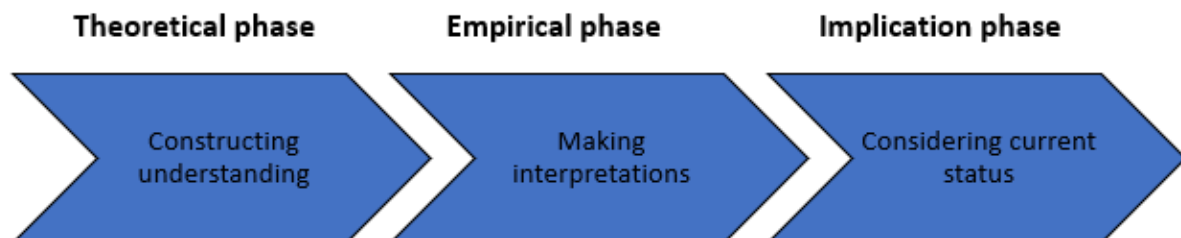
Nevertheless, BaaS is a new concept and has a quite abstract and broad meaning and because of this, it has not yet fully found its way into common language nor academic literature as we see it. BaaS could be compared to how the words internet or cryptocurrency is used today, and how they were used some time ago. They have a different meaning for different people and because of their technological nature they are very broad and can be used in various purposes, also because of the ever-ongoing technological development of today. In addition, the meaning of BaaS is also changing after what surroundings it is associated with, as it can be technology, legislation, business, or all of them. Therefore, we will collect empirical data to develop a deeper and most recent possible understanding of what the concept BaaS means, including how it is seen or potentially planned to be used. As Open Banking is more of an umbrella term for concepts such as BaaS, but also refers more to the Open Banking Initiative and OBWG in the UK. Hence, we will focus only on BaaS and associated aspects accordingly to our delimitations as mentioned before, where we have set a geographical limitation to the EU which also is where the PSD2 applies. More precisely we will use our knowledge from the literature review as a basis for further examining the current status of BaaS via our empirical data.

## 3 Methodology

This chapter aims to explain and present the processes and choices that lays behind the investigation of the research question. It explains the used hermeneutic research approach, as well as the decision of using qualitative data collection through a survey and interviews. First, we explain our research strategy and justify the choice of the approach and method. Second, we present our data collection techniques, target sampling and respondent selection, and how the data collection activities were conducted. Third, we explain the analysis of the data, actions for ensuring the quality of the research and that it meets the expectations regarding research ethics.

### 3.1 Research strategy

This research has a type of qualitative research. The first phase of our research is theoretical, in which we do not observe our research objects immediately, but seek to outline conceptual models, explanations and structures of BaaS and its keystones based on previous academic literature. After clarifying these, we continue to the second and empirical phase of the research, where we use a hermeneutic research approach, which allows us to make our interpretation of BaaS and its key contexts, which later enables us to ponder benefits and disadvantages of BaaS and to view its current status. This is aimed to be clarified in the figure below (figure 3.1).



**Figure 3.1: Research timeline.** Illustration presents each phase of our research.

Qualitative research was chosen as the research type, as the research seeks to understand the quality, characteristics and meaning of BaaS comprehensively and as a whole. First, we wanted to have a deep theoretical understanding, which later acts as a base for making interpretations and to investigate the objectives and purpose of our research and to solve the research problem. In the theoretical phase, the topic has been approached through previously collected material, which has been analyzed objectively and in relation to research question. In this way, we have successfully gathered a theoretical whole from the material, and by answering the research question, it has been possible to create an intact theoretical base and conclusions on a quite new and wide-ranging topic. Second, to meet the purpose and the aim of the study, we conducted hermeneutic research, since the character traits of our research question makes the empirical phase an interpretative one. In this way, we have collected enough data for analysis that works as a base for our interpretations, and thus allows us to make conclusions about this phenomenon. The study therefore utilizes previous studies in its theoretical basis, and cumulatively allows to build a view on the status of BaaS on top of the theoretical base.

## 3.2 Data collection techniques

As the aim for our data collection is to find out what the participants think, feel, experience, and believe we have decided to use surveys and interviews as data collection techniques. This mixed method was chosen as the phenomenon is relatively new, and thus we believe that it is essential to collect extensive amount of data through survey, and then deepen into the most interesting areas and questions through interviewing professionals of each key contexts. First, we use surveys to collect data about the familiarity of BaaS, and general insights about it, and then move to track the possible problem areas within it. Second, in the interviews we deepen to the founded problem areas and focus to the most significant ones. This approach is chosen, as the topic of our study is relatively new and unique, and therefore the mixed technique serves our study the best, as through the survey we are able to collect a mass of data, and in the interviews, we bring the survey findings into focus. In other words, this is called method triangulation (Hiltunen, 2008).

### 3.2.1 Survey

Survey is an efficient technique for data collection as it enables to have extensive research material, saves effort and time, and is easily analyzed (Valli & Aaltola, 2015), and thus we chose survey to be the first technique for our data collection. The survey form is presented in the attachments (attachment 1). Through the survey, we are able to ask a lot of questions, especially as the answer options are provided in advance (Valli & Aaltola, 2015). The problem in this technique is the attitudes of the respondents of the survey, as it cannot be ensured that all answers are carefully considered and honest (Valli & Aaltola, 2015). Also, the successful choice of response options is uncertain, as the misunderstanding of respondents cannot be controlled nor influenced after the launch of the survey, and there is no guarantee that respondent know or understand the context (Valli & Aaltola, 2015). To overcome these issues, we have aimed to minimize the possibility of misunderstanding, by keeping the survey simple and consistent, and by avoiding overly specific professional terms. We also provided a short introduction to the topic and BaaS at the start of the survey.

The format of the survey is an online survey, conducted with Google forms. The problem with this kind of form of a survey is the low response rate, as a survey sent to an unselected set of respondents does not usually produce a high response rate (Valli & Aaltola, 2015). Therefore, we have openly shared the survey via the social media platform called LinkedIn and via it offered the possibility to answer in Google forms. In combination with this, we also sent the survey directly to selected persons and target groups to answer.

The content of the survey questions mainly concerns information about attitudes, beliefs, perceptions and opinions, in addition to assessments and justifications of those. The questions were designed based on the literature we have read and were inspired by, to give us a general overview on the familiarity regarding BaaS combined with its possible benefits and disadvantages. Furthermore, with the help of the follow-up questions, we aimed to gather insights to support their general overviews. Moreover, background information such as gender, age, education or family relationships is not asked in order to maintain anonymity, but instead the profession, industry and possible company is asked, which allows us to understand the backgrounds of the respondents to consider the reliability and validity of the results, but also enables grouping based on industries and professions in the phase of analysis.



We have chosen the intermediate form of the structured and open-ended questions to our survey. This means that after each ready-made answer option, the survey has an open-ended question, that seeks to offer clarification for the insights, and also allows respondents to present views on what we as researchers did not think of (Valli & Aaltola, 2015). The structured questions have a type of scale-based questions, where we have mixed 5-point Likert scale and semantic differential. We have also paid attention to the length of the survey and to the number of questions, as the response rate is usually higher in short surveys (Valli & Aaltola, 2015). In addition, we also aimed to keep the survey simple enough to receive enough answers, which is achieved by logical progress of the survey, and with concrete and simple enough questions, with short and concise answer instructions.

As an example, we placed easier questions in the first section of the survey as warm-up questions, and then presented the harder questions at the end of the survey. In addition, we also aimed to ask only questions that did not lead the respondents to any specific direction. Finally, we did not ask any control questions, meaning that we did not ask the same question more than once for ensuring that the respondent answers honestly (Valli & Aaltola, 2015), as we do not see that it would work in short surveys. For a survey to be successful, the clarity is paramount and essential, and thus we have sought to ensure that our questions are formed in a way that the questions mean the same to all participants. We have also aimed to make specific questions and narrow down questions whenever possible. Our survey questions are short and does not have double meanings, and in addition we only asked one thing at a time. In the structured questions we offered an alternative of “unsure” in the mandatory questions, and the open-ended questions were optional.

The survey is designed to be logical and easy to understand and answer, to ensure that ambiguity does not decrease the response rate, as it is already relatively low in online surveys. The survey questions in the form are placed in five different sections. The complete survey form can be found from the appendixes (appendix 2). In the first section, we introduce the respondent to the survey, by presenting the background of the survey and ask for attendees’ consent to participate to the survey. At the second section, we ask attendees background information to be able to better picture the characteristics of our survey sample. In the third section we ask general questions about BaaS, to see how familiar respondents are with the topic and what kind of general level views they have about it. As there is a possibility that the term of BaaS is not familiar to all, even though they are familiar with the concept, we provided a short clarification of BaaS at the start of section three. The fourth section includes questions that are aimed to find out what kind of problem areas and issues respondents see within BaaS, which are then further dealt in the following interviews. The fifth and last section asks if attendee would like to leave feedback, comment the topic, or share some thoughts, and then ends the survey by asking to submit the survey and thanking for participation.

The survey was launched on April 16<sup>th</sup>, 2021 and we accepted responses until April 26<sup>th</sup>, 2021, meaning that we gathered survey answers for 10 days. The survey was deployed with two LinkedIn posts. In addition, we sent private messages through social media platforms to relevant target persons in our networks and kindly asked them to respond to the survey. It turned out that even though the social media posts reached a larger number of persons, private messages were a better option for involving participants to the survey. Unfortunately, we do not have precise statistic about the share, regarding whom participated through the open posts and whom through private messages, but as we monitored the progress of the survey and number of answers, it turned out that the number of answers increased the more we sent

private messages. Eventually we were able to reach the desired number of persons with the combination of social media posts and private messages and received 113 answer to the survey.

There was no technical issues or difficulties during the survey, however we struggled to get enough survey answers, and thus we had to be relatively active during the phase of gathering survey responses and encourage attendees to answer. The open access to surveys through social media offers a possibility to influence the research by giving troll answers, but as we monitored answers, we did not identify such answers from the material. Reflected afterwards, as we received most survey answers by contacting attendees through private messages, we perhaps could have skipped publishing open access to the survey, and by that control who have the possibility to answer to the survey, which also would have partly tackled issue with possible troll answers and increased the reliability of the data collection. However, this kind of strict control would also have affected the diversity of the respondents and their answers, and thus to the validity of the findings. The implementation of the survey went as planned, and we did not receive any negative feedback nor complaints regarding our survey.

### 3.2.2 *Interviewing*

Interviewing is a data collection technique where the researchers and interviewees discuss, depending on the type of interview, more or less in a structured or broad way about issues that fall within the research topic (Hiltunen, 2008). The purpose of an interview is to contribute to completing the research task, and it is used to obtain and collect research material (Hiltunen, 2008). The research material produced by the interviews is intended to be analyzed and interpreted in order to clarify the previously set scientific research task (Hiltunen, 2008). In qualitative research, the most common data collection technique is interviewing (Recker, 2013).

Unlike in a survey, the interviewer effect occurs in interviews (Groves & Kahn, 1979) and thus questions the reliability of our findings from the interviews. This means that there is the possibility that the presence of an interviewer can cause change in the behavior of an interviewee (Jacobsen, 2002), and for example it is possible that the interviewees respond as they think that we as interviewers would like to hear the answer (Recker, 2013).

There are several types and ways of interviewing, which can be divided based on different criteria (Hiltunen, 2008). One of the most commonly used classification is based on how fixed and structured the interview is, meaning how open and leaded the interview is and how accurately the interview questions are presented (Hiltunen, 2008). As our interview has a clear theme and it is structured by questions, yet giving the opportunity for open discussions, our interview type is a semi-structured interview.

Due to the on-going COVID-19 -pandemic, it is not possible to conduct physical face-to-face interviews, and thus we are relying on phones and Skype while executing the interviews. This allows our interviews to reach broader, as geographical restrictions do not affect us in the same way, and we can have interviewees from both Finland and Sweden. As we do not use face-to-face interviews, we are also able to reduce the interviewer effect, which contributes to the reliability of our findings from the interviews. To further reduce the interviewer effect, we chose to send the interview questions to the interviewees beforehand, as we believe that it improves the relationships of trust between us and the respondents, but also contributes to the

fluency and comfortability of the interview session as the respondents were given an opportunity to get acquainted with the material in advance.

As the interview starts, the interview stage is set by asking a confirmation from the interviewee that we have permission to audio record the interview, and in addition we ask whether the interviewee would like to be anonymized or not. Due to the sensitivity of the subject, it is most likely that all interviewees prefer to be anonymized. In the first phase of the interview, we ask general questions about interviewees professional background to better understand the respondent and respondent's insights. In the second phase of the interview, we present BaaS - specific questions to further understand how broadly they have dealt with the topic. The third phase of the interview consist of question that are related to three different contexts, which helps us to further create a holistic view of an interdisciplinary topic. Furthermore, we also ask the interviewees to evaluate if any of these themes and factors inside the themes, may have significant influence on the further and future development of BaaS. This is aimed to produce meaningful insights and promote continuous and smooth discussion, which would be in line with the type of a semi-structured interview. We end the interview by asking if the interviewee has any questions, comment or complain, to give the interviewee an opportunity to have a final remark, in case they have something in their mind.

The interview questions are designed to fit our semi-structured interview type. Questions are based on the findings from the survey, to further deepen into the focus areas of the research. In addition, we were also inspired by the literature that we have read. The complete model for the interview is placed in the appendixes (appendix 4). In the table below (table 3.1) we aim to clarify the consistency of our interviews.

**Table 1.1: Interview questions relation to themes.**

Theme	Reflected in question
BaaS in general	5, 6, 7, 8, 9, 10, 11
Technological context of BaaS	12, 13, 14, 14A
Business context of BaaS	15, 16, 17, 18, 19
Legal context of BaaS	20, 21, 22, 23, 24, 25, 26, 27

To conclude, we conducted three interviews, all of them via Skype to ensure social distancing and to be able to record them with the help of our phones. All three interviews were approximately between 40 to 50 minutes long and we were allowed to record all of them in case the interviewees had the option to stay anonymous. We are familiar with the situation and understand the nature of the financial institutions and were thus quite satisfied with these conditions, and the demands we got. The flow in the interviews was relatively fluent, and perhaps in some points it was more of a discussion that was supported with our interview questions. Interview questions seemed to be clear enough, as only a few times an interviewee asked us to clarify what we mean with the question. This might be because of skype, and the nature and quality of internet calls in combination with conducting the interviews in the interviewee's



native languages. Furthermore, we were able to follow our interview guide, and the interviews went as planned, as we did not face any difficulties during the interviews.

### 3.3 Target sample and respondent selection

We deeply believe that finding candidates that have knowledge and experience of technology or banking, preferably both, is essential for our research to be successful and reliable. To find a suitable target population, we first defined the target population, chose the sampling frame and then chose a sample from the sampling frame.

As we see that BaaS can be approached from several different points of view, we decided to narrow down to three, and look at the topic from the perspectives of information technology, business, and legislation. Firstly, each one in the target population must have something to contribute to the research from at least one of these three perspectives. Secondly, to have insights broadly, we needed the target population to represent both those who put the legislation into force and supervises it, and those who operate within its framework, but also to represent the ones who provides BaaS either now or in the future, and those who consumes it. Since the deep expertise precisely within BaaS is relatively narrow, a sample that includes expertise from our frame of reference was chosen, as available BaaS experts were only a few and having non-experts would decrease the credibility of our study. Therefore, the background of respondents in the survey is by necessity significantly broader than in the interviews, where all the respondents have precise expertise.

The respondent selection is based on the target sample, and several possible respondents, first for the survey, and later for an interview, were approached in different ways. For the survey, respondents were approached by sending a private message, but also by sharing the link to the survey with our networks in LinkedIn by writing a post about it (appendix 1). As presented in the pie chart below (figure 3.2), a large proportion of the survey attendees had a background from financial institutions (42%) and from consulting firms (28%).

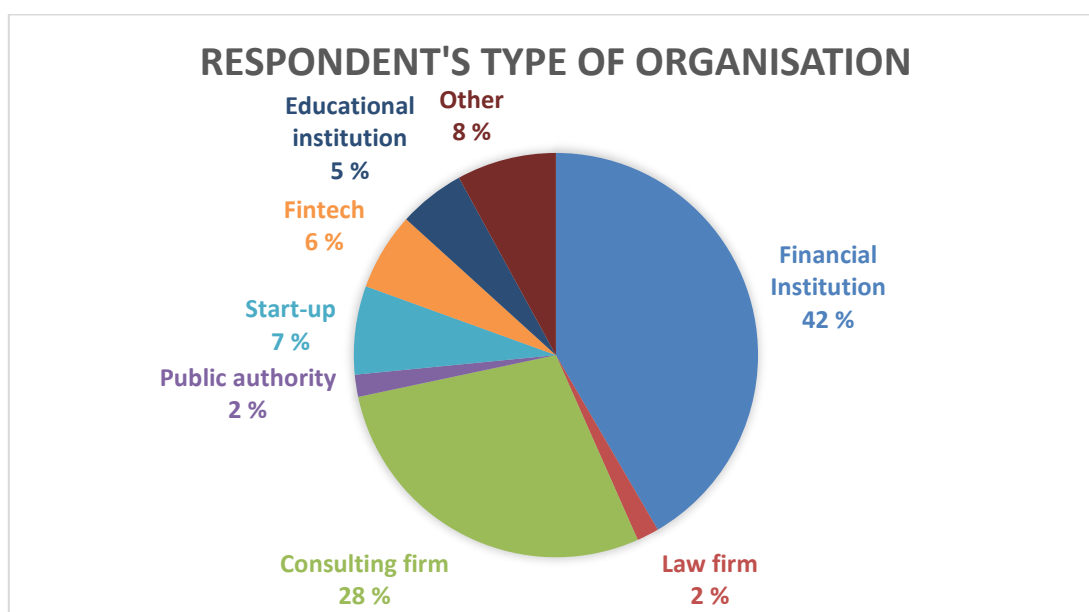
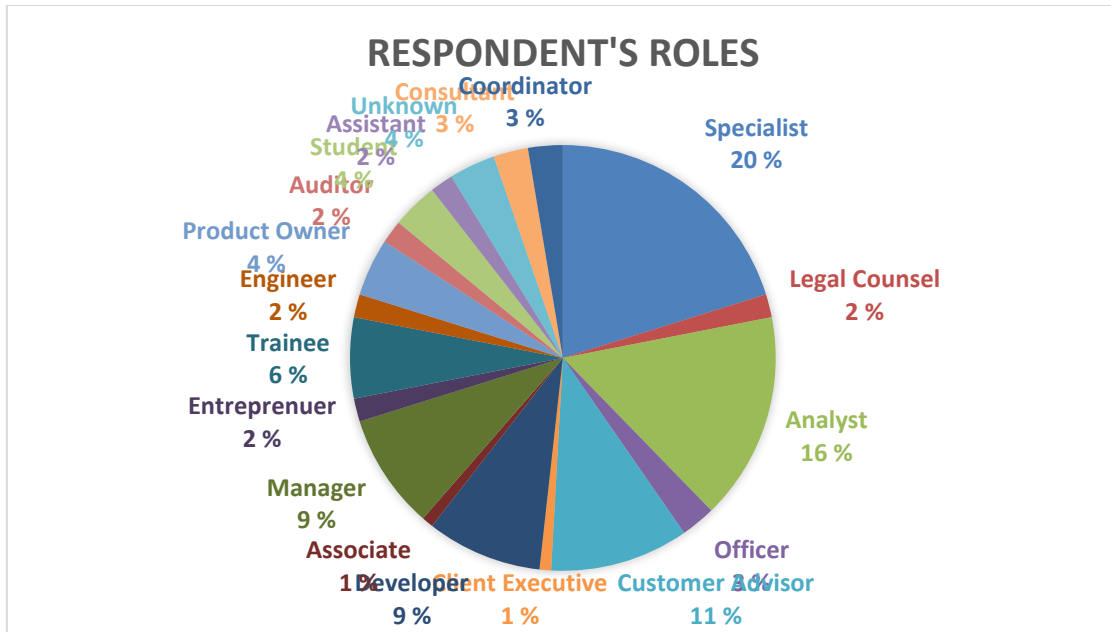


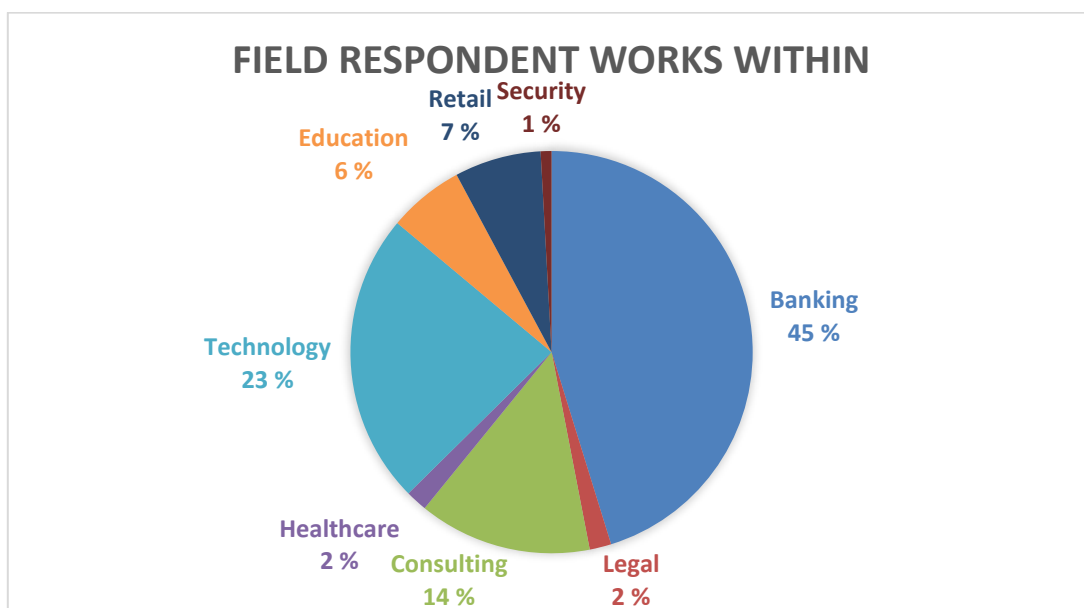
Figure 3.2: Respondent's type of organization. Pie chart clarifies the type of respondent's organization.

In the pie chart below (figure 3.3), we present the survey respondents roles. A significant proportion of the survey attendees were identified as specialists of their own field (20%), as analysts (16%), customer advisors (11%), developers (9%) and managers (9%). We argue that the diversity of respondents and their roles supports our research, and thus we are able to cover the technological, legislative, and business perspectives.



**Figure 3.3: Respondent's roles.** Pie chart clarifies the roles of the respondents.

In the pie chart below (figure 3.4), we aim to clarify the field that our respondents work within. This is important, as a person can work in an organization that has a type of financial institution and thus operates in the financial industry, but for example has a role of developer, and therefore works in the field of information technology. Most part of our survey attendees work or are specialist in the field of banking (45%) and technology (23%).



**Figure 3.4: Field respondents works within.** Pie chart presents the field of respondent's expertise.

For the interviews, we sent private messages and emails to three different candidates who represent the technology, business, and legislation perspectives. These three interviewees were chosen from our professional networks, and to represent the area of interest of Sweden and Finland. All of these three persons agreed to participate to the interviews with the condition, that they can stay anonymous. To keep the anonymity of the interviewees, it is challenging to discuss the background more thoroughly and specify why we chose exactly these three persons. Each interview and respondent are presented in the table below (table 3.2). Furthermore, transcription of each interview can be found from the appendixes.

**Table 3.2: Interview respondents**

Respondent	Role	Organization	Industry	Duration	Date	Type
R1	Business Developer	O1	Finance	51:36	30/4/2021	Skype
R2	Senior Legal Counsel	O2	Finance	38:38	4/5/2021	Skype
R3	Development Manager	O2	Finance	40:57	30/4/2021	Skype

## 3.4 Analysis

### 3.4.1 Analysis of the survey

For the survey, we have an understanding-seeking approach for the analyzation of the material. As we have two kinds of questions in our survey, the linear scaled question and open-ended question, we use two techniques for analysis. The linear scaled questions are relatively easy to analyze, as we get summarization of the responses as a bar chart straight from the survey tool, from where we can straight form an understanding on the general perceptions. Then the answers to the open-ended questions needs to be further analyzed, which later allows us to make meaningful conclusions.

The basic method of analysis in our research is content analysis, which allows us to organize, describe and quantify the phenomenon under study. Through the survey, the result of the research are the formed categories and their contents, meaning that based on the survey, we are reporting the identified key contexts for BaaS, which are specified with further classification. This was done in Excel. In addition, we use direct citations of the material, to increase the reliability of the report and to present the origin of the classification to the readers. Content analysis allows us to organize material in a concise and clear format without losing the information it contains, as the purpose of the analysis of qualitative data is to increase the value of information, by creating meaningful, clear, and coherent information from the survey data. Our analysis is aimed to create clarity in the data, which then enables us to draw clear and reliable conclusions from the phenomenon under study.

There are two ways for conducting a content analysis, either with a data-driven inductive approach or deductively, using some previous conceptual system for classifying the data (Kyngäs & Vanhanen, 1999). Defining an analysis unit is the first step towards analysis in both an inductive and deductive approach, and in addition it should be decided whether to focus only on what is obviously expressed, or are the hidden messages also analyzed (Kyngäs & Vanhanen, 1999). The analysis with an inductive approach, can be roughly described as a three-step process, which includes first the reduction of the data, second the clustering of the data, and third the creation of theoretical concepts (Tuomi & Sarajärvi, 2009). In the reduction, we search expressions from the open-ended material that describes our research question and then summarize the information. In the clustering, we review the original expressions obtained from the material, and group and combine concept that have the same meaning together into a class. We name the content of a class by a descriptive concept, for example by a property, feature, or perception of the phenomenon under study. Lastly, in the creation of theoretical concepts, we pick the relevant information for our research and form the theoretical concepts based on the selected information. We proceed from the use of original expressions to theoretical concepts and conclusions, and then continue by combining classifications as far as possible.

After collecting the survey material, we started by browsing it through, and while doing so multiple times, we began to find similarities between the responses, and found that some of the material was outside our study scope. With the research question in mind, we looked at the answers and highlighted the insights that answered our research question. We then began to form reduced expressions, which we combined into subclasses and later into superclasses. We were able to form two superclasses; the benefits and the disadvantages. Then we formed three subclasses; business, technology and legislation. In these, the impacts in markets, relationships, and roles, and the issues in security, privacy, transparency, and governance, are dealt with.

To facilitate the analysis, we created a table where we have recorded simplified expressions, subclasses and superclasses. The table below (table 3.3) provides an example of how our analysis has progressed step by step, from the original expression to the superclass. The quotes we use in the following chapter are almost in their original form, as we have only fixed a few minor grammatical errors to make it easier to read. We want to highlight, that we have not made any other additions or corrections.

**Table 2.3: Analysing example**

Original expression	Reduced expression	Subclass	Superclass
<i>“Since BaaS is so new (to me at least), the consumer might not understand what it actually means. If I sign up with bank A, I might not expect that the next day 10 fintech companies can access my data through BaaS and then</i>	Consent misunderstanding	Legislation	Disadvantage

<i>offer me the same services as I expect from my bank.”</i>			
<i>“I can think of the end-users when for example applying for a mortgage and buying a house. Everything would float super easily between the parties without face-to-face meetings for loan discussion, offering, buying, transforming the payment, etc.”</i>	Better customer experience	Business	Benefit
<i>“Create yet again an additional market to collect PII information about users.”</i>	Collection of Personally Identifiable Information (PII) data	Technology	Disadvantage

### 3.4.2 Analysis of interviews

After we completed each of our interviews, we started to transcribe the recordings. Furthermore, the transcriptions were sent back to the interviewee for approval before starting to analyze the content in the interview sessions. This was done, in order to ensure that all quotes are correct, which is crucial as fallacious quotes might lead to misinterpretation while conducting the analysis. In addition, this also was a requirement for us to be allowed to use the transcribed interviews to ensure the anonymity of the interviewees. Transcribing is defined as transformation from one form to another (Kvale, 1996), and in our thesis we transformed spoken content into written words. These transcriptions can be found from the appendixes (Appendixes 5-7). Worth of mentioning is that none of the interviews were conducted in English even if the questions initially were in English. We deeply believe that if an interviewee is allowed to answer in one’s own native language, as they in this case wished to do, it will contribute to the research with deeper and more precise insights, and therefore we have two transcriptions in Swedish and one in Finnish. All the interviews were transcribed manually from the recording to a Word document without any specific transcription tool since they do not work properly with Swedish and Finnish accents and pronunciations. As anonymity was promised for each of the interviewees, we have left out their and their employers’ names from the transcription in addition with the first questions which were about the anonymity and recording permissions we agreed on before we told them that we started the recording, since this was not of importance for the subject of the interview itself. Otherwise, we have not compromised the content, and therefore the text contains original expressions, slang and dialect, but also expressions of emotions, such as laughter and sighs, as the interview data is desired to be kept in its original form.

After each transcription was done and the approval of interviewee was received, we analyzed each of the transcriptions and used color code in the answers for discovering interesting insights in different contexts. These were then compared to find similarities that can be used to

support interpretations. The coding that was used in the analyzation of the interview data is presented in the catalogue below:

1. Green. General Banking-as-a-Service

2. Yellow. Technology context

3. Blue. Business context

4. Red. Legislation context

### 3.5 Quality of the Study

The quality of a research is most often measured with two main variables, the reliability and validity (Bhattacharjee, 2012), which should always be aimed to be met and eventually be completely fulfilled (Jacobsen, 2002). While reliability emphasizes that the results of the research are expected to be similar if the research would be conducted again (Bhattacharjee, 2012), the validity means that the results of the research are assured to be correct and accurate (Jacobsen, 2002). The reliability and validity are achieved through trustworthy working methods, which guided our daily research work throughout the study.

One significant factor for reliability is where the research takes its place, as attendee's workplace or their home is considered to have natural context effect (Jacobsen, 2002). In the surveys we did not have opportunity to guide the attendees when and where to fill the survey, but in the interviews the natural context effect was aimed to be achieved by encouraging respondents to answer to the interview question as a part of their workday. As the on-going COVID-19 pandemic and strict restrictions does not allow us to conduct the interview physically on site at the respondent's workplace, and it is highly possible that the respondents are working remotely, we see that having the face-to-face interviews via a video-call during the normal office hours would benefit the reliability of our research in the best way.

Then again, it is claimed that validity in qualitative research is more uncertain to be achieved than in quantitative research (Stenbacka, 2001) as it requires to conduct correct analysis of research results (Bhattacharjee, 2012). Validity can be divided into smaller parts, from which we have decided to use internal validity and external validity. Internal validity measures the match between the developed theoretical idea and observations (LeCompte & Goetz, 1982; Bryman & Bell, 2015). To achieve this, we first conducted a literature review regarding BaaS and its keystones, to have a strong theoretical background, that acts as a base for the survey and interviews, which allows us to use multiple data sources. Independent work in all stages of the research, and follow-up discussions with interview respondents to have a confirmation that the information was correct, supports the internal validity of our research. External validity measures if the findings in the research can in fact be generalized from the sample environment to other environments (Bhattacharjee, 2012). This may be relatively problematic in qualitative research, as it is characteristic that a use case study and small samples are used (LeCompte & Goetz, 1982). To overcome the issue, we have aimed to have diversity in our data collection, for example by openly offering the possibility to answer the survey through a social media platform, and by directing our interview suggestions to people that have very different roles yet are employed within the field of the topic.

### 3.6 Ethics

Serving as a base for research ethics, the Lund University's implementation of Sweden's Ministry of Education's Act on Responsibility for Good Research Practice and the Examination of Research Misconduct (2019:504) which states that "*the researcher is responsible for compliance with good research practice in their research. The University has overarching responsibility for research being conducted in accordance with good research practice.*" (Lund University, 2021). This act defines plagiarism, fabrication, and falsification as research misconduct if it is committed while planning, conducting, and reporting a research (Lund University, 2021).

The principles of whether behaviour is considered right or wrong is defined by ethics (Recker, 2013), and as these have been highlighted to us during our bachelor and master level studies, we are expected to be aware of the general guidelines of what kind of behaviour is accepted or not, and act in line with these guidelines. To meet these expectations, we have set four focus areas of ethical principles that guides our research, which are developed by Diener and Crandall (1978).

First, we must make sure that the attendees of our research "*have not been harmed in any way*" (Diener & Crandall, 1978). For this research, the attendees of survey and interviews are approached through a social media platform, called LinkedIn and by email, accordingly we have in both stated the purpose of our research, and offered the possibility to participate. In the survey no personal information is gathered and it is not mandatory to inform us about one's workplace, which enables us to secure the anonymity of the attendees in the survey. In the interviews we ask if the participant wanted to be anonymized, and also asked for permission to record the interview to be able to transcript it later.

Second, we must have the "*informed consent*" of the attendees (Diener & Crandall, 1978). In this research, we have clearly stated the purpose of it, and the attendees are asked to give their consent. The participation is voluntary, and the attendees have a possibility to cancel their participation at any time and inform if they wish not to continue anymore. Furthermore, participants in the interviews are given the opportunity to receive the interview question beforehand, to assess whether they want to participate or not.

Third, we must make sure that there is no "*invasion of privacy*" (Diener & Crandall, 1978). In addition to the anonymity of the attendees, we asked only questions that dealt specifically with the topic and purpose of our research. There were no questions nor need to ask questions that would somehow deal with the personal life of participants, and thus the privacy of attendees was secured.

Fourth and the last, we need to make sure that no "*deception*" is involved in our research (Diener & Crandall, 1978). By assuring the purpose of the research while aiming for the informed consent, we made sure that participants understood the purpose, and that the data and the results of the research are not modified nor used in another context, since they are only used for the initial purpose of the research, we ensured that no deception occurs in our work.

With these focus areas, and by ensuring the voluntary participation, anonymization, and disclosure, we made sure that our study is not being manipulated nor used for malicious purposes, and hence is in line with the good research practices.



As a final remark, we want to assure our own objectivity. Correct analysis and reporting of results and findings are essential to meet the ethics of research, and therefore the negative outcomes should also always be presented as well (Bhattacharjee, 2012). Even if the results do not meet the possible expectations, other researchers may use these afterwards which allows the results to cumulatively produce new information, and therefore we are presenting our findings objectively, as our intent has been to approach the topic in a non-biased way, and we deeply believe that objectivity is one of the hallmarks of science.



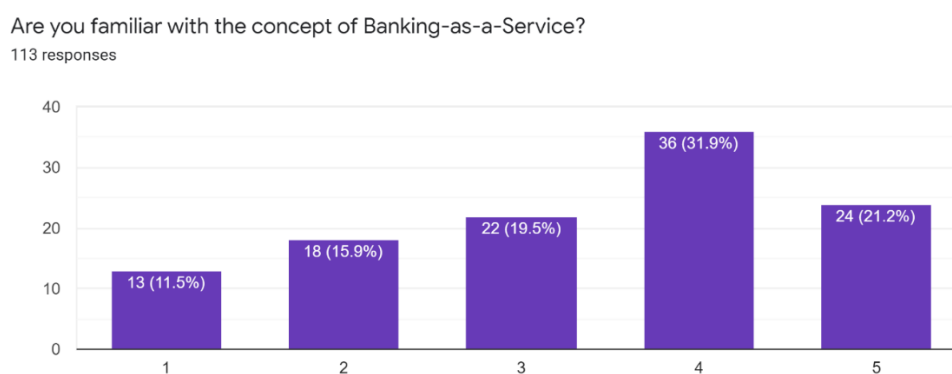
## 4 Results

In this chapter, we present the findings and results of our study. First, we present the survey results, which contains bar charts that implicates the general view on the matter, and after each chart we have summarization of insights, which are categorized. Straight quotes in this chapter are from the survey, as all of the survey answers were in English. In contrast, as we had two interviews in Swedish and one in Finnish, the references that are used in this chapter refers to a specific interview and floor, which can be found in the appendixes.

While we analysed the survey answers, we were able to identify three subclasses; business, technology, and legislation, which were then categorized into two super classes; benefits and disadvantages. The three interviews we conducted were based on a set of questions which we grounded in the literature review and furthermore in the survey after we had gotten a sense of the results to research the most interesting areas to an even larger extent. We had divided the questions into the same subclasses we found form the survey and chose to have one general BaaS area of focus in the beginning, the benefits and disadvantages were not presented specifically as classes to avoid steering the interviewees into a specific direction, however many of the questions also comprehended those aspects.

### 4.1 Survey results

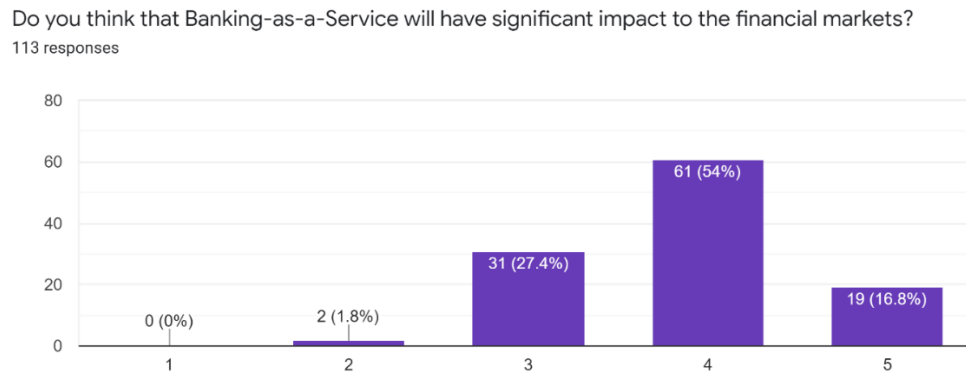
First, we wanted to examine the familiarity and get insights about how BaaS may impact on the markets and the relationships between the actors, and what kind of benefits it can create. As described in the diagram below (figure 4.1), the familiarity of BaaS is dichotomous, as 53,1% of the respondents were familiar or relatively familiar with the concept of BaaS, and the rest of the respondents were either unsure (19,5%) or not that familiar (15,9%) or not familiar (11,5%) with the concept.



**Figure 4.1: Familiarity with the concept of Banking-as-a-Service.** 1=I am not familiar, 3=Unsure, 5=I am familiar.

Most of the respondents yet thinks that BaaS will have significant impact to the financial markets (figure 4.2), as 70,8% sees that it will either have significant or relatively significant

impacts, and 27,4% was unsure. Only 1,8% of the respondents think that the impact is not that significant, and none of the respondents see that it does not have any impacts.



**Figure 4.2: Impact of Banking-as-a-Service to the financial markets.** 1=It does not have any impact to the markets, 3=unsure, 5=It has significant impact to the markets.

As we analysed the open-ended answers that dealt the impact of BaaS in the financial markets, most of the insights had business perspective. There will be a lot of “*new service providers*” and “*more players in the marketplace*” as challenger banks “*emergence*” and banking is made “*more agile, raising the bar for banks in offering their own services and enabling other firms to enter the fintech scene*” with “*new innovative approaches*”. There can already be seen affects “*on the banking world with the requirements of open banking regulations*”. “*This will hopefully lead to consumers being able to pick and choose services from best providers*”. This impact on the market especially benefits customers with increasing competition, which will affect the pricing and quality of services. If we consider the market impacts, and how it affects the third-party providers, for example due to BaaS, “*the “go to market” time would be shortened for new financial companies*”, meaning that newcomers can enter the markets rapidly, which is a benefit for third-party providers, such as fintech’s and start-ups. In addition, it also enables “*branchless retail banking*”.

If we consider these changes from the point of view of traditional finance institutions, the most significant change is new market opportunities, and thus new revenue streams, as “*existing banks will be able to capitalize their existing customers and data, to create new market opportunities for themselves. This will mean that instead of being fearful of Fintech’s, they will actually benefit financial from the Banking-as-a-Service trend*”. It is also possible that “*traditional banks offer just basic services*” in the future and narrow down their product catalogue, and that special services are provided by other actors. Therefore, development expenses decrease for traditional finance institutions as they can focus on their core business, but also benefits third-party providers as they can openly fill the gap in the market. In addition of just providing BaaS for third-party providers, there is also opportunity for “*outsourcing of own IT functions*” by providing BaaS “*between incumbent banks*”. “*The ones who can run infra cost effectively, can provide it as-a-Service for those, who put 80% of their IT budget to keep systems running*”. This opportunity makes a change in the market dynamics, and the conservative banks become dependent of developed banks, which benefits the second ones, but allows conservative banks to save on IT costs.

As newcomers can enter markets rapidly, there will be “*more competition*” and “*more innovative banking solutions*” in the market as there are more actors, and thus “*more room for innovation and agile ideas*”. This change in the market benefits especially customers, but also strong players. In addition, BaaS will have an impact on the market in form of renewed and developed “*client demands*”, and as the increased competition forces to meet the expectations of consumers, these new demands benefit customer as they can reach to more diverse services and choose the best one according to their needs. Customer experiences in the markets are also expected to change, as the “*high margin consumer facing activity up for grabs for who provides best user-experience*” which also enables “*improved customer experience*”. This benefits customers as the quality and diversity of services increases due to increased competition.

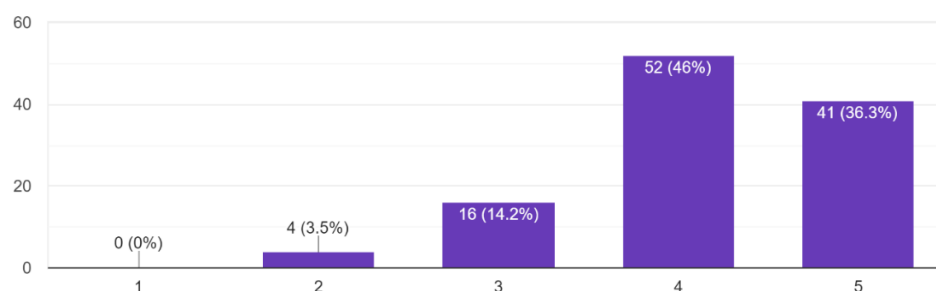
From the technology perspective, BaaS “*will substantially improve integration enablement*” and the use of open APIs enables “*a lot of automation because of BaaS*” as “*there is quick access to data from different sources*”, and the data flows smoothly through different service providers, which enables “*easier and quicker transactions*”. This especially benefits customers, but also the “*middle-hands*”, as processes can be automated. Yet, it also creates new “*demands on quality of data from those that utilize*” it, and yet creates again “*an additional market to collect PII*” data, which is a disadvantage especially for the objects of data, being the customers.

Despite of all the positive impacts, there still are some threats. As “*banking value chain is decoupled*”, there is a risk that “*banks turn into like in the telecom sector*” and then “*traditional banks customer acquisition*” would be affected as “*any company could provide banking services*”. This would be unbeneficial especially for traditional finance institutions. All in all, BaaS and its market impacts are “*threat for many, great opportunity for few*” as traditional finance institutions are “*losing out business to new, more agile players*”.

Most of the respondents also see that BaaS will have an impact to the relationships between traditional finance institutions and third-party providers, such as fintech’s and start-ups (figure 4.3). Only 3,5% of the respondents did not think that it would have an impact and 14,2% were unsure, while 82,3 % see’s that it will have an impact or a significant impact to the relationships.

Do you think it will have impact to the relationships between traditional finance institutions and third party providers, such as fintech’s and start-ups?

113 responses



**Figure 4.3: Impact of Banking-as-a-Service to the relationships.** 1=It does not have any impact, 3=Unsure, 5=It has a significant impact.

As we analysed the open-ended answers that dealt with the impact of BaaS in the relationships of the actors, most of the insights again had a business perspective. It is seen that BaaS would be *“beneficial for few incumbent banks, perhaps the ones with strong IT”*. This benefits some of the traditional finance institutions, but not all, and thus creates an endgame between conservative and reform-minded banks. It was also suggested that because of BaaS *“banks are looking to buy fintech companies and start-ups in the field”* and *“in an early stage”, “in order to facilitate in-house development”*. This impact would help traditional finance institutions to maintain their market share as gaining ownership.

BaaS also *“increases the competition”* and *“services quality”* as *“the one who provides best services, serves the end-client”*. These benefit especially consumers with better customer experience and perhaps increases stickiness and loyalty in the relationships between the one who consumes and the one who provides. Another insight is that BaaS will also *“make it easier for fintech’s and start-ups to gain credibility and reliability due to them having access to the APIs offered by the bank”*, which benefits third-party providers and creates strong partnership between the financial institution that provides BaaS, and the third-party provider that uses it for its own service offering.

BaaS creates partnerships, as *“the traditional finance institutions might even be interested in doing business with the new providers”* and thus creates *“better opportunities for smaller companies to have co-operation with a bigger company”*. This benefits traditional finance institutions as the relationships transforms from rivalry to partnership. It is also seen that *“third party providers will win the game as they can be innovative, banks will more and more benefit through them”*. This kind of impact in relationships can create an ecosystem where all benefit from one’s success. Especially third-party providers will benefit from the ecosystem, as they are able to succeed through partnership, as *“companies with innovative solutions gain larger market shares within their industry. Also, those who implement BaaS might reach more favourable economies of scale”* and gives *“possibility for exponential growth”*.

Also, the traditional finance institutions benefit from the partnership and ecosystem. *“When the Open Banking -initiative began, traditional banks were afraid that Fintech’s will use the open banking API and just steal all the data and customers they worked so hard to get. If however banks start to offer BaaS platform and charge Fintech’s and start-ups to access the data, traditional banks may get the income from Fintech’s, even if they may not be able to sell some of the services directly to the end-customer”*. This benefits traditional finance institutions as the partnership creates new revenue streams for them in a form of license fees.

This kind of partnership causes that *“capital, technical or regulatory moats reduce”*, which alongside of business benefit, is also a benefit from the point of view of technology and legislation for the third-party providers. Due to the partnerships and growth of ecosystem, supply in the markets expands and customers have *“more to choose from, prices and brands”*. Therefore, the new relationships of partnerships benefits consumer, as the competition increases, and service providers must create the best service package to strengthen the relationship between them and their customers.

Again, there are some disadvantages in addition to the positive impacts. *“The role of the traditional bank has changed drastically during the last 20 years, during the age of digitalization. We will see banks having to change their business model to compete with fintech’s”*. The change of role perhaps benefits fintech’s as they can conquer some of the markets, as the role of bank might turn into a broker, but in the meantime, it is a disadvantage to the traditional

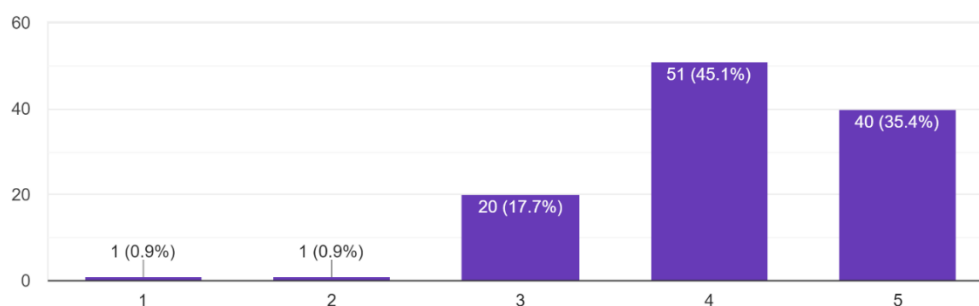
finance institutions as they might lose their share of the markets to their partners. This raises a question if the new revenue streams are enough to patch up for possible losses of current market shares. Also, not all banks even want to create partnership with newcomers, and *“only few banks will be interested in giving up their direct customer interaction”*. This is a disadvantage, but this will probably be a problem that the market may solve by itself.

There is also a *“risk that incumbent banks get stuck with maintaining the capital intensive and low margin infra business”*. This would be a significant disadvantage for traditional finance institutions as the relationship with newcomers might transfer the customership of consumers to fintech’s. It is also pointed out that perhaps the relationships do not even change, as *“traditional and large banks are pretty independent and usually they develop their own services”*. This would be a disadvantage for fintech’s if the traditional finance institutions exclude them from the markets, for these do have enough capital to compete against the newcomers.

Most of the respondents also see that BaaS can benefit traditional finance institutions and its stakeholders, such as fintech’s, start-ups and end-users (figure 4.4). Only 1,8% of the respondents thinks that it does not benefit them at all, or that the benefits are relatively low, while 80,5% thinks that it can create benefits or significant benefits. 17,7% of the respondents were however unsure.

Do you think that Banking-as-a-Service can benefit traditional finance institutions and its stakeholders, such as fintech's, start-ups and end-users?

113 responses



**Figure 4.4: Benefits of Banking-as-a-Service.** 1=It does not benefit at all, 3=Unsure, 5=It can create significant benefits.

As the implementation of BaaS would have impacts on the markets, it would also benefit third-party providers as *“large institutions play a smaller role, since opening up the APIs would mean that smaller firms have more of the possibilities at hand that traditionally only bigger firms have had”*.

For the end-users it will create *“superior digital services”* and *“will definitely help in getting more diverse and better services because of the increased competition”*. The increased competitions creates better and diverse services for customers, as actors are *“forced to look at new ways of working and offering services”* to meet *“customer needs”* and offer *“customized solutions”*.

As more, better, and easier services are available, it “will bring more clients, that will increase the institutions income” for example in a form of license fees. “Expanded client base” creates “more partnerships”, which creates “more revenue streams”. This is a constant loop, that speeds up itself as start-ups “can compete on a high margin consumer facing business” because “the biggest moats” that the traditional banks have, “are significantly reduced”, which will “give opportunities for traditional institutions and fintech’s”. As an example, in applying a mortgage and buying a house “everything would float super easily between the parties without face-to-face meetings for the loan discussion, offering, buying and transforming the payment”. The customer experience would become significantly smoother and better.

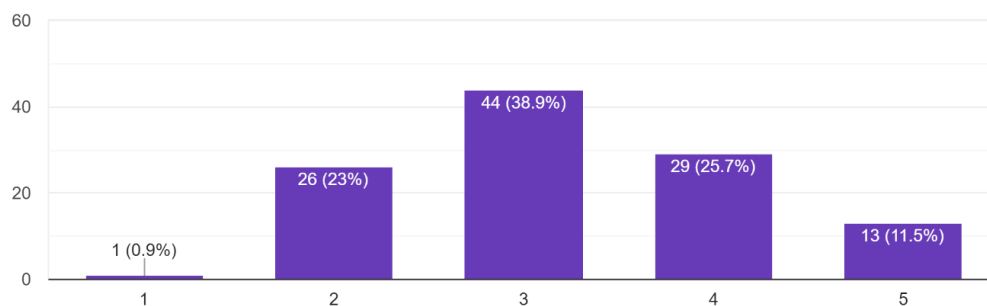
On the other hand, these benefits also create disadvantages. As the BaaS is a “great risk for many” and enables “great opportunities for few” it will benefit “the ones with both correct resources in place and who are fast to implement new business models”. “The companies still working with traditional tools will be left behind” and it will be “difficult to get an upper hand or at least on par with the competition”. This would eventually benefit the markets, but obviously is a disadvantage to the banks with outdated tools. There is a great risk that this would hurt traditional finance institutions, but it depends “on how they act”. It is also stated that there are “too many unknow factors” to consider the ultimate benefits.

It seems that the expectations for BaaS are relatively high, and it is expected to bring changes to both the market and the roles of the actors, as well as generate significant benefits for each actor. However, it is also significant, that a large proportion of respondents were very uncertain about their own position and could not take or did not want to take a position on the matter. Nonetheless, the responses were largely positive, with no high-class resistance to change, as most of the respondents appear to have a positive attitude towards BaaS and are at least somehow familiar with it. In contrast, opinions in problem tracking were clearly more divided.

As an example, while respondents were asked whether they see that there are issues within security within Banking-as-a-Service (figure 4.5), most of the respondents were unsure (38,9%), and 37,2% either see’s that there are issues or significant issues within the security of BaaS, while 23% did not see that many issues within the security, and only 0,9% see’s that there are not any issues.

Do you see that there is issues within security within Banking-as-a-Service?

113 responses



**Figure 4.5: Issues within security within Banking-as-a-Service.** 1=There is no issues within security, 3=Unsure, 5=There are major issues within security.



What comes to security, *“regarding tech, there will always be issues”*, but how *“easily they can be solved is another question”*. As we analysed the open-ended answers regarding security concerns, of course there was number ones, yet the confidence seemed to be relatively high. One reason for this might be confidentiality of traditional finance institutions, as these *“already have significant security measures”*, but also the strict regulations in the industry, and it was in fact suggested that *“all actors that handle financial information should hold a license of some kind, hence be audited”* and thus *“it should not be possible to just buy into the position”*. The third-party providers should *“have to undergo the same check as traditional institutions to get the license”* to operate, since not anyone can be let to access the market due to security concerns. In addition, it is also assumed that *“financial institutions have regulations on their stakeholders and new actors they will cooperate with”* which then would result in a reduced negative *“security impact”*.

It was also mentioned that *“technically the platform can be made as secure as any other services provided, but the regulation will have to work hard to keep up”*. Strict regulations are a legislative benefit as *“traditional banks are heavily regulated in terms of cyber security, risk management, etc”* but if the third-party providers, *“that will access BaaS platform will not fall under the same regulations, then there might be issues”*. Also, it was not believed that the security of BaaS would *“be a problem in general”* since *“if correctly done it should be at least as secure as on-premises”* as *“these days security measures taken are very advanced”*. Yet, it was recalled that BaaS might broaden *“the attack surface of the bank”* and create *“new supply chains to attack and shake”*. It was also mentioned that the security issues in open APIs are *“dependent on how the bank (the IDP in this case) open them up”* and reminded that *“if we see an adoption of example OIDC (OAuth 2.0) protocol where banks (IDPs) open up their APIs to certain RPs (relying parties)”* it is not *“an issue”* as in here *“the screening would happen during the stage where the IDP accepts a certain entity as trusted RP”*.

Most of the security concerns dealt with newcomers on the market, and it was mentioned that *“because the financial market would be a lot more open, it could introduce some new security threats”*. It was highlighted that more parties create more security risks, and that *“the more parties involved in the service, the more the security risk may increase due to errors, as there tend to be a risk for this when enabling third-parties access”*. One of the concerns was *“personal data and to what extent it can be used by operators and third parties”*, meaning that there is distrust regarding the use of PII data by third-party providers. It was also mentioned that some of the actors possibly are not secure enough, as *“third parties might not have as secure services as banks do these days”* and it is possible that *“companies which utilize Banking-as-a-Service have not prepared their security”* if the *“data is being scrapped by start-ups with potentially immature systems and processes”*. In addition, it was questioned if the third-party provider goes *“bankrupt, is everything handled with care”*. The concrete security concerns *“is dependent on service provider”* and *“how it will handle confidential data and access to customer account”* as *“there is always a risk involved”* but these risks are believed to be *“manageable”*.

Something that was highlighted in the answers was *“how to ensure that TPPs do not have access to any personal information of the banks customers”* and if open APIs create a possibility for *“data breaches through the new infrastructure”*. In fact, data protection and how to keep *“data private”* was one of the major security concerns, as there is a risk of data breaches, as BaaS requires and enables *“more data flow between parties involved”*. As data flows between more parties, it is questioned whether this increases the possibility of data leaks, especially *“if regulations and security best practices are not followed closely”*. Major



issues in this are “*handling of the data*”, “*quality assurance and security through the processing of data*” and “*storing information correctly*”.

It was also reminded that the end-users themselves have a responsibility about their own behaviour and actions, and as “*end-users have free hands when it comes to handling their own money through APIs, there is always a risk that something will go wrong*”. Traditional finance institutions are expected to make “*their APIs as secure as possible, but the final touch of the security is in the hands of the end-user*”. This in fact is a major “*information security problem*” as there is a possibility for “*unintended consequences of consumers*” which “*may then link to consumer protection*”.

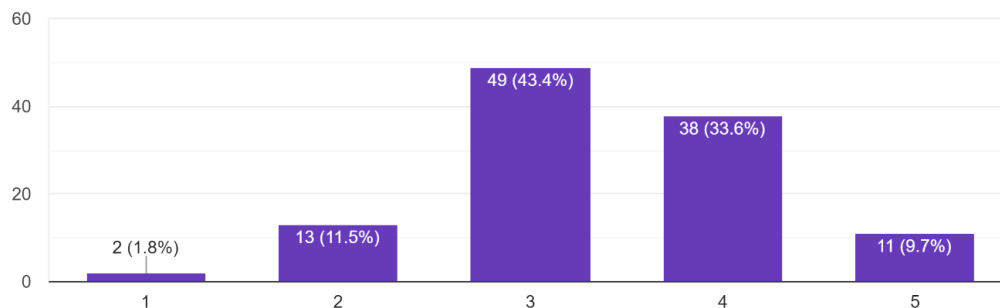
When respondents were asked to tell whether they see issues within privacy within Banking-as-a-Service (figure 4.6), the response rate for the “unsure” -option (43,4%) increased. While browsing through the open-ended answers regarding security and privacy, the answers also indicated that the respondents were not totally certain about the fundamental meaning of both terms, and that security and privacy are occasionally seen as synonyms.

Generally, this is understandable, as data protection and privacy are related to information security, and the protection of data and privacy requires information security measures (National Cyber Security Center, 2018). Information security refers to the securing of data, information systems, services, and network traffic, and it consists of confidentiality, integrity, and availability (National Cyber Security Center, 2020). Even though privacy has an echo from information security, and these do have common interfaces, these should not be mixed together, since in information security the aim is a more comprehensive securing and protection of data, but yet is one way for implementing privacy and data protection (Järvinen, 2002). This common misconception might explain why we received plenty of privacy issue related insights in the security question.

On another hand, also the number of answers that stated that there are issues or significant issues within privacy increased as well, as 43,3% of the respondents see’s that there is more or less some kind of issues, and then only 13,3% did not see that many or any issues within privacy.

Do you see that there is issues within privacy within Banking-as-a-Service?

113 responses



**Figure 4.6. Issues within privacy within Banking-as-a-Service.** 1=There is no issues within privacy, 3=Unsure, 5=There are major issues within privacy.

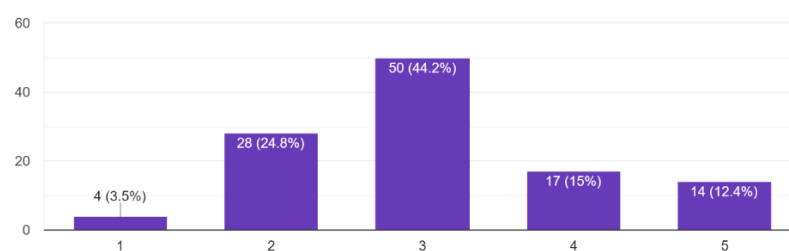
Privacy question was seen as *“kind of a philosophical tech question at heart”* and that BaaS is not *“contributing to privacy issues nor removing any”*. In general, *“the whole issue of privacy is tied to tech in general in much broader sense”*, so it is not seen that *“a specific case like this, will have any impact whatsoever on the large scale of things”*. In fact, one insight to the matter at hand was that there perhaps are not significant changes, as there is *“no issue specifically to BaaS”* and that BaaS *“will have more or less the same issues as now”*, since *“as long as EBA guidelines are followed and met, there should not be large issues”*. On the other hand, *“there can be, but if it is constructed and handled properly, the risk is minimal”*, especially *“if there is a standardized way of handling privacy”*.

It was recalled that in privacy issues, it is also the responsibility of consumers to decide what they wish to share and they *“should dictate”* so. Consumers must *“understand that it is their data that they themselves own”*. Yet there is also the possibility of misunderstanding the consent as *“regular consumers are not capable of understanding what they will give consent to”* and therefore *“the supplier needs to be transparent to the client”*. As BaaS is a relatively new concept, *“the consumer might not understand what it actually means”*. As an example, *“if I sign up with a bank A, I might not expect that the next day 10 fintech companies can access my data through BaaS and then offer me the same services as I expect from my bank”*. It was also reminded that *“banking is heavily regulated”* so privacy issues are not a big problem, as the *“the regulation that governs traditional banks have to govern BaaS and fintech’s too”*. But if the third-party provider or *“fintech can act outside the banking regulation, then they might take risks that banks are not allowed to, and then subject banking customers to more risks”*.

The possible lack of Privacy by Design -principles yet can create some privacy issues, as *“the industry does not approach the question from a ‘opt-in’ model”*. In addition, it is seen that BaaS *“could be implemented relatively careless with today’s technology”* and that *“for instance the account information could get leaked or shared”*. As some of the actors might want to participate *“for the amount of data”*, some of the customers *“might not like the idea that there is a lot of data collected about financial behaviour”*.

For the question regarding whether respondent see’s that there are issues within transparency and openness within Banking-as-a-Service (figure 4.7.), the multiplicity of answers increased even more. Most of the respondents (44,2%) were unsure about their opinion, while 28,3% did not see too much or any issues within transparency and openness, and 27,4% see’s some or major issues.

Do you see that there is issues within transparency and openness within Banking-as-a-Service?  
113 responses



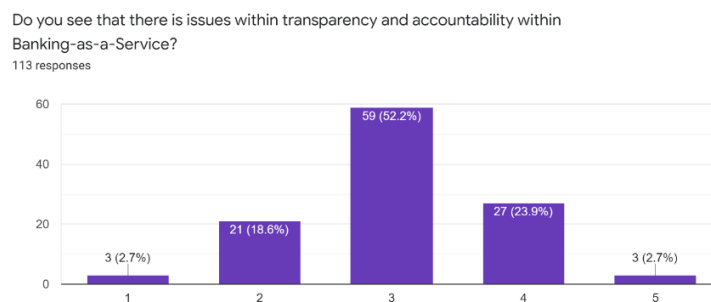
**Figure 4.7: Issues within transparency and openness within Banking-as-a-Service.** 1=There is no issues within transparency and openness, 3=Unsure, 5=There are major issues within transparency and openness.

For transparency and openness, the branch lessness can create issues, as *“the customer does not know the real organization behind the service”*. This would lead into a bigger disadvantage, being the misunderstanding of consent, as there is *“complex legal disclaimers, however no consumer actually knows what they are giving consent to”* and it is *“difficult to consumer to understand liabilities”*. Eventually understanding the consent *“depends on how the platform is built, and how consumers are informed about who can access their data, and if they are able to check who have accessed their data”*. It was reminded that *“if a consumer can even choose who they give their data to (bank, or bank + BaaS, or even choose individual fintech companies)”*, then there is no need *“to worry about transparency”*. However, if *“customer is only informed by one line in a long contract, then it’s definitely not open and transparent”*, which is a disadvantage. In addition, there is always *“the possibility if users are not informed enough”*, which may be due to ambiguity of the service provider, but also due to the lack of consumer understanding.

As the *“current regulations won’t be easier”* for third-party providers, *“than they are to old institutions”*, and the third-party providers *“must comply with the same directives as traditional banks”*, there should not be issues within transparency and openness. But as *“more vendors”* are *“involved”*, this *“might make transparency more difficult to follow”*. As an example, *“BaaS could make money laundering easier as you could make an automated script that transfers money from bank account to bank account repeatedly, and maybe even split the money into multiple account so that the origin of the money becomes hard to track”*. This would result as problems in Anti Money Laundering (AML) and Know Your Customer (KYC), and if not dealt, the consequences would be significant.

On the other hand, it is also seen that BaaS would *“enable transparency much more than the current model”* and make it open and transparent *“than the opposite”*. Needless to stay, *“it really depends on the provider”*, but if so, it would be beneficial for all actors.

As respondents were asked to consider whether there are issues within transparency and accountability in Banking-as-a-Service (figure 4.8) the answer rate for “unsure” -option was relatively high, as 52,2% of the respondents could not or did not want to state their position. There was only a few of extremity answers according to Likert-scale, as the answer rates for options “there is no issues” and “there are major issues” were both 2,7%. As it seems that most of the respondents position oneself more on a neutral area than to an extreme. Because of the contrast being quite high, it questions if the respondents understood the transparency and accountability perspective.



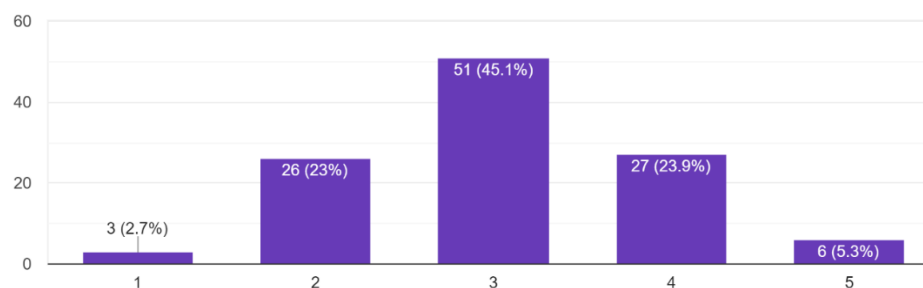
**Figure 4.8: Issues within transparency and accountability within Banking-as-a-Service.** 1=There is no issues within transparency and accountability, 3=Unsure, 5=There are major issues within transparency and accountability.

It was seen that BaaS would not have significant changes, especially to transparency but “*accountability might be the tough question*” as “*this all relates to the security question*”. It was reminded that “*security and accountability issues exist even in the traditional form*”. From the customer perspective the “*new players will face a lot of trust issues*” and they “*consider the old banks as safe and trusted parties*”.

The expectation is that “*regulators have to set the basic rules, and then individual banks, BaaS services, and Fintech’s will have to work out the details between themselves*”. The risk is that “*if the regulation does not cover BaaS or fintech, then we might definitely have accountability issues if and when something goes wrong*”. It was also mentioned that there is a risk that “*the company that uses BaaS might have a lowered sense of accountability, since they use a service and if something goes wrong, e.g., data breach, they just might blame it on the service provider*”, which would be a significant disadvantage and problem. To avoid these kinds of “*accountability issues, good contracts between BaaS provider and BaaS user need to be in place*”, so that the responsibilities and accountability cannot be transferred.

For issues within governance and decision-making in BaaS (figure 4.9), the contrast started to slightly level off, still most of the respondents were unsure (45,1%) about their stand. Most of the answers were also again placed more on a neutral area in the Likert-scale, as 23% saw that there are not that many issues, and 23,9% saw that there are some issues within governance and decision-making. Again, there was only a few extreme stands, as 2,7% saw that there are no issues, and 5,3% saw that there are major issues within governance and decision-making.

Do you see there is issues within governance and decision-making within Banking-as-a-Service?  
113 responses



**Figure 4.9: Issues within governance and decision-making within Banking-as-a-Service.** 1=There is no issues within governance and decision-making, 3=Unsure, 5=There are major issues within governance and decision-making.

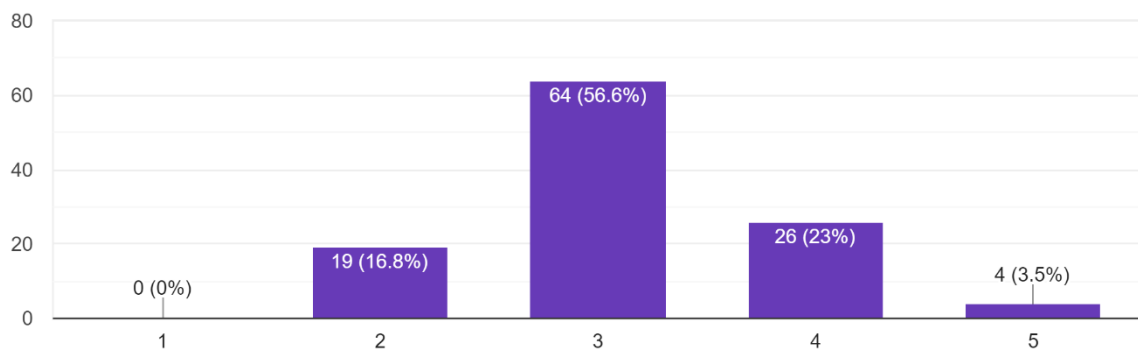
It was stated that “*the party that owns the risk, should ultimately make the decisions*” but also mentioned that it is “*not always clear, as you can just buy whatever you like due to regulation*”. This creates the question of who carries the risk, which may be clarified later, as it is seen that “*PSD2 is just a beginning*” and that “*PSD3 might come sooner than later*”.

“*Banks usually work very slowly, and new projects are not easily taken on*”. As the banks are slow developers, this is a disadvantage in a rapidly developing and changing world. In addition, “*banks might regulate too much and reduce functions available for BaaS service*”, which is a disadvantage that will lead to a situation where traditional finance institutions may kill the innovations in the market by using their strict power of platform captain.

For the question whether there are issues within governance and control in Banking-as-a-Service (figure 4.10), the response rate for the “unsure”-option was highest (56,6%) of all questions. The share of answers for seeing issues (26,5%) was higher than not seeing, as 26% saw that there are some issues and 3,5% saw that there are major issues within governance and control, while 16,8% saw that there are not that many issues, and none saw that there are no issues within governance and control.

Do you see there is issues within governance and control within Banking-as-a-Service?

113 responses



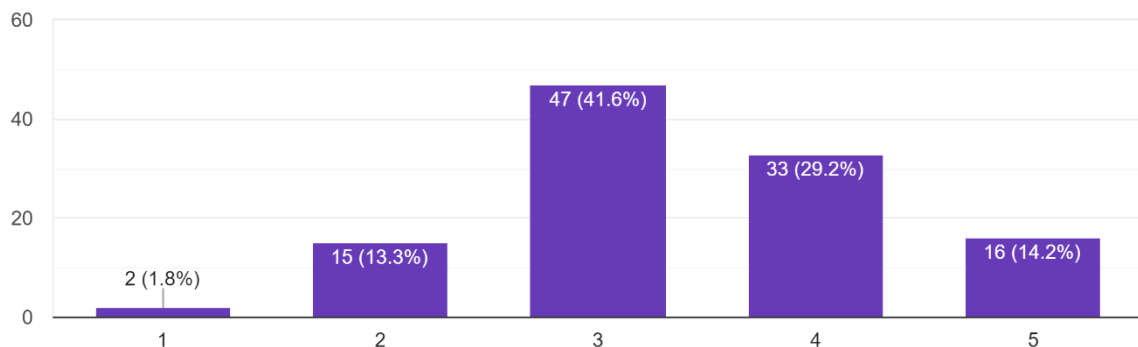
**Figure 4.10: Issues within governance and control within Banking-as-a-Service.** 1=There is no issues within governance and control, 3=Unsure, 5=There are major issues within governance and control.

The insights that we were able to gather regarding governance and control related issues, were relatively few, which is not a surprise, considering the number of “unsure” -answers in the previous question. According to the open-ended answers we found that, *“business controls need to be in place, and who has the responsibility where and how to ensure compliancy”*, which is believed to be something that is always taken into consideration when it comes to traditional finance institutions, but in turn *“also start-ups need due diligence”*. In addition, *“separate controlling instances have to be established”*. From the perspective of legislation, it is a major issue if it is unclear how the phenome is controlled, and if the responsibility in supervising the actors is unclear. As this raises the question regarding, who has the responsibility to control and supervise, this is something that we need to further deal with in the interviews.

As respondents were asked to consider whether they see issues within governance and regulation (figure 4.11), the contrast started to again slightly level off, as 41,6% were unsure about their stand, and 43,4% saw some or major issues within governance and regulation. Only 1,8% of the respondents did not see any issues, and 13,3% saw that there are not that many issues within governance and regulation.

Do you see there is issues within governance and regulation within Banking-as-a-Service?

113 responses



**Figure 4.11: Issues within governance and regulation within Banking-as-a-Service.** 1=There is no issues within governance and regulation, 3=Unsure, 5=There are major issues within governance and regulation.

The possible issues with governance and regulation mainly had legislative perspectives, which is understandable considering the context of the question. It is seen, that *“especially in the EU, the market is so regulated”* that there are not *“too many worries”*, as actors need to *“hold licenses”* in order to operate. On the other hand, it is also seen that *“regulations are becoming too much to handle, hard to deal with, and hard to integrate with”*. This is a disadvantage, as not all actors are willing to develop in line with new directives, for example such as the PSD2, but yet are forced into it by rapidly launched, new and updated regulations.

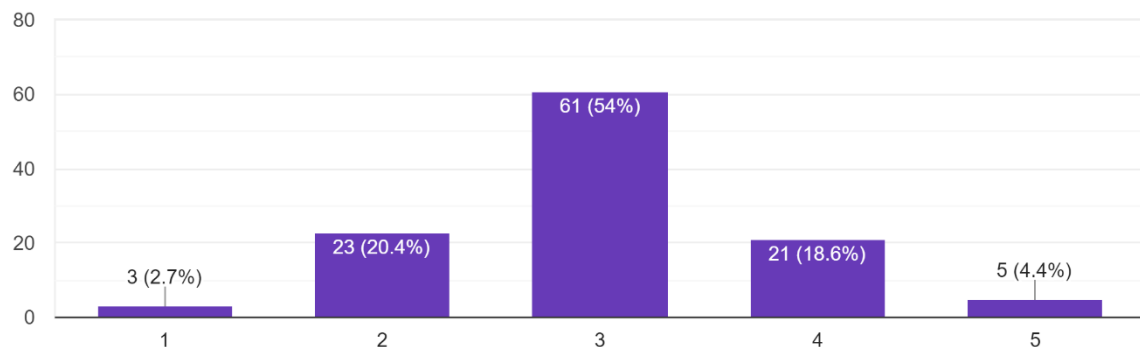
Another question and a possible disadvantage is that if *“a non-bank business wants to offer banking business to its customers, but not to bind itself to the banking regulation”*, are they able to avoid the regulations. *“If you can compete in the high margin business without the need of conduct dirty work, it is a difficult regulatory issue”*. As the financial industry is highly regulated, in the case of BaaS *“regulation have to follow the industry, and set the guidelines and rules for BaaS the same way it have set guidelines and rules for traditional banks, regarding everything from credit management and risk management”*. Furthermore, *“if regulators do not understand this concept and services are being offered in BaaS platform without clear regulation, then customers will be the ones who will suffer”*.

Lastly, respondents were asked to consider whether they see issues within governance and accountability in Banking-as-a-Service (figure 4.12), where 54% of the respondents were unsure about their stand. The share between respondents seeing or not seeing issues within governance was equal, as both had 26 respondents, and in both most of the stands are placed on the neutral area of Likert-scale. Only 2,7% of the respondents did not see any issues, and 4,4% saw major issues within governance and accountability.



Do you see there is issues within governance and accountability within Banking-as-a-Service?

113 responses



**Figure 4.12: Issues within governance and accountability within Banking-as-a-Service.** 1=There is no issues within governance and accountability, 3=Unsure, 5=There are major issues within governance and accountability.

There were relatively little insights regarding governance and accountability issues. From the legislation point of view, the responsibilities must be clear, and *“it can not be allowed to be any problems with who is accountable”*, as it is the only way to ensure that it is not the customers that suffer from the bad governance and irresponsible behaviour of actors in the industry.

The more difficult and complex the questions in the survey became, the more the answers highlighted the uncertainty of the respondents about the matter. This was evident for both the structured questions and the open-ended questions. For example, in terms of security, respondents openly shared their views with 43 open-ended responses, but in terms of privacy there was 26 responses, and in terms of transparency and accountability, we received only 10 open-ended responses.

Overall, it appears that uncertainty is relatively strong around the topic of BaaS, and it was not an easy task for respondents to take a stance with the matter. In particular, while the questions dealt with transparency and governance, the “unsure” -answer option was stressed, especially if the question had a perspective of accountability or control. Eventually, we were able to have a relatively clear categorization (table 4.1), yet there were some issues that have an interdisciplinary nature, and the classification of these in subclasses is likely debatable depending on what is perceived to be the fundamental factor in each of them. In addition, the classification of super classes also provides an opportunity to debate, as in some situations there is a discrepancy while considering if there is a benefit or a disadvantage, as the disadvantage for one may also be a success factor of another.

The share of “unsure” -answers in each question, and lack of insights from some of the open-ended questions raises questions regarding how successful this survey in fact was, and is the unfamiliarity the reason for the uncertainty, or were the questions designed poorly and was the perspective in some of the questions too hard. Yet, this survey provided us enough insights to design the interview questions, which allows us to further deal with the areas that suffered from the lack of certainty.



**Table 4.1: Occurrence of identified classes.**

Superclass	Subclass	Number of Occurrence
<b>Benefit</b>		<b>84</b>
	Business	56
	Technology	10
	Legislation	18
<b>Disadvantage</b>		<b>75</b>
	Business	19
	Technology	28
	Legislation	28

If we consider the superclass of benefits, it seems that a major part of them are business benefits, as this subclass could be identified in 56 reduced expressions. On the other hand, it seems that technology and legislation can create most of the disadvantages, as these both could be identified in 28 reduced expressions. As all subclasses are significant for either one of the super classes, we will continue dealing with these in the interviews.

## 4.2 Interview results

### 4.2.1 General Banking-as-a-Service

Because BaaS is quite a new concept (2.8.;2.83.;3.8.) there is no specific BaaS law, or standard, thus BaaS can refer to different solutions for different service providers (2.8.). In the past year or two, there has been more focus on the development of BaaS than before (2.10.). What the term BaaS includes is not specified, and at the moment it is impossible to say if it ever will be standardized (2.28.). Furthermore, there are many ways to accomplish the same outcome because different technologies might be used to develop BaaS solutions (3.16.).

The PSD2 sets the minimum requirements of what needs to be shared to the third-party providers from financial institutions, however to some BaaS solutions and partners even more data can be provided depending on the situation and what the solution requires (2.34.). One of the positive sides with the PSD2 is that the customers are in focus (1.10.;3.72.). BaaS is seen as the positive force that might open up or change the monopoly that banks have on the customers, and thus make the need for a specific bank smaller, or less prominent via the new services that the third-party providers can develop, based on what the APIs allow for because of the PSD2 (1.10.;1.64.).

#### 4.2.2 Technological context

The development today is very different to what it was 20 years ago, however, many financial institutions and sales companies already provided services together back then (1.34.;1.78.). Today there is much more weight on the technical aspects than before, which can be seen during meetings and planning between companies (1.34.). Smaller companies and bigger organizations might need to work together because it often can be easier to be agile when one is small, nevertheless, resources and a brand might be needed to find the right market and knowledge that is required for success (1.58.). It might also be cheaper for big organizations to buy the needed solutions and knowledge from smaller actors, and then integrate those to their own systems, than it would be to develop everything from scratch by themselves (1.58.;1.64.).

Furthermore, the end-users today assume a seamless flow when using online services, when not so long ago it was seen as normal for decisions and actions to take some time (1.108.). This leads to a situation where it is expected by the customer that everything works right away in a seamless manner, furthermore, a noticeably shorter patience is present on the market than before (1.30.). For this occurrence, APIs can provide solutions in forms of better access to data from other providers (1.30.;3.30.). This can lead to smoother experiences and shorter waiting times which can be seen as a positive thing for the customer, whom might not need to use several systems when making payments (1.12.;1.30.;2.14.). The trend today is that data should be available in real time, which makes running of files overnight a solution that does not do the job anymore (3.30.). This leads to the common usage of APIs of different kinds (3.30.).

APIs are both commonly used and secure, which makes them a natural choice when developing BaaS solutions (3.30.). Nothing can be said to be totally secure, nevertheless, as long as the needed and proper security aspects are taken into consideration in the right way, there should not be any major problems with the APIs used for BaaS specifically (3.30.;3.32.). However, credit scoring and loan applications are seen as they should be made by the financial institutions and within their systems (3.30.). This can be done by integrated solutions with the stores to ensure correct handling of data, even if the service can be branded and supplied as it would be provided by the same store (1.12.;3.30.). If applications are to be used for the BaaS solutions, appstores are the only right solution to avoid problems (3.38.).

APIs are seen as the base, and thus as one kind of requirement to be able to develop BaaS (1.28.). The PSD2 requires, and the APIs allows for many forms of solutions for information sharing (2.34.;3.14.). Thus, these APIs can be very useful for AISPs, however this might not be enough if the idea is to tie the customer more closely together with the store, because the APIs that the PSD2 requires, are not very comprehensive (1.10.;1.64.;2.34.;3.14.). The technological solutions need to be on a high enough level to be able to provide customer with proper services even if the customer chooses not to share all their data to get the best offers, which requires major investments and upgrades to the development of the infrastructure in organizations (1.12.;3.46.).

Because the investments into the digital solutions often are lagging behind in large organizations, the development of business ideas sometimes can come first, and the technological and legal aspects have to be thought of later on, this is why it is especially important to keep up on these parts (1.80.;3.22.). This leads to situations where problems can arise, even if the technology and legislation during the planning phase might seem to be common sense (1.80.).

Furthermore, because the BaaS concept is under development and not fully ready, some potential customer requests have not been possible to fulfill in the current situation (3.8.).

### 4.2.3 *Business context*

Banks have traditionally been concerned about new actors on the market and taken an attitude that new actors and solutions might be bad for their business, furthermore, when it comes to the PSD2, if others try to use what the banks have built and now must provide to others without them returning anything, have been a concern (2.38.;2.46.;2.52.;2.54.). This thinking is however now changing from what it was when the first news regarding the PSD2 came some years ago, to a different view of instead doing together and thus succeed, which is now more present (1.12.;2.16.;2.38.;2.46.;2.52.;2.54.). This might partially be, because the previous PSD2 versions indicated that the banks should provide the services and cover the potential harms, to a larger extent than the current PSD2 version requires (2.18.;2.54.).

Banks and financial institutions are often big and thus slow but instead have the funds and administrative power, when again small actors can be quick but might lack the right resources, together they can provide solutions that are based on solid ground yet innovate and develop services based on the current demand, relatively quickly (2.38.;2.46.;2.48.;3.22.;3.56.) In other words, BaaS can be seen as the product or solutions that can allow for smaller actors to enter the market and bigger institutions to provide their services for, via a synergy that can create value for all parts (2.46.;2.48.). Moreover, the existing large actors such as banks on the market might question and complain about new directives and laws, however they will develop the required services and changes because they must, since they are used to acting on a regulated market compared to others that might not be familiar with a situation of this form (2.50.;3.56.) The important part is to find a way to create value from what these changes allow for, since the changes, no matter what, must be implemented, they might as well be used wisely (1.78.;2.56.;2.64.).

It can be hard for newcomers to find the right resources to implement everything by themselves, and to adapt to the ways banks and financial institutions are working with banking secrecy and similar legislation (1.12.;2.38.;2.46.). However, the teamwork that BaaS can help build between traditional finance institutions and newcomers are seen as a positive opportunity (1.12.). Nevertheless, this also might lead to the situation where customers can see the service to be provided by the third-party providers, even if it would be the bank that is the force behind it all, and hence complying to the regulations (1.12.) Most importantly, everyone should benefit from the solutions for them to work in the long run (2.16.;2.38.).

There has for long been a situation where the departments that are in charge for the development both within banks and financial institutions, have found their job to be mostly to implement the effects of the new EU rules and legislation and moreover not listened to the customers (1.44.;2.64.) This has led to a lack of business-oriented development, which is something that BaaS hopefully can change, and thus function as a wakeup call to develop something with more of a business idea, in addition to the obligatory regulations (1.44.;2.64.).

A question that arises is, how many of the customers are willing to pay for the service if it only shows the customers data, which the customer already can access via previous services, merely in different ways (3.34.) If this new service is combined with memberships or similar extensions, that brings added value, which in the eyes of the customer it might be a totally

different situation (3.34.). However, we have not yet seen many services that would successfully provide the opportunity for the customer to choose freely, get the best offer available, and pay via the service of choice, whatsoever it might be (1.10.;1.42.;1.44.;3.36.;3.52.).

Furthermore, some actors already went bankrupt before the PSD, which might have been because the market was not ready at the time (2.18.;2.20.). Nevertheless, the development of BaaS and what the PSD2 allows for has just begun, there is a lot to do, and someone needs to be the first one that succeeds (1.42.). The opportunities might be huge, and there are no specific laws for BaaS per se, because it is still such a new occurrence (1.14.;2.32.;2.78.;3.8.). In addition, because of BaaS being new and hence viewed in different ways, bigger actors such as financial institutions might not want to work together with companies, that are small or new, if they have different values regarding the usage of data (2.28.). Moreover, the same situation also puts pressure on the traditional financial institutions, since the competition today is tough when making deals, since data that can be compared and found more easily among the actors (1.44.). Despite the competition and the legislation that forces organizations to change, this can, and should lead to positive outcomes, both for the customers and businesses (1.78.). Importantly, the thinking that the banks provide all the data and third-party providers can just use it to make profit has changed towards a common benefit and synergy between the actors (2.18.;2.38.).

Future developments on the market could be that the regular payment cards that are used to access accounts today when shopping, might be a thing that is not needed anymore soon, because of the services that will arise in the coming years (1.54.). This would lead to more freedom of choice for the customer when choosing from a broader variety of payment methods preferred (1.10.;1.56.). However, possible downsides might be as mentioned before, when everything is expected to work fast, and might be done in a hurry, there comes the question if the customer understands what they sign and agree on, and who they are to share data with (2.26.;2.62.;3.18.). Furthermore, it might become a problem for example if the customer shops at a specific store and a competing store gets the information regarding this and chooses to use the data in the wrong way, which is something the customer probably would not want to share or happen (3.18.;3.20.).

Much of the work that needs to be done, goes to keep up and comply with the regulations and into risk management when sharing customer data to third-party providers (1.14.). Rules regarding the sharing of customer data, can be regulated with data protection agreements (DPAs) which are conducted between the financial institutions and sales companies (1.18.). This is however not enough, there needs to be solutions in place so that the customer can end the agreement that allowed to share their data in the first place (1.22.). This leads to a broad variety of agreements and a need to work closely between the players and actors on the market (1.38.). Agreements and legislation such as the PSD2, GDPR, AML, accessibility, privacy, and the banking secrecy or financial privacy (1.14.;1.38.;2.22.).

One of the questions is what banks are needed for, if third-party providers in the future would take care of all the customer contacts and the customers would transfer their money straight to new actors on the market, such as Apple Pay, instead of traditional bank accounts (3.22.;3.24.;3.26.). The future is hard to predict, but in the light of what we know at the moment, there are no ready-made solutions or standards for BaaS (3.28.). However, if the concept and deals between the actors on the market are right, the required technology will be developed based on this (3.28.). One reason might be that traditional banks have the infrastructure secured, however, if they manage to keep their customers depends on their investments

into services (3.36.). Importantly, the industry is just forming and if the regulators see that it is going in the wrong direction in their opinion, they will probably adjust the directives and laws to steer it back on track again (3.72.). Finally, it can be said that BaaS puts the development abilities in focus and those who cannot adopt will not manage on the market (1.44.;1.78.). In the end, all of this has and should keep the customer in focus, and as long as we keep that in mind, something great will follow from BaaS for those who manage (1.44.;1.78.;3.72.).

#### 4.2.4 *Legislation context*

Banks and financial institutions are heavily regulated and to their nature they can be quite strict regarding what information can be shared due all the regulations that apply (2.26.). Because traditional finance institutions and banks must satisfy not only the customers and market, but also the regulators and comply with several laws, there has been a lack of investments directed to development in exchange to be able to present positive results (3.22.;3.66.). This in turn have created a space, for newcomers to fill with new services that are technologically more advanced and thus might be more attractive to the customers (3.22.;3.68.).

Legislation usually comes after the solutions that are based on new technologies and services are developed, first there is an idea, which a service is built on, then if it involves consumers there is usually a need for rules to steer the new phenomena in the right direction afterwards (2.64.;2.83.;3.28.). As long as everything, and everyone works as expected there are no problems, however what happens when something goes wrong (2.60.). When something goes wrong it might go very wrong and result in high fines because of all the legislation and data involved, it might also take actors that are not compliant out of the market and have the rest focus even more on legislation aspects (1.38.;3.56.). Who has the responsibility when something unexpected happens is an excellent and interesting question to keep in mind (2.60.). On the one hand the principle is clear, the source of the cause should cover the expenses, yet on the other hand it might be problematic if the source does not have the ability to pay, therefore it might end up being the banks or financial institutions who usually have the assets, who stands for the expenses in the end (2.60.;2.74.).

It should be common to dedicate persons to take the responsibility and ownership of services, at the same time it is teamwork and not up to only one actor or person to take all responsibility, alternatively it can be bought, however someone needs to be responsible for it either way (1.70.;1.82.). It is a puzzle of responsibilities regarding who might end up with the possible blame if something would go wrong (1.88.;1.92.;2.58.). In other words, the right employees are very important to have (1.64.;1.80.). Furthermore, even if there are legislation that applies for the whole EU, there are very different ways of working between different countries (2.22.;3.36.;3.70.). As an example, there is a lot of variety within the EU regarding how far the development of electronical banking services has become, this makes it hard for the regulators to find a level that fits all actors. (3.36.;3.70.). As an example, in the Nordic countries the technology-based services are very developed when in other countries people still use cash and go to the banks to do their daily tasks (3.70.).

Furthermore, new service providers might not be familiar with the handling of sensitive information regarding customers (3.20.). As an example, if the data about the customers shopping preferences is used to better target for example adds or discounts to specific customers, the data needs to be handled very carefully (3.20.). From a legal point of view, it would be good to

have standardized solutions since custom solutions always require a lot of work, which might lead to a situation where the service is offered to less actors (2.32.).

The question is why a customer would give permission to use for example, very specific data of payment card usage for a third party to better be able to target marketing (2.70.). In this case the added value for the customer is very important (2.72.). If something does go wrong, the actor sharing the data need to be able to show very specific consents where the customer in accordance with the GDPR allows for the data to be shared (1.14.;2.72.). As important is the right for the customers to withdraw their consent at any given time, and in accordance the actor must be able to execute the withdrawal properly (2.74.).

To conclude, no specific BaaS law exists, different laws and directives which sometimes are very old are used when solving problems and issues today (1.14.;2.32.;2.78.). Banking secrecy has been around since banks were founded, however GDPR brought up a “my data”, way of thinking even if the thoughts behind it has existed for much longer (2.66.). However, the PSD2 might not have such a big impact on the market as one could imagine, nevertheless the specific APIs can probably be used to do much more with future solutions that require information from customer accounts (3.52.). In other words, there might be other outcomes than the planned ones which is not a bad thing at all (3.54.).



## 5 Discussion

With the discovered benefits and disadvantages, our interpretation of BaaS and its current status and role in the digital transformation of the financial industry is to act as the starting shot for what the customers can expect in the future without the strict monopoly that financial institutions have had on the consumers in the previous years. It will most probably result in new solutions that were not among the reasons and thoughts when the PSD2 was planned. However, at the moment of writing, the PSD2 is an important part of the puzzle that allows the market to transform based on the APIs first, and later probably on much more. Furthermore, the status and role of BaaS can according to us mean digital platforms and API ecosystems for one actor, when again it can mean digital ecosystems and digital concepts for others, depending on how it is contained and packaged.

There have not yet been too many actors on the market that have managed to pull off the full potential of what the APIs allow for in combination with more comprehensive deals with financial institutions. As we mentioned in our literature review, those who have tried to bring new payment solutions to the market can witness how hard it can be (Hagiu, 2009). Furthermore, as we found out from our interviews, the right leverage is needed and together traditional financial institution with smaller and newer actors can form synergies that allows for additional and useful value to the customers, which can be seen as a reason for consumers to give their consents for the actors to use their very specific personal data.

Based on our survey and interview findings, we see that BaaS enables quicker and easier transactions, and due to this, service processes will become significantly smoother for customers, which results in better customer experiences. Furthermore, the smoothness of service processes also contributes to the overall view of financial services, of which some are expected to become superior due to increased competition, as service providers must comply with the customer's needs. Needless to say, superior services, and freedom of choice within products, payment systems and prices, contributes to better customer engagement, which then results in increased stickiness and customer loyalty, but also as an increased number of customers. As the customer base grows, this also creates more cashflows, which attracts new vendors and ultimately leads to creation of new and increased number of partnerships. As more vendors affiliate to the ecosystem, the more interfaces are available, as the providers for BaaS must answer to third-party provider's needs. When the number of provided interfaces increases, so does the number of services, and the more services are provided through the ecosystem, the more efficient the ecosystem becomes, as the interfaces offered are consumed, and customers have more reserve of choice. This is illustrated in the concept diagram below (figure 5.1), which presents the growth of a BaaS-ecosystem. The success of one, creates benefits for all actors, as successful circulation of the outer loop, contributes to the inner loop, which creates growth in the BaaS-ecosystem, and eventually benefits the traditional finance institution that provides the essentials of BaaS in the ecosystem, which we call as ecosystem captain according to Jacobides, Cennamo and Gawer (2018).



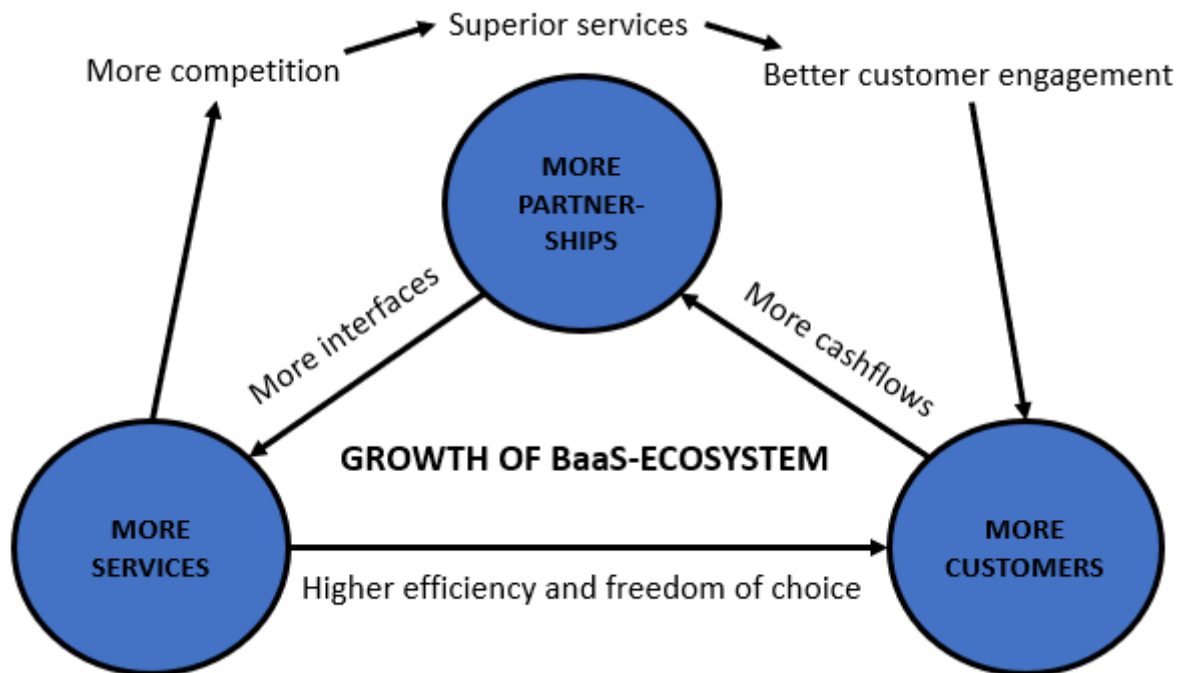


Figure 5.1: Growth of BaaS-ecosystem.

Due to the creation of an ecosystem, one significant insight in our survey was how the relationships between traditional finance institutions and their stakeholders, such as third-party providers, end-users and other actors, is impacted. If especially the relationship between a traditional finance institution and a newcomer is considered, there will be significant change due to the implementation of BaaS. As stated in the interviews, the reason for this kind of co-operation is the synergy and the benefits that it creates, and understandably these are achieved through partnerships. As newcomers in the financial market has been previously seen as competitors, the implementation of BaaS will transform the relationship of rivalry into a relationship of partnership. Eventually, these partnerships do benefit all actors in the ecosystem, as traditional finance institutions can create new revenue streams in a form of license fees, but also offer third-party providers products in their catalogue for their customers, without the need of targeting any resources to the development of such services. Furthermore, also the end-users and customers benefit from the partnerships in a form of reserve of choice, but also as superior services and competitive prices. Therefore, the partnership that allows the newcomers to enter the market, and utilize traditional finance institutions APIs, creates a phenomenon where success of one, is success of all. This is something that goes hand-in-hand with our findings from the literature review.

At the moment there not yet exists a legislative framework for BaaS as stated in the interviews, and since PSD2 only defines the minimum requirements according to Zachariadis and Ozcan (2017), as we discussed in the literature review. New regulations generally follow only after the emergence of new phenomenon, according to our survey and interviews, there is a possibility, that BaaS can now be utilized relatively careless, as the market newcomers may be too eager and misuse data, since their structures possibly may not have the same kind of restrictions, such as banking secrecy, which has always been clear and obvious for the traditional finance institutions. Thus, according to the survey and interview results, currently the opportunity to utilize BaaS has mostly been for specially decided relying parties (RPs), and for the rest only the open APIs that are provided due to PSD2 are available. This approach is

understandable, as the risk of misusing BaaS is significant, and thus traditional finance institutions self-monitors who they want to co-operate with. As the list of third-parties that can be seen as RPs, is strict and they need to meet the regulations and standards of the providers for the BaaS essentials, this reduces the risk of BaaS being misused, so in a way, the self-monitoring of the BaaS-provider already eliminates large threats.

Yet, in fact the privacy and data protection were some of the major concerns in the survey findings, and it was something that was also further discussed in the interviews. Possible privacy issues and how these are solved, are essential to deal with, to ensure that customers are not the ones to suffer from the emergence of new kinds of business models. To further discuss, during the last year, we have witnessed several data breaches in the Nordics, which some have been crucially serious. For example, in October 2020 it was reported by Independent (2020), that up to 40 000 patient records and personal data with names and social security numbers were stolen from a private psychotherapy center in Finland, and in addition Euronews (2020) also reported in October the same year, that in August 2020, there was a large data breach in Sweden, where thousands of highly sensitive documents were stolen.

These kinds of crimes have far-reaching consequences, as the sensitive data might be used for example in identity thefts, blackmailing, frauds or in other criminal or influencing activity, for example to obtain a lever arm to affect politics or to force to industrial espionage. Reflecting on this, concerns regarding privacy and data protection are not pointless. In our survey and interview findings, it was mentioned that technically the platforms can be made as secure as any other digital service, and as long as EBA guidelines are followed, BaaS would not create any additional issues. Worth of mentioning is still the own responsibility of an end-user, as it was questioned in both the survey and interviews, if a regular customer really understands where they are giving their consent to. In addition, the end-user's own actions may eventually be the biggest risk for privacy and security. The consent and understanding are something that service providers can contribute to with transparency, and traditional finance institutions should be building their systems as secure as possible, but ultimately the realization of the risk is in the hand of end-customers, as they are the ones to decide when to give their consent, and which services they want to adopt, as the privacy principles and data protection measures of some service providers may be more immature than others.

Due to the lack of legislation that regulates BaaS, we see that currently one of the most important question is who has the responsibility to carry the risks. As we found out from the interviews, there previously was a consensus that eventually the risks will be in the hands of traditional finance institutions, but now after the launch of PSD2, responsibilities have moved a bit towards the third-party providers, and according to our survey, that is how it is expected to be, as the one who operates, should carry the risks to a large extent. Yet, it was highlighted, that if the financial status of the third-party provider does not meet the fines of the consequences, the risk might still eventually burst in the hands of the traditional finance institutions, as they generally have the capital secured. Moreover, from a legislative perspective, it could be of benefit to have standardized solutions so that specific agreements and solutions could be minimized between the different actors that the information required for BaaS is shared to. This was also argued for and against in our literature review, where it was stated that the bigger the governance costs were, the greater the achieved benefits would be, and also the other way around (Huber, Kude & Dibbern, 2017). However, this could lead to the traditional institutions who can be slow in the development as mentioned before, to miss important opportunities and due to this result in themselves being left even further behind. Therefore, in accordance with our findings from the interviews and literature review, the impacts of the

right resources and knowledge in the form of employees and investments are crucial combined with the right balance between partnerships and governance.

In the literature review we discussed what de Reuver, Sørensen and Basole (2018), stated regarding the question if payment platforms should be considered as a digital platform or a phenomenon of its own, we could argue that at the moment the status of BaaS is yet to be formed and it cannot hence be placed in one or the other since BaaS is not seen as a platform *per se*, at least not yet. Nevertheless, BaaS would fit into the description of platforms since it often has several actors and components to consider, moreover it might be seen as a product or technology by others. We see BaaS as the natural outcome which the PSD2 has forced into action recently, even though the need has existed for long because traditional financial institutions have neglected both the development and the customer needs due to various reasons which have resulted in a space that is now for potential newcomers or the existing banks to fill. In accordance with what BaaS can allow for banks as stated in the literature review, most probably BaaS will form many different forms of synergies in between the actors on the market, at least in the beginning so that new solutions have the time to gain market share and the right resources to grow even further.

PSD2 comes up today in a broad variety of contexts as we found out in the literature review, therefore it might seem to be all over the field of information technology and even broader since it applies for a very extensive market via the financial institutions. However, it might not be as big of a thing, as many might think right now. We will for sure see more supplementary legislation in the following years to come. In other words, it can be said to be only a matter of ability to adapt, develop and change according to what the evolving market and technology brings, as also was stated to be the case for the APIs in the literature review (Basole, 2019). For those who manage with this, PSD2 probably works as an opening shot for all that can be developed under the name of BaaS. To conclude, both from the interviews and literature review, where according to Zachariadis and Ozcan (2017), the PSD2 is the starting point, that requires the financial institutions to open up their data for third-party providers to use. For this the most common solutions today are the APIs. Based on these more data can be shared to build even more comprehensive BaaS solutions, however this is something that actors in between usually develop together and not something that is imported and developed from the minimum requirement APIs due to possible customer consents which could allow to only gather data to some extent, as stated in the interviews. In other words, there are nothing forcing actors to develop very extensive BaaS solutions. However, the customer demand usually sets the phase of the development, and someone needs to be the first one to succeed with truly game changing solutions that are beyond the legislative requirements of today. Most likely the legislation will then be corrected accordingly, to steer and keep the market in the right direction, based on the solutions we are to witness in the near future.

Possible changes and outcomes on the market that BaaS can lead to for the customer, could result in a considerably smaller need to finish online payments in several different systems depending on the payment method chosen before the checkout is complete, according to the interview results. Moreover, it can be seen as a benefit also for the vendors who might be the link for the customer to the traditional institutions who are providing the essentials for the BaaS solutions and hence result in a positive impact on all the actors in the ecosystem. As we mentioned in the literature review and according to Zachariadis and Ozcan (2017), almost any sector such as the telecommunication sector could provide AISP and PISP solutions, this broadens the number of potential actors that together can provide BaaS in different forms to include almost endless combinations. Moreover, as found out from the interviews, the

phenomenon of BaaS might lead to situations where traditional banks and financial institutions will acquire more startups than before due to the fact that new innovations and entrepreneurs on the market can evolve and develop very freely compared to what the banks can do from scratch at the same time. Thus, the traditional institutions who have a need to develop, yet the assets available, might in the end only need to tweak the acquired solution a bit to fit into their existing systems and ways of working. This also goes hand in hand with what was argued to be possible due to APIs in the literature review (Moilanen et al. 2019; Huhtamäki et al. 2017). This situation could also boost new startups to work very hard and develop new game changing innovations in the hope of being bought when the time is right. Thus, the possibilities around BaaS in this way can be seen as a good thing for the whole market.

As discussed in the literature review and confirmed later during our interviews, according to Gawer and Cusumano (2008) it can be a very fine line for financial institutions to balance between own profits and opening up their data for others to use. In addition, because financial institutions need to satisfy both the market, customers, and comply with all the legislation they are for sure under a lot of pressure to develop and show that they can manage and match the name of the game today. Furthermore, as we stated in the literature review the developing of multisided platforms should never be ready according to Hagi (2009), and later also confirmed during our interviews, information technology is under constant development and should not statute. Thus, there is no solutions that can be said to be ready or complete, if something is not developed it can be seen to be under termination in a way, which in time will result in new solutions taking over when the right opportunity and moment comes.

## 6 Conclusions and Future research

Our conclusions -chapter summarizes our research results and further discussion by highlighting the most important findings and suggests possible research paths for further research. In the first section we describe the purpose of the thesis and present the current status of BaaS by dealing with key findings. In addition, we describe how we answered to the research question, and thus fulfilled the stated purpose. Lastly, we carefully speculate around the future outlooks of the industry and offer suggestions of future research to be conducted in the field of the phenomenon.

### 6.1 Conclusions

The purpose of this master's thesis was to examine the lightly researched concept of BaaS through digital platforms and ecosystems, API economies and relevant legislation, to shed light on the current status of BaaS in the financial industry. The starting point of the study was the question of what the current status of BaaS in the finance industry is. The aim was to expand the research base regarding BaaS and closely related concepts, such as digital platforms and API economy, in the field of information systems, and thus give a starting point for further research of BaaS. To meet the purpose, the research task was to examine the keystones and actors of BaaS and highlight possible problems and possibilities that occur with it at the moment. We approached the topic, and its benefits and disadvantages, from business, technology, and legislation perspectives, and reflected our findings with the question of the current status of BaaS.

Limitations of our study can be said to be the geographical location, being mainly EU with a more specific view on Sweden and Finland. Furthermore, it can be said to have an impact on the working progress that there is continuously new material available and in addition, as stated in the interviews, the development of BaaS is an ongoing progress at the moment, and thus it cannot be seen to be ready or having found a specific or standardized way of being used in business just yet. This is what makes BaaS interesting to study but also makes the data and information hard to divide into specific focus areas since the answers can be very broad and vary a lot and yet fit into many aspects simultaneously. Hence, we hope this will work as a steppingstone for more future research to be done around the topic of BaaS and what it will include.

Some implications can be found, both from the theoretical and practical. The results from our survey and interviews compared to the previous research we introduced earlier in the literature review chapter, can be said to go both hand in hand with some of the arguments, however at the same time there are many new thoughts and arguments that did not come up in the literature available. One example is how traditional finance institutions might acquire new start-ups because of their solutions, to be able to integrate these into their own systems, which was mainly discussed in the literature review with the perspective of, what is possible to integrate because of APIs. Another interesting example of what was not found in the previous literature, but which might be an important outcome of BaaS, is that customers might need to use considerably fewer systems when making online payments. The reason why such examples are not mentioned in the literature, is mainly according to us, because the previous material

available regarding BaaS specifically, is quite limited as stated before and cannot therefore yet cover all aspects. This led to the situation where we investigated relevant material to via it gather the best possible perspective of what BaaS is at the moment. It can be said that there exists a variety of understandings regarding what exactly BaaS is seen as. Our results bring many new interesting perspectives to the table, and it can be said that the more and deeper we did dive into the whole of what BaaS includes, the more we saw the width and possibilities, but also the disadvantages and immaturity of it.

Considering the discovered benefits and disadvantages of BaaS, we argue that its current status and role in the digital transformation of the financial industry is to act as a prologue of what customers can expect in the future without the strict monopoly that traditional financial institutions have had on their customers so far. The status and role of BaaS can mean digital platforms and API ecosystems for one actor, when again it can also mean digital ecosystem and bunch of digital banking concepts in a service ecosystem for others, as it ultimately depends on how BaaS is contained and packaged in each case. Yet, the creation of a BaaS-ecosystem has an impact on the relationships between actors, especially between traditional finance institutions, who are seen as ecosystem captains, and third-party providers, who are considered as complimentary providers. These newcomers in the financial market have previously been seen as competitors, but the implementation of BaaS will transform the relationship of rivalry into a relationship of partnership. Ultimately, the success of one actor in the ecosystem, creates benefits for all actors, as the synergy produces more value. Still, at the moment, the opportunity to utilize BaaS has mostly been for strictly decided relying parties, and the rest has an opportunity to utilize traditional finance institutions open APIs as PSD2 allows.

The question who will monitor who and can be seen to be in charge if something goes wrong, can become very complex since even if it could be said to be the one who caused the problem, as common sense would suggest, it might not always be the case. As we found out via the lack of literature regarding BaaS specifically, and from the interviews conducted with professionals having very specific knowledge in these matters, there does not yet exist any BaaS specific law. We will most probably need some real-life cases to happen before exact guidelines can be drawn and implemented on these very complex ecosystems on which a broad and various web of legislation applies. Moreover, it very much depends on, from which light the whole concept of BaaS is seen. As an example, if we say that in the next years traditional banks will lose market shares to newcomers, some could argue that this is how the economy should work, when others would argue about the jobs that might be lost within the traditional banks. This is however for others to investigate when the time is right.

As the financial industry is under significant transformation due to the era of digitalization, it will be interesting to see what the role of BaaS in it will be. As it is argued, we are seeing an end-game between traditional finance institutions that lack of digital development and the reform-minded developing banks, it is foreseeable that even some traditionally strong players will clearly weaken in the industry, as they will no longer be able to meet the demands of the market. As more agile and innovative newcomers enter the market, there is a significant possibility that these are able to meet the needs of consumers in a better way, and eventually the traditional finance institutions are left with only providing the basis for BaaS, as they might have lost customer-facing actions to third-party providers. Ultimately, old-fashioned operators would have to leave the market, and the more developed banks would stay only to maintain a low-margin infrastructure business. We could call this popularized as the realization of Anakin's paradox, where the action of one's doing to prevent something, ends up being the



catalyst for its occurrence. Only time will tell, if the opportunity of traditional finance institutions to provide BaaS to open new revenue streams, and to benefit of newcomers that inevitably will enter the market, will lead to the end of traditional finance institutions as we know them today. On the other hand, as third-party providers have built their services based on the open APIs of traditional finance institutions, this might give the leverage needed for traditional finance institutions, as third-party providers are hence dependent on the traditional finance institutions and their APIs, which potentially allows them to have control, make decisions, and raise pricing when seen fit.

## 6.2 Further research

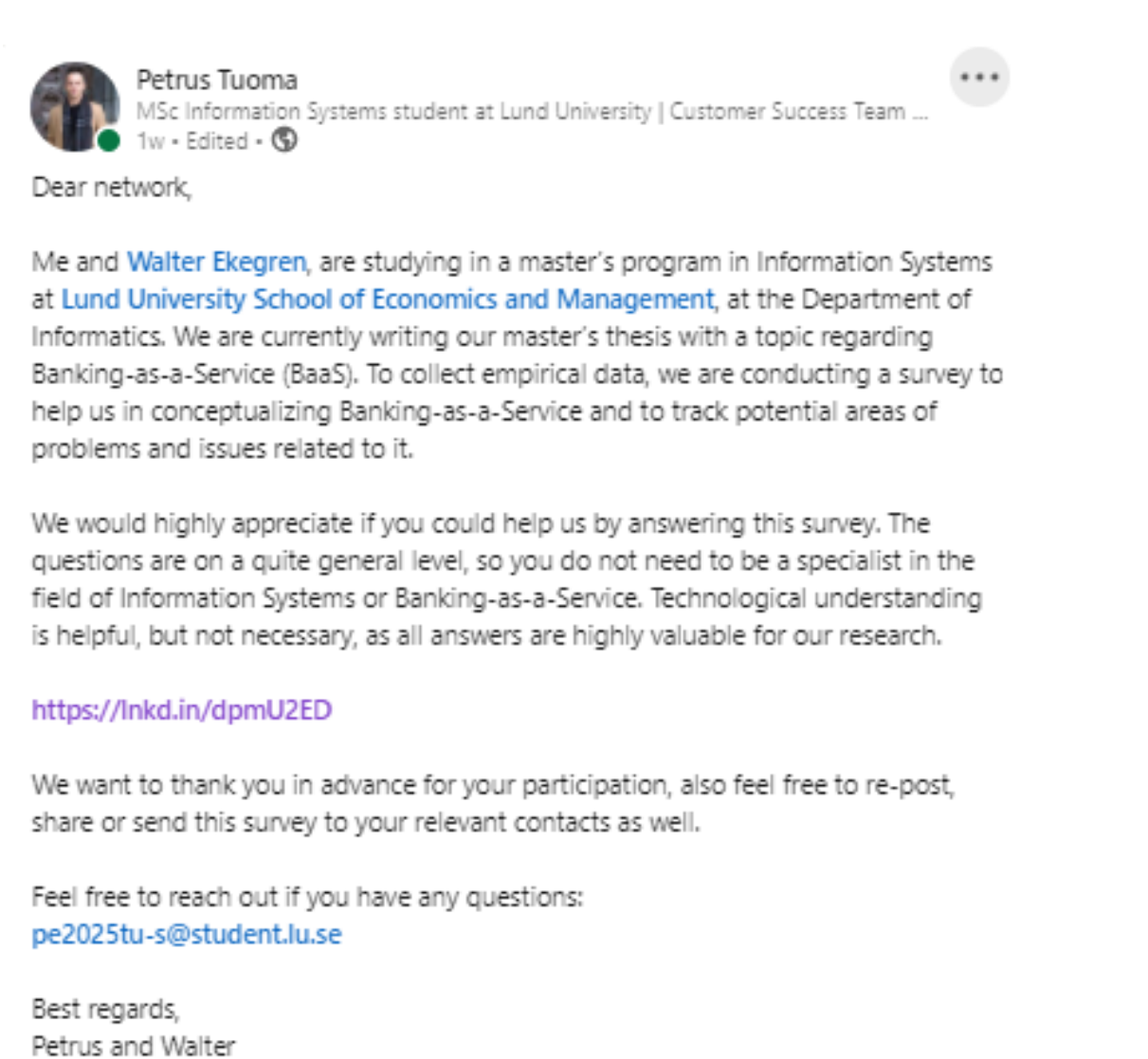
As we clearly have stated before, the phenomenon of BaaS is a new and lightly researched topic. Thus, our master's thesis has only scratched the surface of the whole, and there are numerous areas within it that are yet to be examined. Our study regarding the current status of BaaS no matter what gives an opportunity for further research, and some possible future research paths could be the relationships between the actors of BaaS, but also within the transformation of the market dynamics, as we expect that the implementation of BaaS will accelerate the change on the market, which can eventually lead the bitter end of some of the actors.

One challenge for us was that there is continuously new material available both regarding academic research and white papers. This leads to a situation when we would have liked to continuously revise our own writing all over again. On one hand, this is a challenge that all the actors associated with BaaS also might struggle with. On the other hand, this is exactly what is in the nature of information technology and we all should learn to use in the best ways possible.

Not to be forgotten, when we now, and in the future speak of BaaS, it depends very much on which perspective we choose to see it from, as is the case for other topics too. Hence, we hope this will work as a steppingstone for more future research to be done around the topic of BaaS and what perspectives it will include. More specifically we would suggest future research to go beyond the EU if possible or discover how the differences between other countries can impact BaaS in addition to only Sweden and Finland in the light and development of BaaS. New perspectives and solutions are always important to discuss and challenge before directly applying them, since in this way, the norms that we take for granted today might develop into something better for all of us in the future.



## Appendix 1 – Survey Posts



The image is a screenshot of a LinkedIn post. At the top left is a circular profile picture of a woman. To its right is the name 'Petrus Tuoma' in bold, followed by the text 'MSc Information Systems student at Lund University | Customer Success Team ...' and '1w • Edited •'. To the right of the text is a three-dot menu icon. Below the header is the text 'Dear network,'. The main body of the post contains two paragraphs of text. The first paragraph describes the authors' master's program at Lund University and their research on Banking-as-a-Service (BaaS). The second paragraph expresses appreciation for potential help and mentions that the survey questions are general. Below the text is a purple link: <https://lnkd.in/dpmU2ED>. The final paragraph thanks the reader and provides an email address: [pe2025tu-s@student.lu.se](mailto:pe2025tu-s@student.lu.se). The post ends with 'Best regards, Petrus and Walter'.

**Petrus Tuoma**  
MSc Information Systems student at Lund University | Customer Success Team ...  
1w • Edited •

Dear network,

Me and [Walter Ekegren](#), are studying in a master's program in Information Systems at [Lund University School of Economics and Management](#), at the Department of Informatics. We are currently writing our master's thesis with a topic regarding Banking-as-a-Service (BaaS). To collect empirical data, we are conducting a survey to help us in conceptualizing Banking-as-a-Service and to track potential areas of problems and issues related to it.

We would highly appreciate if you could help us by answering this survey. The questions are on a quite general level, so you do not need to be a specialist in the field of Information Systems or Banking-as-a-Service. Technological understanding is helpful, but not necessary, as all answers are highly valuable for our research.

<https://lnkd.in/dpmU2ED>

We want to thank you in advance for your participation, also feel free to re-post, share or send this survey to your relevant contacts as well.

Feel free to reach out if you have any questions:  
[pe2025tu-s@student.lu.se](mailto:pe2025tu-s@student.lu.se)

Best regards,  
Petrus and Walter



Walter Ekegren

1w · 🌐

Dear network,

Me and [Petrus Tuoma](#), are studying in a master's program in Information Systems at [Lund University School of Economics and Management](#), at the Department of Informatics. We are currently writing our master's thesis with a topic regarding Banking-as-a-Service (BaaS). To collect empirical data, we are conducting a survey to help us in conceptualizing Banking-as-a-Service and to track potential areas of problems and issues related to it.

We would highly appreciate if you could help us by answering this survey. The questions are on a quite general level, so you do not need to be a specialist in the field of Information Systems or Banking-as-a-Service. Technological understanding is helpful, but not necessary, as all answers are highly valuable for our research.

<https://lnkd.in/dMqf-kX>

We want to thank you in advance for your participation, also feel free to re-post, share or send this survey to your relevant contacts as well.

Feel free to reach out if you have any questions:  
[wa8872ek-s@student.lu.se](mailto:wa8872ek-s@student.lu.se), [pe2025tu-s@student.lu.se](mailto:pe2025tu-s@student.lu.se)

Best,  
Walter & Petrus

### Survey regarding Banking-as-a-Service

This online survey deals with the digital ecosystems and the use of open APIs from the point of view banking, by focusing to the concept of Banking-as-a-Service. The survey data will only be used for the data collection of research related to a master's thesis in the Lund University School of Economics and Management, Department of Informatics, in a master's program of Information Systems. The participation of this survey is voluntary and attendees can cancel their participation at any time.

This online survey is conducted with Google Forms and all answers are saved in an electronic form. We do not collect any personal information that can be used for the identification of the attendees, to ensure the anonymous of the participants.

If you have any questions about this survey or the thesis were it is used, or you want to state concerns or complaints about these, you can contact Lund University School of Economics and Management by email ([info@sem.lu.se](mailto:info@sem.lu.se)). Other contact information can be found from the Lund University School of Economics and Management website - Contact us (<https://www.lusem.lu.se/contact>).

\* Required

Consent of the attendee \*

### Survey regarding Banking-as-a-Service

docs.google.com • 1 min read

🌐 41 • 1 comment

👍 Like    💬 Comment    ➦ Share    ↗ Send

📊 1,663 views of your post in the feed

# Appendix 2 – Survey Form

23.4.2021

Survey regarding Banking-as-a-Service

## Survey regarding Banking-as-a-Service

This online survey deals with the digital ecosystems and the use of open APIs from the point of view banking, by focusing to the concept of Banking-as-a-Service. The survey data will only be used for the data collection of research related to a master's thesis in the Lund University School of Economics and Management, Department of Informatics, in a master's program of Information Systems. The participation of this survey is voluntary and attendees can cancel their participation at any time.

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If you have any questions about this survey or the thesis were it is used, or you want to state concerns or complaints about these, you can contact Lund University School of Economics and Management by email ([info@ehl.lu.se](mailto:info@ehl.lu.se)). Other contact information can be found from the Lund University School of Economics and Management website - Contact us (<https://www.lusem.lu.se/contact>).

\* Required

### 1. Consent of the attendee \*

I have read the information above and I am participating this survey voluntary.

Mark only one oval.

- I agree  
 I disagree

### Background information

Please fill in the background information to help us to understand the background of the attendees of this survey.

### 2. Organization's name and sector \*

If you wish not to name the organization you work in, please fill in only the sector your organization operates in.

### 3. Type of the organization \*

Mark only one oval.

- Financial institution  
 Fintech  
 Start-up  
 Consulting firm  
 Non-profit organization  
 Public authority  
 Educational institution  
 Other: \_\_\_\_\_

### 4. Your job title \*

The  
notoriety  
of  
Banking-  
as-a-  
Service

In this section we are asking your views about Banking-as-a-Service (BaaS) on a general level. If you are not familiar with BaaS, do not worry. We have a short introduction to the topic for you below from Business Insider:

"BaaS is an end-to-end model that allows digital banks and other third parties to connect with banks' systems directly via APIs so they can build banking offerings on top of the providers' regulated infrastructure, as well as unlock the open banking opportunity reshaping the global financial services landscape. The BaaS model begins with a fintech, digital bank, or other third-party provider (TPP) paying a fee to access the BaaS platform. The financial institution opens its APIs to the TPP, thereby granting access to the systems and information necessary to build new banking products or offer white label banking services. The two main monetization strategies for BaaS include charging clients a monthly fee for access to the BaaS platform or charging a la carte for each service used." (Dolan, 2021).

Dolan, S. (2021). How the banking-as-a-service industry works and BaaS market outlook for 2021. Business Insider. Available online: <https://www.businessinsider.com/banking-as-a-service-industry?r=US&IR=T>

If you still feel that you are unsure if you understood BaaS correctly, don't worry. Just answer based on your own understanding and from your own point of view. All answers are extremely valuable for the research.

23.4.2021

## Survey regarding Banking-as-a-Service

5. Are you familiar with the concept of Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

---

I am not familiar with it      I am familiar with it

6. Do you think that Banking-as-a-Service will have significant impact to the financial markets? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

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It does not have any impact to the markets      It has significant impact to the markets

7. Would you like to mention few possible impacts to the markets?

This question is optional.

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8. Do you think it will have impact to the relationships between traditional finance institutions and third party providers, such as fintech's and start-ups? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

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It does not have any impact to the relationships      It has a significant impact to the relationships

9. Would you like mention few of the possible impacts in the relationships or within the roles of the actors?

This question is optional.

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10. Do you think that Banking-as-a-Service can benefit traditional finance institutions and its stakeholders, such as fintech's, start-ups and end-users?

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

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It does not benefit at all      It can create significant benefits

23.4.2021

Survey regarding Banking-as-a-Service

11. Would you like to mention few possible benefits for one or more actors?

This question is optional.

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**Problem tracking within Banking-as-a-Service**

In this section we are asking questions to track what kind of problems and issues participants see in Banking-as-a-Service. These are later used for forming the research problem in our thesis and finding the focus.

12. Do you see that there is issues within security within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

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There is no issues within security      There are major issues within security

13. Would you like to mention few possible security issues within Banking-as-a-Service?

This question is optional.

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14. Do you see that there is issues within privacy within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

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There is no issues within privacy      There are major issues within privacy

15. Would you like to mention few possible privacy issues within Banking-as-a-Service?

This question is optional.

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16. Do you see that there is issues within transparency and openness within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1    2    3    4    5

---

There is no issues within transparency and openness      There are major issues within transparency and openness

23.4.2021

Survey regarding Banking-as-a-Service

17. Would you like mention few possible transparency and openness issues within Banking-as-a-Service?

This question is optional.

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18. Do you see that there is issues within transparency and accountability within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1 2 3 4 5

There is no issues within transparency and accountability      There are major issues within transparency and accountat

19. Would you like mention few possible transparency and accountability issues within Banking-as-a-Service?

This question is optional.

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20. Do you see there is issues within governance and decision-making within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1 2 3 4 5

There is no issues within governance and decision-making      There are major issues within governance and decision-n

21. Would you like to mention few possible governance and decision-making issues within Banking-as-a-Service?

This question is optional.

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22. Do you see there is issues within governance and control within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1 2 3 4 5

There is no issues within governance and control      There are major issues within governance and control



23.4.2021

Survey regarding Banking-as-a-Service

23. Would you like to mention few possible governance and control issues within Banking-as-a-Service?

This question is optional.

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24. Do you see there is issues within governance and regulation within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1 2 3 4 5

There is no issues within governance and regulation      There are major issues within governance and regulation

25. Would you like to mention few possible governance and regulation issues within Banking-as-a-Service?

This question is optional.

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26. Do you see there is issues within governance and accountability within Banking-as-a-Service? \*

Scale from 1 to 5, choose option 3 if you are unsure.

Mark only one oval.

1 2 3 4 5

There is no issues within governance and accountability      There are major issues within governance and accountability

27. Would you like to mention few possible governance and accountability issues within Banking-as-a-Service?

This question is optional.

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Thank you for participating this survey!

28. If you wish to comment the topic somehow, share your thoughts or leave some feedback, feel free to do so. Otherwise you can continue forward and submit your answers.

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23.4.2021

Survey regarding Banking-as-a-Service

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This content is neither created nor endorsed by Google.

Google Forms

## Appendix 3 – Interview invitation

**Petrus Tuoma & Walter Ekegren**  
Lund University  
School of Economics and Management  
Department of Informatics  
Lund, Sweden

**INTERVIEW INVITATION**

28.4.2021



### INTERVIEW INVITATION LETTER

Dear recipient,

Thank you for agreeing for an interview regarding Banking-as-a-Service. Your insights about the topic are highly valuable for our master's thesis, and we deeply appreciate your contribution to our research.

We would like to conduct the interview during this and the following week (28.4.-5.5.2021), and we are open for holding a conversation through Skype or by telephone. Could you please confirm when you are available for the interview and which channel you would prefer?

We are also sending our interview questions beforehand, so that you have an opportunity to get acquainted with the material in advance, as we believe that it improves fluency of the interview session and your comfortability during the interview. For the interview questions, please see the second attachment in the email.

Best regards,

Petrus Tuoma & Walter Ekegren

## Appendix 4 – Interview Guide

### Interview regarding Banking-as-a-Service (BaaS)

#### Introduction questions:

1. Do you give us your permission to audio record this interview? (In case not, can we take notes?)
2. Do you wish to be anonymous? (Name, but also title and company?)
3. (If yes/no) Do you want to tell a bit more about your background and education?
4. (If yes/no) What is your role/title and responsibilities in the organization?

#### Banking-as-a-Service:

5. How familiar are you with the concept of BaaS?
6. Would you like to specify from where, how, when or why?
  - a. Follow up question: Is this because of earlier knowledge or a specific perspective on the matter considering your title/role right now? How did you gather the knowledge you have? During your work tasks, via work related matters or during your spare time?
7. On a general level what kind of benefits do you see that BaaS can produce?
8. On a general level, what kind of disadvantages do you see that BaaS has?
9. What do you see being the corner stones of BaaS? (ex. PSD2)
10. Does any specific problems or purposes regarding BaaS come to your mind right away?
11. How do you see the role and status of BaaS at the moment, both generally and from your own perspective (or company situation)?

#### Technological context:

12. How familiar are you with the technology behind BaaS?
13. APIs are the most common technology used, it is not however required or specified to be the only option that must be used. Any thoughts on this?
14. What kind of security and privacy concerns does the deployment of BaaS and the use of open APIs create?
  - a. Follow up question: From the privacy and security point of view, how to ensure that the infrastructure and APIs are not used for malicious purposes?

#### Business context:

15. How familiar are you with business ideas behind BaaS? (TPPs, newcomers on the market because of PSD2)
16. How do you see the roles of traditional banks, fintech's, or similar in the future?
17. Digital platforms and API ecosystems, how do you see their roles regarding BaaS as a whole? (Will apps that use the APIs be distributed via them or are banks instead doing this on their own?)

- a. Follow up question: Large ecosystems, multihoming, and multisided platforms, do you see a future based on these solutions?
18. What kind of innovative banking solutions do you see that BaaS enables?
19. Do you see that traditional finance institutions are losing their share of the markets to challenger banks, or does the deployment of BaaS help to keep their stand?

**Legislation context:**

20. How familiar are you with the legislation behind BaaS, such as the PSD2 directive?
  - a. Follow up question: How do you see this affecting the market, what positive and negative effects comes to your mind especially regarding this?
21. Do you see that traditional finance institutions are mature enough and ready to align with the PSD2?
22. Do you see that the legislation rather forces the development of BaaS or instead enables it?
23. Do you see that it is possible for traditional finance institutions to meet the strict regulations while deploying BaaS?
24. Who has the responsibility to control and monitor how the actors in the BaaS ecosystem act?
25. How do you see the accountability? If for example an end-user's wealth or personal information is under a risk, who takes the responsibility for it, the traditional finance institution, or the third-party provider?
26. Do you see that the regulations already are, or are becoming too much to handle, hard to deal with, and hard to integrate as they change rapidly? (How?)
27. Do you see that there already is a regulatory framework for the development and deployment of BaaS, and that regulators understand in which direction the industry is developing at the moment?

**Closing questions:**

28. Is there anything else that you would like to point out or add, that we have not yet brought up?
29. Do you have any questions or feedback to us, general or regarding BaaS?

## Appendix 5 – Interview Transcription (Respondent 1)

Business Developer, organization 1.

Green. General Banking-as-a-Service

Yellow. Technological context

Blue. Business context

Red. Legislation context

Speaker	Transcribed text and color-codes
1.1. Interviewer	Vad är din bakgrund då som är relevant för Banking-as-a-Service?
1.2. Respondent	Ja, min bakgrund är att jag precis som er har börjat direkt från högskola så började jag jobba på ett nischat finansbolag, började i kundtjänsten. Och sen har jag arbetat mig uppåt. Så att jag har väl ungefär 16 år erfarenhet från bank och finans med betoning på finans och säljfinansiering. Olika roller, dels kundtjänst som sagt nåt år. Sen har jag jobbat som regions säljare på Stockholm arlands distriktet på en bank, sen har jag jobbat som key account manager i tre år där jag har bedrivit och lanserat ett kreditkort. Sen gick jag vidare till ett annat finansbolag och lanserade och drev deras kreditkort i fyra år. Sen gjorde jag en lite mindre ... som VD i ett bolag inom reklam och marknadsföring, för att den gå tillbaka till ett fintech bolag där jag jobbade som head of customer success, det var ett fintech bolag som är, där den största investeringen var Schibsted.
1.3. Interviewer	Okej
1.4. Respondent	Så det är min bakgrund innan jag kom hit och jag är anställd idag som affärsutvecklare, men med ansvaret att paketera BaaS och se till att vi inte gör det här bara för endkunderna, utan att vi tar fram lösningar som funkar även för andra kunderna som vi tar in också i framtiden.
1.5. Interviewer	Okej. Och isåfall så kanske vi tar oss djupare in i ämnet och frågar hur bekant du är med själva konceptet?
1.6. Respondent	Ja, innan jag började här så hade jag ju hört talas om och läst om det innan men jag har inte jobbat enkommet med Banking-as-a-Service. Däremot har jag jobbat med där man applicerar



		teknologin med APIer med integrerade lösningar, där man jobbar med tredje parts leverantörer och så vidare, så den bakgrunden har jag ju. Det var ju så vi byggde upp vår tjänst på min förra arbetsgivare, där skapade vi en finansiell produkt genom att samarbeta med tie stycken olika systemleverantörer.
1.7.	Interviewer	Okej. Och jag tror det delvis täcker också den här följdfrågan att när hur och var. Och kanske vi kan ta oss till helt på allmän nivå, vad tycker du att är dom kan man säga goda sidorna med vad det kan förekomma eller orsaka, och kanske också den negativa delen med vad BaaS kan ha med sig?
1.8.	Respondent	Och det är här jag tror att om man ser generellt sätt med Banking-as-a-Service så tycker jag personligen i alla fall att det är någonting som är jätte positivt. Och då kommer vi väl lite också in på PSD2 och Open Banking.
1.9.	Interviewer	Jo
1.10.	Respondent	Det hela direktivet gör ju dels är direktivet för PSD2 att man ska ha en skyddad och väldigt trygg kund autentisering eller identifiering. Vilket gör att man i det här direktivet så framgår det ju ganska tydligt att man sätter kundens intressen först och skyddar. Men den verkliga uppsidan med det här är ju att bankerna inte längre har monopol på kunderna, utan att tredjeparts leverantörerna med hjälp av APIer kan erbjuda tjänster hos sig själva och det här beroendet utav en viss specifik bank försvinner ju. Det här gör ju på sikt jag har inte sätt jätte många liksom komma riktigt vidare, men det gör ju på sikt att kunden kan välja själv och alltså att man får det bästa erbjudandet eller framför allt kanske liksom det jag vill betala med idag, vill jag betala med mitt American Express kort eller vill jag betala direkt genom en bank överföring från min bank till exempel. Och man ser på BaaS, ni får gärna ställa följdfrågor ifall ni vill.
1.11.	Interviewer	Jo
1.12.	Respondent	Det är ju lite otydligt med BaaS. Jag skulle säga såhär att om man ser på bas det vi gör nu för ett större säljföretag så det som är den verkliga uppsidan för både oss och säljföretaget är ju att vi bygger det här tillsammans även om slutkunden kommer i större utsträckning se att det här säljföretaget bedriver bankverksamheten själv så är det ju faktiskt vi som har, det är vi som finansbolag som står under finansinspektionen och det är vi som står för banksekretessen, vilket gör att vi är hela tiden motorn, vi måste se till att allting sker by the book. Fördelen med det här är ju att skulle jag säga att slutkunden i det här läget får ju en mycket mera snyggare upplevelse, det vill säga att man handlar hos det här säljföretaget och man får relevant information från säljföretaget och jag tror att med hjälp av det här

		datan som vi nu också diskuterar att vi ska dela, så gör det ju också att slutkunden kommer få ännu mera relevanta erbjudanden i framtiden än vad man kanske fått tidigare.
1.13.	Interviewer	Jo. Det här tror jag täcker ganska bra både frågan nie och 11. Men ser du nå specifika problem med det här?
1.14.	Respondent	Ja, jag skulle säga såhär att riskerna med det, och det är ju lite det som är en stor del utav av det arbete vi gör just nu, det handlar ju om riskhanteringen. I och med att det här är ganska nytt så finns det ju inte nå riktigt klara lagar och regler utan det blir ju mer en tolkning utifrån dom befintliga regelverk som finns, till exemplen banksekretessen. Vilka uppgifter får vi so finansbolag dela med oss till en tredje part och vilka uppgifter får vi inte dela med oss med en tredje part. Dom uppgifter som vi får dela med oss till en tredje part, hur ska det regleras för så är vi inne på den här uttryckligen samtycken, där man liksom skall be kunden om lov.
1.15.	Interviewer	Jo.
1.16.	Respondent	I ett vanligt fall där man på en övergripande nivå delar kundinformation då räcker det ju ofta med att säljföretaget och finansbolaget har dpa tillsammans där man då ganska tydligt i det här DPAet, vet ni vad DPA är för nånting?
1.17.	Interviewer	Faktiskt inte.
1.18.	Respondent	Nej, okej. DPA det är ett underlag som, nu skall vi se, data protection agreement som det underlaget skall vara ganska beskrivande med vilken information som finansbolaget delar till säljföretaget och lite krav på hur säljföretaget får liksom bearbeta den här kunddatan.
1.19.	Interviewer	Mmm.
1.20.	Respondent	Så den har dels påverkan där, och viss information är ju känsligare än annat och det där är ju liksom ett puzzel just nu att lägga ihop liksom när man skall grotta in sig ännu mer i det här samarbetet och jobba ännu närmare varandra så jag skulle säga att stor del av vårt arbete går ju åt just där och se till att liksom vi som finansbolag sköter oss och gör allting liksom korrekt på ett bra sätt. Sen har det ju också påverkan i hmm för slutkunden, vad är det vi kan reglera i ett konsumentavtal när om man till exempel gör ett köp eller väljer en delbetalning, och vad är det som måste, vad är det som inte räcker där med tanke på det här om man då ser PSD2 och den delen som kräver ett, å men nu har jag tappat namnet för det, men det heter hmm, uttryckligt samtycke. Heheh.

1.21.	Interviewer	Jo.
1.22.	Respondent	Så är det det heter. Och då räcker inte bara ett konsumentavtal, utan då måste vi hitta en lösning för liksom hur tar vi in det här och kunden skall ju också kunna avsäga sig i det här samtycket och så vidare. Så det blir ju lite liksom följd effekter på det här. Det viktigaste är ju att kunden inte kommer i kläm vilket gör att det ställer ju höga krav på oss på att och samarbetet mellan oss och säljföretaget att dom gör det som vi har kommit överens om och inte gör någonting annat med datan.
1.23.	Interviewer	Jo exakt. Hmm, du kom redan lite in på teknologin här också nämnde APIer tidigare men om vi om vi se närmare på dem så ser du några problem eller andra tankar kring det? Det måste ju inte vara specifikt APIer som används, det har bara kanske blivit det allmännaste.
1.24.	Respondent	Ja precis. Nu funderar jag på bara så jag följer med, vilken fråga är vi på?
1.25.	Interviewer	Ja, jag hoppade nu från 11 till både 12 och 13 för att du.
1.26.	Respondent	Aaa okej men vad bra, perfekt. Hmm.
1.27.	Interviewer	Du nämnde ju APIer i början och ja tror vi fick en ganska
1.28.	Respondent	Ja men exakt. Nej men det är ju självklart så att jag tror faktiskt att den arbetsgivaren som jag jobbar hos nu, har kommit ganska långt i det här, vi är ganska duktiga på att kritisera oss själva men ja, min bild är faktiskt ligger ganska bra i framkanten med just de här delarna. Ja tycker att vi har väl dokumenterat, vi har brutit ner APIer i fristående plug-ins så att har vi en kund till exempel som bara vill, som bara vill sälja delbetalning, och jag vill göra det i vårt egna gränssnitt så kan vi hjälpa till med det. Jag skulle säga såhär att APIer är ju en förutsättning för att liksom kunna köra Banking-as-a-Service likt till dom företag som vi vill jobba med. I vanliga fall och när jag började i finansbranschen då var det lite som T-Forden att one size fits all, eller att du får välja vilken färg du vill på Forden så länge som den är svart, hehe!
1.29.	Interviewer	Jo, haha!
1.30.	Respondent	Och i dagens samhälle skulle jag säga att det är ju det här som skiljer sig, det är det här som är egentligen tycker jag BaaS, tanken är ju att ett säljföretag eller en tredje leverantör ska kunna liksom skapa den här sömlösa köppupplevelsen. Och det gör man ju inte med en extern kassa, utan det gör man ju genom att

		kunna erbjuda API lösningar som pratar med finansbolaget men man lämnar aldrig siten.
1.31.	Interviewer	Jo.
1.32.	Respondent	Sen är jag inte djupt teknisk och jag är inte en kodare, långt ifrån dessutom, hehe!
1.33.	Interviewer	Jo, heh!
1.34.	Respondent	Men jag har ju den överblickande tänket. Och jag pratar ju hmm, jag tror också det här är viktigt för säljare i framtiden om vi kommer in på den delen. Jag tror att en finansförsäljare idag, kontra imorgon, ställer betydligt större krav på de tekniska delarna, vilket gör att det här blir ju en utbildningsfas, som för vissa kommer göra lite ont. För att för 20 år sen, när du hade ett möte med ett säljföretag, då pratade du ofta med säljchefen eller med butikschefen eller med ägaren. Nu upplever jag att mycket av de här dialogerna man har liksom i nya samarbeten, då pratar man med han som är it ansvarig eller affärsutveckling ansvarig. Det betyder ju att du säljare behöver ju ha en viss teknisk kompetens för att ni skall kunna ha en värdeskapande dialog tillsammans och hitta lösningar.
1.35.	Interviewer	Mm, exakt. Och det kanske för oss in lite på både 14 och följdfrågan, kommer du att tänka på.
1.36.	Respondent	Jag skall bara läsa 13 så jag inte missade någonting. Ja
1.37.	Interviewer	Att då den här IT kunskapen i bolagen och under kundmöten till exempel, ser du några risker med säkerheten och kundens privata?
1.38.	Respondent	Ja, självklart, absolut. Direkt när man är, till en, liksom skapar API form och när vi själva inte riktigt äger liksom byggandet. I en vanlig kassa för 10 år sen, då bjöd ju alla finansbolag en typ av lösning, och den typen utav lösning så var det ju banken eller finansbolaget som drev själva. Nu när man liksom försöker stycka upp det i olika delar, så ställer det ju ganska höga krav på att om vi leker med tanken att ett säljföretag vill köra, vi säger delbetalning, och så skriver de in det i sitt egna gränssnitt för den funktionaliteten men då är det ju ganska mycket annat också som finns i den traditionella kassan som inte finns, till exempel, samtycke, det finns dom här olika konsumentavtalen, det finns vad heter det, integritetspolicy. Den texten, och den liksom juridiska dokumenten, där är det ju super viktigt, både för och oss och finansbolagen som erbjuder, men också för säljföretaget att dom har mera, alltså det blir en helt annan kontroll och ett samspel mellan säljföretag och finansbolag än tidigare.

		För går det fel kan det ju gå riktigt fel och det innebär ju ganska höga bötesbelopp.
1.39.	Interviewer	Jo. Och hmm, böter har väl också att göra med följande under rubrik, själva business kontexten. Hur bekant är du med själva idén om man kan säga så, bakom Banking-as-a-Service både med nya bolag på marknaden och då third party providers till exempel som har uppstått basen eller på grund av vad PSD2 möjliggör?
1.40.	Respondent	Hmm vi ska se här, då är vi inne på 15, 16.
1.41.	Interviewer	Ja, ungefär så.
1.42.	Respondent	Aa, precis. Jag skulle säga som så såhär, generellt sätt om man ser till BaaS, man ser till PSD2, Open Banking och så vidare. Jag skulle nog säga så att det som det här möjliggör, vi har skrapat på ytan än så länge. Om man ser på Klarna till exempel, som jag ändå tycker har kommit liksom långt om, dom var ju en utav dom första som tog tag i taktpinnen och började förnygra eller digitalisera en ganska föråldrad bransch.
1.43.	Interviewer	Jo.
1.44.	Respondent	Det som det här gör, det är ju snarare en mentalitet att finansbolag och banker måste satsa på utveckling. Man brukar säga som såhär, att om du inte utvecklas så är du under avveckling. Och det är lite det jag vill säga med det här också, Banking-as-a-Service sätter ju en blåslampa på dom traditionella bolagen, eller finansbolagen att liksom hänga med. ... var ju ett bra exempel på det, ... var ju ett bra exempel på det under 90-talet, och sen så lyssnade man inte riktigt på dom nya tomgångarna, man hängde inte riktigt med i utvecklingen vilket gör att man är ju inte där idag. Och precis på samma sätt tror då jag kanske att banker och finansbolag att ha, lyssnar man inte på kunderna hänger man inte med i utvecklingen, har man inte produkter som är, tidigare tror jag liksom det är det här med som gör att tidigare hade man monopol på kunderna. Man kunde sätta sin egna prissättning, men med hjälp utan då, men som Lendo till exempel. För tjugo år sen gick du till, till exempel Handelsbanken och sade att jag vill ha banko lån. Vad kul att du vill ha ett lån, du får en ränta på tie procent och kunden då hade ju inget alternativ så han tyckte väl att åå tie procent låter som bra. Men i dagsläget så kan du ju gå in på en snabb omkring lån, du kommer in på Lendo och kreditupplysning, tar in information från tie stycken långivare, och så väljer du det erbjudandet som är bäst. Och istället då för att 20 år sedan få en ränta på tie procent så kanske du nu får en ränta 3,95 vilket gör att om du erbjuder i ett sånt forum tie procent så kommer du aldrig att få den här kunden. Det gör ju att det ställer mycket högre krav, och liksom

		en transparens och det liksom eemm, du måste erbjuda kunden ett attraktivt erbjudande, annars väljer dom någon annan. Och det är ju precis det här beteendet som jag tror att BaaS och Banking-as-a-Service kommer att mynna ut i ännu tydligare än vad det gör idag.
1.45.	Interviewer	Jo. Och ja det här kom ju in då på både nummer 16 med traditionella banker och nykomlingar. Men om vi går vidare till 17 så ser du speciellt just alltså digitala plattformar som nuförtiden mestadels är baserade på APIer,
1.46.	Respondent	Mmm
1.47.	Interviewer	Hur kommer deras roller att bli eller vara?
1.48.	Respondent	Hmm, specificera lite mera vad ni menar med den här frågan?
1.49.	Interviewer	Jag tänker som så att man kan ju se en digital plattform till exempel helt som en enkel app store, bara för att föra vidare sin applikation, och då kan man ju göra det flera olika operativsystem. Men alternativt kan ju banker till exemplen bygga upp en webb baserad lösning som inte behöver en specifik plattform från en annan, ett annat bolag att dela med det här. Så det du att det här kommer att vara som det är nu eller kanske ändras totalt på grund av BaaS?
1.50.	Respondent	Jag tror ju det här är någonting som kommer liksom utvecklas fram, det är det här jag tycker är lite spännande för att som jag sa tidigare jag tycker fortfarande, att man även om, jag vet inte kom PSD2 runt 2017, tror jag det dom och sen gjorde man om det 2019, det kan ni säkert bättre än mig.
1.51.	Interviewer	Ja.
1.52.	Respondent	Men jag anser att man bara har skrapat på ytan än så länge, jag är ganska övertygad om att man mer och mer kommer liksom att se nya affärsmöjligheter i det här. Det kanske är ett litet ludigt svar på din fråga, men jag skulle säga att jag tror att alla, all form utav digital lösning där man kan utnyttja dom här delarna, liksom ligger ju i framtiden. Det handlar ju bara om vem det är som tar upp pucken. Jag vet om det var svar på din fråga, men det är lite, hehehe.
1.53.	Interviewer	Hehe ja, men framtiden är väl alltid lite flummiga att spekulera, det här gick ju delvis in på 18 också med vilka innovationer man kan säga att BaaS möjliggör. Men om vi inte funderar lite på då till exempel, stora ekosystem som. Till exempel då applikations, kallar vi dem butiker. Då är det ofta så att det gynnar flera parter att ju mera användare man har, desto mera



		konsumenter kanske vill komma in här för att det finns ett större utbud. Ser du det här kopplat till BaaS på något vis?
1.54.	Respondent	Inte kanske BaaS enkommet, utan då tror jag snarare att man är inne just på de här PSD2 och Open Banking delarna. Jag tror ju att det kommer bli mer och mer liksom det här med digitala plånböcker till exempel den tror jag liksom kommer komma när vi ser på vår egen produkt till exempel. Så egentligen så är det ingenting som säger att det är ett kort vi ska ha, den kort funktionaliteten är ju bara ett verktyg för att kunna devalvera på sin kredit vilket gör att dom APIerna skulle i teorin kunna tryckas in i vår app istället till exempel.
1.55.	Interviewer	Ja.
1.56.	Respondent	Och det jag säger med det är att, jag tror att det blir väldigt, det kommer bli vanligare och vanligare i framtiden att när utvecklingar kommer längre med det här så tror jag att dom olika plattformarna kommer köra med PSD2, Open Banking fullt ut. Och framförallt att slutkunden får välja liksom att. Aa, vad bra här kan jag liksom betala med det här och här kan betala med det här så att jag tror att hela fundamentet i PSD2 är att kunden ska få välja.
1.57.	Interviewer	Ja. Det är väl baktanken. Då kanske vi tar in oss redan på nitton med att ser du då att det här leder till att yngre nya företag vinner eller förlorar? Är det något som hindrar traditionella finansföretag eller kanske mera till och med hjälper dem att utvecklas i en ny riktning?
1.58.	Respondent	Ja, bara läser igenom där också. Ja, men det tror jag absolut, däremot så det jag kan se nu i ett ganska tydligt mönster hos kanske framförallt finansbolag, men även banker i att man skapar agila team, och man skapar då alltså en avdelning som blir, som liksom ska stå för innovation. Det tror jag är nödvändigt för alla finansbolag att hitta en sån grupp av människor som bara jobbar med liksom dom här delarna. Fördelen med det här är ju att man kan i och med att man har ett fungerande kassaflöde så blir det ju på nåt sätt en trygg anställning och jag ser ganska många tydliga exempel på när banker får betala ett ganska högt pris, men man köper in den här specialistkompetensen. Det jag också tror kommer bli väldigt vanligt i framtiden och det ser vi ren idag. Jag tror att det kommer komma upp jätte många fler nya unga förmågor som er två till exempel som kommer på med en ide. Man hittar sin lilla nish på marknaden och så gör man den fullt ut. Man jobbar dag o natt, man hittar en skit bra lösning och sen när man byggt den där. Då så kommer ett finansbolag eller en bank att köpa upp lösningen, för att lösningen är i och med att banker och finansbolag sitter i en viss struktur. Som kanske inte är liksom startup känsla, då är

		det ibland billigare att köpa lösning för x antal biljoner och på applicerade och byta ut det man redan har. Och då behöver man inte bygga själv.
1.59.	Interviewer	Ja.
1.60.	Respondent	Förstår du vad jag menar?
1.61.	Interviewer	Jo, ser du det här mera som att köpa in alltså en, en färdig lösning eller kunskapen i form av personal?
1.62.	Respondent	Både och, både och absolut. Jag vet ju att jag kom in på grund utav min bakgrund dels, inom liksom finansbranschen och inom då säljfinansiering i 16 år, men också på grund utav att jag har jobbat i ett fintech bolag och har väl något större bredare förståelse än andra för vilka möjligheter som finns, och vilka möjligheter som inte finns. Jag rekommenderar alla egentligen som är intresserade, att faktiskt jobba på ett startup som jag har gjort i nästan 3 år. Man lär sig och otroligt mycket, och dom här gamla sanningarna, att det går inte. Jo, det går. Det handlar bara om prioritering och det handlar om lite kreativt tänkande haha!
1.63.	Interviewer	Haha, jo. Okej men det är
1.64.	Respondent	Men två lägen. Jo, jag tror absolut att återigen bankernas monopol kommer att liksom suddas ut. Det gör dom ju redan idag, men jag tror att nya lösningar kommer komma och bli billigare för bankerna att köpa in en teknisk lösning än att bygga dem själv eller köpa in relevanta resurser, så personalfrågan blir ju jätte viktigt.
1.65.	Interviewer	Ja. Okej ska vi ta oss vidare till kanske lagperspektivet då? Och vi kom ju ren delvis in på flera av de här frågorna. Både gällande PSD2 och hur det kanske inverkar på marknaden. Men ja exakt, säger du kortfattat specifika poänger som kanske inverkar positivt eller negativt?
1.66.	Respondent	Det här är en jätteintressant frågeställning. Jag är ju själv jobbat som GDPR ansvarig på mina två senaste bolag som jag har jobbat på.
1.67.	Interviewer	Jo.
1.68.	Respondent	Många ser ju GDPR som någonting jobbigt som ett liksom jobbigt regelverk att förhålla sig till. Men jag har alltid sett GDPR som ett sätt att skydda kundens liksom personuppgifter. GDPR är ju någonting positivt, som säkerställer att kundernas liksom så här få värna om sin integritet. Uppdelerser med det kopplat åter till PSD2 och BaaS till exempel är ju att med hjälp av

		<p>GDPR, bland annat, för sen har vi banksekretess och lite andra saker som vi behöver ta hänsyn till, men det gör ju också att det formar ju på något sätt spelregler för vad man får och inte får göra. Sen vet jag inte om ni har sett det, men. En sak som så som jag ser liksom dom senaste åren. Det är ju de här CRM systemen som bygger på AI funktionalitet där man kan, jag gjorde det själv när jag jobbade på min förra arbetsplats. Så byggde jag en kundresa där varje ny kund hamnade i en kund loop. Där beroende på, hur han agerade med vår produkt, så skickade vi ut relevant information till den här personen med exakt rätt timing. Det har liksom triggers i vår backend som gjorde och skapande kommunikation i vår frontend. Det här läser jag nu och det var ju för någon vecka sedan att GDPR kommer ju att skärpa till regelverket om just AI anpassade kommunikation byggt på slutkunder. Så att liksom jag tror att på samma sätt som dom här nya innovativa lösningarna kommer så kommer å andra sidan att regelverken för GDPR och andra delar att bli ännu striktare. Här handlar det ju mer om att hitta en balans med dom här två, för den ena kan inte bara sticka iväg, det andra benet måste också följa med så att jag tror att vi kommer få se ännu flera regelverk som kommer styra det här som på något sätt har format spelmarknaden, eller spelplanen för just de här tjänsterna i framtiden.</p>
1.69.	Interviewer	<p>Ja. Och då tror jag vi kommer till fråga 21 egentligen. Är finansbolagen klara för det här? Inte kanske specifikt PSD2, du nämnde ju flera andra, men som du sa om startups, man kan bara man vill. Men vi kom ju in på också 22, 23 här, men att hur ser du det här?</p>
1.70.	Respondent	<p>Jag skulle säga så här att är dom redo. Ja, jag tror det handlar om att om man ska hänga med på tåget så måste man dedikera resurser som faktiskt har ett tydligt ägarskap i organisationen för just dom här delarna. Det tror jag är jätte viktigt. Jag tror inte att man som bank har råd att nonchalera PSD2, Open banking och dom här nya tekniska lösningarna. Om man inte såttill vidare köper in kompetensen eller köper in en funktion från tidigare. Men jag menar som, det finns väl ett lagkrav på till exempel att alla banker och finansbolag måste ha öppna APIer som gör att tredjepartsleverantörer får ta del av informationen.</p>
1.71.	Interviewer	<p>Ja.</p>
1.72.	Respondent	<p>Så det lagkravet finns ju redan så att om man som bank inte har den funktionen, ja då kan man ju ställa sig inför lagen istället liksom. Men är dom mogna? Jag tror att många banker och finansbolag de har nog liksom gjort det lägsta de måste för att liksom hålla sig till det nya direktivet. Men jag skulle säga att det är lång väg kvar innan dom liksom går och väljer gå fullt ut. Men det finns ju andra som gör istället. Och då är vi ju tillbaka</p>

		till det här att kan det vara så att det är billigare att köpa in kompetensen, billigare att köpa ett bolag som har utvecklat, än att bygga själv.
1.73.	Interviewer	Så tolkar jag dig rätt beror det ju mycket på bolagen, men att vissa bolag så, i fråga 22 är det mera så att lagstiftningen mera tvingar dem att följa det de måste medan andra kanske till och med kan dra nytta av det här?
1.74.	Respondent	Ja. Men absolut, så är det ju. Tar en liten kaffepaus. Du får ursäkta.
1.75.	Interviewer	Ja.
1.76.	Respondent	Jag skulle se, vi var på fråga 22.
1.77.	Interviewer	Ja, det kanske du svara på egentligen just.
1.78.	Respondent	Ja, precis. Alltså så här. Jag tror att alla banker och finansbolag tycker det här är lite jobbigt jag tror det här handlar om vilken inställning man har, jag tror mycket går tillbaka liksom så här att många av dem som jobbar på bank och finans har ju jobbat på bank och finans i tjugo, trettio år. Det är ju förändringsresa och företagskultur som måste ändras. De här agila arbetsrätten till exempel, det gör ju lite ont i en organisation att liksom integrera. För det är ju, människor är ju av naturen, en liksom nånting att man, alla är ju inte öppna för förändring. Men jag tror att såsom marknaden kommer att utveckla sig så tror jag att ställer väldigt höga krav på att man måste bara säga ja på förändring. Annars kan man nog göra någonting annat.
1.79.	Interviewer	Så då kanske det svara på nummer 23 som att det är möjligt bara man vill och kanske måste i vissa fall.
1.80.	Respondent	Ja men absolut och framför allt. Jag menar om det här är ett nytt lagkrav eller om det är till exempel juridiska delar. Så måste ju bankerna hänga med. Sen är ju många av de här olika regelverken som har kommit på senaste tid, till exempel GDPR, det är ju i mångt och mycket en, det tycker jag själv i alla fall. Och då har jag ju jobbat som ansvarig för GDPR, det är ju mycket handlar ju om sunt förnuft, men det handlar ju också om tolkningar. Och det är väl just de här tolkningarna som jag har hört flera som har haft min roll sedan tidigare som GDPR ansvarig, att regelverket är inte jättetydligt, men det går ju snarare till liksom artiklar och domar så att det här är ju någonting som man får lära sig på vägen liksom. Och där är det ju viktigt ur ett finansbolagsperspektiv eller bankperspektiv att man har personer som dedikerat arbetar med de här delarna. För du har inte råd att inte göra det.

1.81.	Interviewer	Jo, så. Då är det egentligen. Ja, vi kommer över till 24 att man behöver en ansvarig som har kontroll över det här i bolaget?
1.82.	Respondent	Ja, absolut, och jag skulle säga så här också att det är flera olika personer beroende på var du jobbar. Till exempel har du en CRM avdelning så behöver en CMR avdelning eller marknadsavdelningen på sitt tydliga ansvar i BaaS. Har du en analysavdelning så behöver du ha en person där som är dedikerad BaaS. Jag tror att den här specialist, så här, det går inte riktigt att vara generalist. Jag ser ju mig själv som en generalist. Men det är för att jag har en övergripande kunskap och ansvar men sen jag kommer aldrig bli, liksom specialist inom de olika områdena. Det här gör ju att man måste ju skapa en egen kallar det BaaS organisation med specifika dedikerade kunskaper på utvecklings sidan på CMR och analysavdelningen på kanske till och med ekonomi sidan så att det blir ju en organisation i organisationen som måste ta ett tydligt ägarskap.
1.83.	Interviewer	Ja och
1.84.	Respondent	Juridiken framför allt.
1.85.	Interviewer	Om man ser det från ett kanske högre perspektiv, ser du någon viss, inte kanske en person? Men är det bara det här ramverket för lagstiftningen som ser att alla följer det? Eller finns det någon institution som kanske följer med att det här följs eller inte?
1.86.	Respondent	Menar du institution på företaget i sig eller tänker du institution, alltså nån form utav regelverksstruktur?
1.87.	Interviewer	Ja, alltså bara om man kan nämna någon som följer upp det här, förutom då själva lagstiftningen som ett ramverk. Att inte finns det någon polis för att följer någon upp PSD eller BaaS? Men ändå finns det ju domar om man inte följer det här på europainivå också?
1.88.	Respondent	Ja, men precis, exakt. Och det är väl precis det här pusslet som jag är inne på. Du har ju flera olika, det är ju inte bara GDPR utan du måste liksom säkerställa att du följer banksekretessen. Hur slår banksekretessen mot liksom GDPR? Vad är det man får göra, vad får man inte göra? Som finansbolag står det ju under finansinspektionen med deras tydliga ... och så vidare. Så det är ett pussel av olika typer av regelverk som, vad ska man säga, som någonstans på liksom sätta spelreglerna för hur ett finansbolag och sälj företagen får agera tillsammans. Så det är det här jag menar att ur ett finansbolagens perspektiv, så ligger ju det yttersta ansvaret på Vd och styrelse.
1.89.	Interviewer	Ja.

1.90.	Respondent	Men det bygger ju på att VDn kommer ju aldrig ha full kontroll på det här själv utan då bygger det ju på att man skapar en organisation med olika specialistkompetens för dom här olika delarna. Och det är inte bara en person, utan det kommer ju vara liksom flera som banken till exempel. Där har man ju en som är dataprotection officer men sen har ju den personer kolleger ute på olika delar i organisationen som får ta sitt ansvar och det är det här jag menar att liksom det här nya tekniska tänket med BaaS med PSD2 och så vidare. För att man liksom ska hålla sig inom lagens alla regler och olika lagstiftningar så krävs det att man samarbetar där olika personer med olika specialistkompetens formar liksom så här. Vad är det vi får göra vad är det vi inte får göra så mycket som sagt handlar ju just om det här att hålla sig till de här delarna. Det skulle jag säga är a och o för att man liksom skall kunna köra den här lösningen. Man kan alltid hitta på lösningar på liksom såhär jo, det borde fungerar så här och det här gör vi. Men vi måste alltid kontrollera liksom vad innebär den här lösningen, vilka konsekvenser får den, vilka biverkningar får den, är det möjligt. Gör vi rätt liksom, strider den emot GDPR. Nej, det gör den inte. Strider den mot banksekretessen, ja i det här fallet om det är en sån sak, ja, det är okej. Hur kan vi gå vidare med den så att man liksom hittar aktiviteter framåt liksom för att runda problematiken eller ja.
1.91.	Interviewer	Ja. Tolkar jag dig är rätt och om vi går till 25, vem som har ansvaret? Är det då traditionella finans bolagen eller dom här tredje parts, som använder sig av det här öppna APIerna så som jag tolkade dig tidigare, så alla har ju sitt ansvar.
1.92.	Respondent	Du är inne på en intressant sak där. För att det som händer är ju att, det är klart att det ställer krav på båda sidor, men om man ser på till exempel Klarna om jag loggar in på Klarna och så kan jag ge mitt samtycke att de får tillgång till mitt engagemang i banken.
1.93.	Interviewer	Jo.
1.94.	Respondent	Då är det ju banken. Då har jag ju gett mitt samtycke till Klarna att hämta min information.
1.95.	Interviewer	Jo.
1.96.	Respondent	Sen är det ju viktigt och där är det ju egentligen så att finansbolag eller banken i det här fallet, de delar ju bara med sig utan APIerna så att egentligen är det ju Klarna som i det här fallet måste se till att de inte använder mina uppgifter på ett felaktigt sätt.



1.97.	Interviewer	Jo. Men det var klart och tydligt. Vi kanske börjar ha lite ont om tid.
1.98.	Respondent	Ja.
1.99.	Interviewer	Men som följd fråga ser du att det är för mycket av alla regulationer nu redan eller kommer det att bli så just med tanke på att vem som ansvarar för vad?
1.100.	Respondent	Nja, förmycket och förmycket. Nej, min utgångspunkt är att liksom teknik är jättebra. Innovation är jättebra. Men du måste även ha en lagstiftning som liksom ger en fingervisning med vad man får göra och vad man inte får göra. Så att egentligen tycker jag att det är klart att i vissa forum där man vill komma framåt och man vill leverera resultat och man vill skapa tekniska lösningar och så vidare. Det är klart att man då kan tycka att regelverk är jobbiga. Men man måste komma ihåg att regelverken är där för att skydda privatpersoner, det är ju där för att skydda kundernas integritet. Så att jag skulle snarare se det som en kontrollfunktion. Att okej, vi har en lösning och hur slår det här mot det här regelverket. Hur slår det här mot det här regelverket? Så det hjälper ju också med att säkerställa kvaliteten för det man tar fram.
1.101.	Interviewer	Ja. Och om vi då går vidare till 27, finns det då tillräckligt av de här kontroll regelverken? Och vet, vet man hur man ska följa dem för att utveckla en bra Banking-as-a-Service miljö?
1.102.	Respondent	Om det är tillräckligt. Så det är ju jättesvårt att svara på. Ja, just nu med de funktionerna som finns på marknaden skulle jag nog säga att det finns tillräckligt, men, och ett väldigt stort men. Så det är därför jag tycker att det här med den tilltänkta skärpta lagstiftningen till exempel, att nu kommer det ju förmodligen då att uppdateras med hur man får arbeta med AI och inte AI när det kommer till att få kunder att handla mera till exempel. Så att jag tror ju snarare på att dom här Lagstiftningarna som finns kommer att ändras med tiden, i takt med att utvecklingen går framåt med nya lösningar.
1.103.	Interviewer	Ja okej. Det var en bra insyn som vi inte hade tänkt på ännu. Sista delen då, är det något som vi inte har tänkt på eller fråga som du har bakom öra ännu?
1.104.	Respondent	Inte just nu. Och åter igen, BaaS är ju ett ganska brett begrepp det vi gör nu tillsammans med ett säljföretaget och kedja är ju att fördelen med det här är ju att vi gemensamt skapar en bättre kundupplevelse för slutkunden och där vi hittar sätt att gemensamt ha en lönsamhet, vilket jag tror kommer bidra till att samarbetet mellan oss, och det här säljföretaget kommer att stärkas.

		Man bygger ju in sig hos varandra. Vilket gör att det kommer vara lite jobbigt att byta, tror jag.
1.105.	Interviewer	Men ja då ser du ändå BaaS som ett viktigt om vi kallar det verktyg eller?
1.106.	Respondent	Absolut och jag tror att de här skräddarsydda lösningarna kommer bli alldeles mer vanligt. Och det var lite det som jag inledde det här samtalet med också. Att förr i tiden, så när man köpte en Ford, så fick man välja vilken färg man ville och den var svart.
1.107.	Interviewer	Ja.
1.108.	Respondent	Där är vi inte idag för att slutkunderna ställer ju väldigt höga krav på att liksom förrut kanske det var okej att det tog lite tid och så, men i nästa steg så liksom så här. Är det mer än två eller tre knapptryckningar bort, ja då tycker man att det är jobbigt, för att man har inte tålamod längre.
1.109.	Interviewer	Ja.
1.110.	Respondent	Och det är just de här delarna som jag tror att BaaS eller PSD2 bidrar med till en mera sömlös kundupplevelse helt enkelt.
1.111.	Interviewer	Jo.
1.112.	Respondent	Det är liksom hela taken från det.
1.113.	Interviewer	Så i princip kan man säga bara som en produkt och en viktig sådan också?
1.114.	Respondent	Ja absolut, absolut, med allt vad det innebär.
1.115.	Interviewer	Men perfekt. Om inte annat, så slutar vi blanda in nu och avslutar.

## Appendix 6 – Interview Transcription (Respondent 2)

Senior Legal Counsel, organization 2.

Green. General Banking-as-a-Service

Yellow. Technological context

Blue. Business context

Red. Legislation context

Speaker	Transcribed text and color-codes
2.1. Interviewer	Noin. Jos aloitetaan ihan noista intro kysymyksistä niin. Haluatko sinä kertoa vähän sinun taustoista ja miten se voisi olla relevanttia BaaS:n näkökannalta?
2.2. Respondent	Tuota mähän oon juristina toiminut finanssialalla ollut yli 20 vuotta. 20 vuotta juristina pankissa.
2.3. Interviewer	Joo.
2.4. Respondent	Tosiaan semmoinen mun näkökulma siihen on se juridinen mitä juridisia sääntöjä tulee ottaa huomioon tällaisen konseptin soveltamisessa, tämä tekninen osaamisen on varsin kevyttä, jos ei olematonta.
2.5. Interviewer	Joo. Ja tuota. Onko sinulla tiettyjä ehkä vastualueita tällä hetkellä, jotka jotenkin liittyisi tähän? Jos haluat niistä kertoa jos on.
2.6. Respondent	Työnantaja muun muassa tarjoaa, tämän tyyppistä palvelua käynnistelee niin tuota oikeastaan juristina, niin kaikki tällaiset juridiset kysymykset tulevat minun pöydälleni. Niiden miettiminen, mitä juridiikkaa tähän sitten mahdollisesti kuuluu ja täytyy ottaa huomioon.
2.7. Interviewer	Mm kiitos. Jos sitten hypätään ihan suoraan asiaan, niin kuin tuttu koko tämä BaaS:n konsepti on sinulle ylipäättänsä.
2.8. Respondent	Jonkin verran. Elikkä kai noin isosti tällainen ei pankki tarjoa omalle asiakkaalle pankkipalvelua omissa nimissään suurin piirtein. En tiedä kuinka paljon varmaan, <b>mun käsitys on, että se nyt ei oo siis ei nyt ole olemassa mitään BaaS lakia eikä mitään niinku tällaista eksaktia määritelmää, että mitä se nyt sitten tarkalleen ottaen, tarkalleen ottaen kullakin</b>

		palveluntarjoajalla tarkoittaa. Kohtalaisen uusi asia ja ainakin tässä omassa maailmassani ja tällainen vähän kehittyvä asia, ei kai sitä kiveen hakattu ole meilläkään vielä, että mitä se sitten missäkin tilanteessa tarkoittaa.
2.9.	Interviewer	Joo. Muistatko sinä ollenkaan, että milloin olisit tullut esille ensimmäisen kerran? Tai jonkun tietyn kautta kenties? Vai onko se vaan yhtäkkiä kasvanut sieltä, jostain tullut esiin?
2.10.	Respondent	Tuota tässä näin niinku omasta kontekstista, niin tuota viime vuonna se on niinku nostettu kysymyksenä esiin, että tällaisista ruvetaan tekemään ainakin näin niin kuin laajemmassa mittapuussa. Nythän se löytyy jo nettisivuilta, vauhdikas video että mitä se, mitä tarjotaan ja ihan tätä konkreettista tekemistäkin on ruvettu ehkä viime vuoden puolelta tekemään.
2.11.	Interviewer	Hmm. Ja oletko tähän kerännyt tietoa työn kautta vai ihan ylipäätänsä vapaa ajalla vai jonkun relevantin tehtävän kautta kenties?
2.12.	Respondent	Työn kautta siis ihan se että on konkreettinen tapaus käsillä. Mitä tota edistetään ja tehdään ja mietitään mitä kysymyksiä tähän nyt sitten liittyy. Muuten Googlailemalla vähän tuolla että mitä ikinä se nyt sitten muualla saattaisi tarkoittaa.
2.13.	Interviewer	Joo. Ja jos mennään kysymykseen 7 niin ihan yleisellä tasolla näetkö sä mitään, mitään hyviä puolia mitä tämä BaaS voisi tuoda mukanaan?
2.14.	Respondent	Hmm siis jotenkin tää synergian pitäisi olla se mikä siitä minun mielestä pitäisi tulla jos niinku pankki tai vastaava osaa sen pankin tuotteensa ja tämä toinen sopijapuoli osaa sitten sen oman tuotteensa, kauppa, mikä ikä lie onkaan. Plus sitten että se asiakas joka kenties on yhteinen asiakas niin saa sen saa tarvitsemansa tuotteen tai palvelun niinku helposti yhdestä paikasta ilman että tarvitsee seikkailla monissa järjestelmissä.
2.15.	Interviewer	Joo.
2.16.	Respondent	Eli se synergia siitä mikä sen pitäisi ymmärtääkseni olla, jotta kenelläkään on järkeä tätä tehdä, sekä että asiakas saa mitä haluaa ja on tyytyväinen ja molemmat palveluntarjoajat tästä synergian kautta hyötyvät. Näin mä sen itse hahmottaisin.
2.17.	Interviewer	Joo, ja sitten vastaavasti niin näetkö sä mitään huonoja puolia?
2.18.	Respondent	No tuota en sinänsä itse konseptissa, että jos se tosiaan on toi niinku molemminpuolisen tai itse kaiken puolin, kaiken puolisen kolmiodraaman ja asiakkaan ja näiden palveluntarjoajien synergian ja hyödyn kasvattaminen. Konseptihan on sinänsä

		<p>järkevä se mitä tuota, tämän tyyppisiä rakennelmia jo ennen PSD2. Ensimmäisiä niinku sillon kun sääntelyä ei ollut vielä sitäkään vähää mitä tänä päivänä niin pankithan on pelännyt tän oman bisneksensä menettämistä. Sitten näille pankki tekee työt ja maksaa kulut ja vastaa vahingoista ja joku muu kerää hyödyt mutta tota kyl mä enemmän näen että siinä on toi synergian hyöty mitä siitä pitäisi saada. Toki niitä huolia nyt on semmoisia, että minkä tyyppisiä palveluntarjoajia tähän nyt sitten tulee mukaan, että pankithan on niinku tiukasti reguloituja ja tiukasti valvottuja. Ja sitten tää on vähän kirjavampi sakki, joka näitä palveluita rupeaa sitten pankin kautta hyödyntämään. Se on sitten vähän se mitä kaikkea porukkaa sinne tulee mukaan että tosiaan muistan sen niinku jo kauan aikaa sitten ennen kun oli PSD2 olemassakaan nämä ensimmäiset yrittäjät jotkahan meni jo konkurssiin ainakin se ensimmäinen mitä kauhisteltiin silloin että.</p>
2.19.	Interviewer	Joo.
2.20.	Respondent	En tiedä eikö aika ollut kypsä vaiko tuota ollut muuten niinku se yritys kypsä siihen että. Vai eikö sitten lähtenyt vielä lentoon siinä vaiheessa en tiedä, mutta sille kävi niin.
2.21.	Interviewer	Joo. Tuota jos mennään kysymykseen 9 niin sä vähän jo mainitsitkin PSD2 näetkö sä että se on, on kulmakivi BaaSille tai onko niitä muitakin kulmakiviä?
2.22.	Respondent	Tuota tuota vähän tietysti riippuen, mikä se mikä se palvelun sisältö on, että mitä kaikkea, mitä kaikkea siinä niinku tarjotaan. PSD2 on yksi. Sitten on toi yksityisyydensuoja, GDPR. Mitä sieltä tulee tota yksityisyyden kysymykset, pankkialaisuuteen liittyvät kysymykset on nyt ollut semmoinen iso asia, mikä meillä on ollut tapetilla. Rahanpesuun liittyvät kysymykset. Miten tämä asiakkaan tunteminen tätä kautta ehkä sitten noi saavutettavuuteen liittyvät kysymykset. Eli tuota nyt, jos finanssialalla Suomessa on jo voimassa. Että pitää olla saavutettavia. Eli näiden saavutettavuus vaatimuksen mukaisia kaikki digitaaliset palvelut, niin tuota siellä pitäisi kai toteuttaa täälläkin. Ja sitten toi vahva sähköinen tunnistaminen mikä sinänsä suomessa toimittaessa niin rupeaa olemaan semmoinen itsestäänselvyys, mutta sitten kun mennään näitä rajat ylittäviä palveluita niin se ei itse asiassa olekaan enää. Tai voi olla että se on selvä asia että se pitää olla, mutta tuota ne toteutustavat on erilaisia ja maakohtaisia, tuo vähän lisää kerrointa mukaan. Mutta että ainakin nyt noi pankkialaisuus, yksityisyydensuojasta ja PSD2. Rahanpesu, saavutettavuus ja sähköinen tunnistaminen, josta kaikista löytyy tiukkaa sääntelyä.
2.23.	Interviewer	Joo.

2.24.	Respondent	Ne on ainakin niitä mitä tässä mietiskellään.
2.25.	Interviewer	Joo, tuleeko sitten näiden pohjalta heti mieleen, jotain ongelmia tai tavoitteita BaaS:n kannalta?
2.26.	Respondent	Mietin tätä lähtökohta asetelmaa. Siis niinku mä sanoin, että pankki on niinku vahvasti reguloitu ja vahvasti valvottu ja pankkitoiminnassa on niinku dnassa on kyllä tietyt asiat niinku esimerkiksi pankkisalaisuus. Sitten kun tulee niinku tähän tämä joka haluaa ehkä kenties ikään kuin omissa nimissään tarjota tätä palvelua, mutta jolla ei ole näitä, näitä tuota samoja sääntöjä riesanaan ja muutenkin, tätä tarjolla vähän sillä tavalla, että ei tarvitse olla sitä toimilupaa eikä niitä pääomia eikä kaikkea tätä raskasta sääntöviidakko niskassa niin tuota, niin niin. Ymmärtääkö se asiakas nyt sitten varmasti, että mitä kenen kanssa se on tekemässä ja mitä tietoja se on luovuttamassa ja miten nämä muut toimijat kunnioittavat esimerkiksi tätä. Esimerkiksi tätä, jos tarkoitus on, että pääsevät pankkisalaisuuden alaisiin tietoihin tai puolelle.
2.27.	Interviewer	Joo. Ja ja sitten jos mennään kysymykseen 11 niin. Miten sä näet BaaS:n tilanteen ja roolin tällä hetkellä joko ihan yleisesti tai, tai sitten omasta näkökulmasta.
2.28.	Respondent	No se on aika uusi, ainakin täällä. Eliikkä ehkä myös kehittyvä asia, se sisältö ei ole mitenkään niinku kiveen lyöty standardoitu eikä välttämättä ole koskaan. Siis se on tuota, ainakin meidän suunnasta se on isojen ja vahvojen brändien kanssa tehtävä yhteistyömahdollisuus. Ei ehkä mille tahansa. Täytyy olla riittävästi kokoa ja riittävästi niinku vahvaa brändiä, jotta sitä yhteistyötä kannattaa lähteä tekemään.
2.29.	Interviewer	Joo. Kiitos ja jos mennään eteenpäin sitten ihan teknologia näkökulmaan niin onko se sinulle kuinka tuttu ylipäättänsä?
2.30.	Respondent	Tota, ei mulla niinku näin suoraan sanottuna ole siihen mitään järkevää sanottavaa varmaankaan.
2.31.	Interviewer	Okei, ja jos lyhyesti sitten vaan todetaan että. API:t on jos sanotaan sen teknologia mitä käytetään siinä takana. Ja se on ehkä nyt se yleinen mihin on mihin ollaan päädytty, mutta sitä ei kuitenkaan ole ole mitenkään määritetty, että sen pitäisi olla juuri se, niin oletko sinä tästä kuullut? Kenties jotain, vai? Vai onko tullut vastaan mitään tähän niinku että onko pakko olla API:tä laki näkökulman kautta ehkä?
2.32.	Respondent	Ei, ei siitä tulokulmasta ei ole. Siitä ei ole mitään sääntöjä mitä se pitäisi olla että ehkä lähinnä noin niinku käytännön näkökulmasta siis tuota. Jonkin näköistä yhtenäistä mallia vähän noin niinkuin puolin ja toisin jos ei nyt standardoitua niin

		vähän niinku sinnepäin että ajatus siitä että kaikille, kaikille tuota ruvettaisiin kovin niinku räätälöityä valmistamaan niin se äkkiä katoaa se ainakin se pienenee se piiri minne kaikkialle sitä kannattaa tarjota.
2.33.	Interviewer	Joo, jos mennään vaikka suoraan kysymykseen 15 siinä on aika samaa kysymys pohjaa kun tossa 13 ja 14 mutta ilman noita API määrittelyjä niin. Mitäs tämä koko bisnes ideaa BaaSin takana uudet pikkufirmat markkinoilla ja nää third party providers niin. Vaikuttaako PSD2 jotenkin niiden tähän nyt niitä tulee nopeasti tai ehkä ei tule?
2.34.	Respondent	No tuota, PSD2 pakottaa tuota avaamaan näitä maksu tilejä kolmansille osapuolille. Että niitähän niinku tulee, en tiedä kuinka tästä BaaSista ymmärtäisin, että siinä halutaan tarjota niinku. Ainakin joillekin riippuen tilanteesta niinku enemmän kuin mihin se PSD2 jo pakottaa. Että se on sitten vähän niinku taas jo enemmän sääntelyn ulkopuolella. Mutta siis se PSD2 pakottaa sen minimitason mikä pitää olla auki näille kolmansille osapuolille.
2.35.	Interviewer	Joo.
2.36.	Respondent	Sitä en tiedä kuinka innokkaasti ne on vielä lähtenyt tuota, lähtenyt tuota tekemään sitä.
2.37.	Interviewer	Entäs sitten seuraava, miten sä näet tavallisten pankkien, fintechien tai vastaavien roolit tulevaisuudessa?
2.38.	Respondent	Tota tossa taisin sanoa aikaisemmin että pankki on niinku ollut perinteisesti, kaikkeen uuteen suhtaudutaan vähän varauksella. Varauksella ja pelätty sitä oman bisneksen menemistä niinku jollakin kolmannelle joka sitten ilman että tarvitsee itseäni itse rakentaa ja tehdä ja käyttää rahaa ja tuota pyöriä tässä säädös-viidakossa. Voi jotain tuota tienata ikään kuin pankin kustannuksella, mutta luulen että se ajattelu on muuttumassa enemmän siihen yhteistyö ajattelu että kaikkien pitää hyötyä tästä ja muuten tää ei lähde lentoon. Ja pankkihan nyt on niinku se on hidas ja se on kömpelö kehittämään yhtään mitään uusia ideoita, pienenkin asian tekeminen niinku kestää tuhattoman kauan aikaa, että tuommoinen joku pienempi ja ketterämpi toimija, niin ehkä. Ehkä saisi siihen pankin avustuksella nopeammin aikaiseksi tällaisia asiakkaita kiinnostavia lisäpalveluja ja voi olla enemmän semmoisia vähän niinku kokeilun omaisia jotka on niinku hetken kiinnostaa kunnes tulee joku vielä kiinnostavampi että pankkihan ei tällaisia pysty ikinä että niinku tällä rakenteella mitä pankeilla on että jos jotain rakennetaan niin se on tarkoitettu että se kestää maailman tappiin asti niin



		siinä tulee niinku tämä yhdistelmä siitä että on tosi iso vahva pohja siellä sitten pienempiä ympärillä.
2.39.	Interviewer	Joo. Tuota sitten kysymys 17 on taas varmaan ehkä vähän teknologia näkökannalta. Mutta. Jos katsotaan sitä laki perspektiivistä, niin tässä oli ideana se, että. Kaikkia ohjelmia voi jakaa tällaisten digitaalisten alustojen kautta. Ja. Sitä enemmän mitä tällaisella alustalla on käyttäjiä niin sinne myös haluaa sit enemmän toimijoita ja sen kautta myös mainostajia ja kaikki jotka siellä toimii. Mutta näetkö sinä että tässä voisi olla laki näkökulmasta jotain ongelmia vai lähtisikö pankit ehkä ja rakentamaan jotain ihan omaa vaikka netti pohjasta tällaista ratkaisu, ettei tarvitsisi mennä mihinkään tällaiseen suurempaan kauppaan tai alustalle mukaan. Vai voisiko BaaSista tulla jopa ihan joku oma tällainen nyt jos mietitään tätä laki näkökantaa enemmän, vai eikö tällaista vielä ehkä edessä on mietitty?
2.40.	Respondent	Ei välttämättä ole mietitty koska laki ei ohjaa.
2.41.	Interviewer	Joo.
2.42.	Respondent	Ohjaa siis käyttämään mitään tiettyä teknistä ratkaisua. Siis se niinku oli se ratkaisu, sit mikä tahansa niin siis siitähän on omat et se on sitten tämmöinen, turvallinen ja tietoturvallinen ja muuta, mutta ei sinänsä niinku että mihin suuntaan se tulee olemaan.
2.43.	Interviewer	Okei, tota entäs sitten, näetkö itse jotain, mites mä tän kääntäisin. Innovatiivisia uusia ratkaisuja mitä BaaS voisi tuoda mukaan?
2.44.	Respondent	En tiedä osaanko nyt jotain yksittäistä, mitä se nyt kullakin toimijalla on se mitä haluaa tarjota, mutta tuota ehkä tämä kuluttajan ostokokemuksen helpottaminen se yhden luukun periaatteella, vähemmän klikkauksia tosin helppohan se on kyllä tänä päivänäkin jos on esimerkiksi olemassa olevan luottokortti, niin tuota vähän nyt paikasta riippuen kuinka helppoa tai monimutkaista se on mutta mutta. Onko sitten tarkoitus vielä enemmän ja kootusti ja, en tiedä.
2.45.	Interviewer	Joo, mm toi on ihan hyvä vastaus tuota. Mites sitten, näetkö, että tämä johtaisi siihen. Tai nyt jo olisi niin että. Uudet ja vanhat pankit, niin häviääkö joku tässä tai voittaa joku enemmän ja vähemmän sinä olit jo vähän sisällä tässä että mikä on näiden tausta mutta. Lyhykäisyydessään niin, onko joku tässä voittaja tai häviäjä?
2.46.	Respondent	Ehkä jos löytyy niitä hyviä kombinaatioita et se niinku se vanha ja jäykkä ja hidasliikkeinen pankki, löytää sen sopivan

		kumppanin, tai pankki tai muu niin kuin finanssialan toimija löytää sen sopivan kumppanin ja lähtee itsekin siihen sillä mielellä mukaan, että siis molemmat osapuolet, että yhteistyötä, yhteistyötä tehdään. Niin silloin, mutta sillä ajatuksella mitä silloin se vanhastaan tuntumaan, että joku tuota haluaa ottaa sen valmiin mitä pankki on rakentanut ja mistään säännöistä ja muista piittaamatta niin rupeaa sitä omaansa myymään siinä sen kummemmin mitään kyselemättä, nii se ei. Se ei niinku voi johtaa hyvään tulokseen.
2.47.	Interviewer	Sitten jos mennään ihan nyt tähän sun bravuuri alueelle niin sä varmaan niin se ehkä osaat muotoilla nämä kysymykset paremmin kuin minä, mutta ainakin tämä 20 niin menee varmaan yhteen tuon a osan kanssa myös. Kuin tuttua kaikki tämä on sinulle, ja miten sä näet, että se vaikuttaa koko tähän nyt BaaS-sin tilanteeseen?
2.48.	Respondent	Kyllä, joo pitäisi olla tuttu tämän lainsäädännön kanssa ja tosiaan tämä raskas sääntely tappaa pienet toimijat ja innovaatiot että haluaisin itse olla pankki tai joku vähän kevyemmin sääntely, että finanssialan toimija niin se vaatii valtavat pääomat ja kaiken maailman hallinnollisen taakan ja ties sun minkä noudattamisen niin tuota se ei. Silloin vaan pienemmät tekijät ja tämmöiset ehkä propellipäät, jolla on niitä innovaatioita josta en itse nyt osannut sanomaan yhtään niin tuota, ne ei pääse markkinoille, ne pääsen sinne tätä kautta. Jolloin tämän pitäisi olla niinku hyvä asia kaikille, mutta toisaalta tarvitaan kuitenkin semmonen, että joku riittävä sääntely ja valvonta näille kaikille osapuolille, jotta myöskin se pankki tietää, että millä säännöillä se kaveri pelaa ja miten sitä valvotaan että jos, jos valvotaan että PSD2 nyt toi nämä kolmannet osapuolet niinku jollakin tasolla tämän ainakin kevyemmän sääntelyn piiriin, että osittain vaaditaan, vaaditaan toimilupaa ja osittain riittää ilmoitus, että jos näitä PSD2 mallisia palveluita tarjotaan.
2.49.	Interviewer	Joo. Entäs sitten näetkö sä että, että finanssialan toimijat on kypsiä tai tarpeeksi kypsiä, elämään PSD2 kanssa?
2.50.	Respondent	No tuota, tuota. Pakkohan niiden on olla. Nyt se on siellä laissa ja määräajakin on jo mennyt jo missä vaiheessa ne piti olla ne maksutilit auki siellä sekä katselua varten että myöskin näitä maksu toimeksiantojen tekemistä, tekemistä varten, että pankki tässä kaikessa raskaassa raskaudessa jähmeydestään huolimatta on kuitenkin niinku se sen kokoinen ja sen tapainen organisaatio että ne on tottunut säätelyn parissa elämään että okei kysytään ja kyseenalaistetaan ja valitetaan ja näin päin pois. Mutta implementoidaan se kuitenkin joka tapauksessa,

		koska näin on, näin on tehtävä ja se on toimiluvanalaista ja valvottua toimittaa niin kyllä se menee.
2.51.	Interviewer	Joo.
2.52.	Respondent	Ja mä luulen tosiaan että siitä on siitä on kasvettu vähän niinku, pois päin siitä ajatuksesta, että tää on niinku pois pankilta ja enemmän lähdetään hakemaan sitten sitä hyötyä mitä siitä on saatavilla.
2.53.	Interviewer	Joo. Tämä varmaan.
2.54.	Respondent	Ja myöskin ne PSD2 ekat versiot oli vähän sen tyyppisiä että niinku tosiaan pankki tekee kaiken, ja valmiiksi. Ja sitten niinku vastaa vahingosta, jos joku menee pieleen. Että sehän nyt oli aika semmonen kestävä mutta vähän parempaan suuntaanhan se siitä meni.
2.55.	Interviewer	Joo tämä nyt osittain jo vastasikin 22 ja jopa 23, että ehkä alun perin jos ymmärsin oikein niin nähtiin niin että tämä pakottaisi enemmän. Ja nyt ehkä nähdään, että tämä mahdollistaakin?
2.56.	Respondent	Kyllä, näin minä sen itse näkisin, että näin se tahtoo näissä, mennään. Se mikä on pakko tehdä niin se tehdään ja sitten siitä niinku kannattaisi lähteä katsomaan myöskin että mitä tästä voitaisiin voittaa kun se nyt kuitenkin on sinne jouduttu rakentamaan.
2.57.	Interviewer	Joo ja sitten tuota jos mennään 24 niin, kenellä olis sit tämä vastuu tai kontrollin monitoroida näitä toimijoita koko tässä BaaS ekosysteemissä?
2.58.	Respondent	Ja sehän on niinku se erinomaisen mielenkiintoinen kysymys, joo-o siellä on niinku pankit. Niitä valvoo valvova viranomainen. Muut on sitten vähän sekalaisempaa porukkaa, että valvoo tai ei valvo toimiat itse.
2.59.	Interviewer	Joo.
2.60.	Respondent	Ja tosiaan, esimerkiksi tuo PSD2 puoleisen maksu toimeksianto palveluhan vaatii jonkun kevyt toimiluvan finanssivalvonnalta. Tilitietopalvelussa riittää ilmoitus sinne. Että tosiaan se että niin kauan kuin kaikki menee hyvin niin eihän siinä mitään. Mutta sitten kun joku menee pieleen niin kuka, kuka maksaa viulut? Periaate on selvä. Vahingon aiheuttaja on se joka maksaa, mutta tuota. Mutta, mutta, kun tässä porukassa pankki nyt on yleensä aina se jolla on sita rahaa tästä toisesta osapuolesta nyt sitten ei voi aina olla varma.

2.61.	Interviewer	Joo.
2.62.	Respondent	Koska se on sitten hajanaisempi joukkue niinku sanoin ensimmäiset yrittäjät meni konkurssiin jo ennenku palvelu saatiin kunnolla edes käyntiin. Ja ymmärtääkö se asiakas sitten kenen kanssa se on tekemisissä, kuka vastaa suhteessa asiakkaaseen ja kuka, ja mitkä on sitten näiden tämän BaaS tarjoajien niinku keskinäiset vastuu suhteet.
2.63.	Interviewer	Joo no, tämä varmaan riittää meille myös vastauksesta numeroon 25, mutta entäs sitten, mites, onko tämä jo vai onko tästä kenties tulossa liikaa? Näistä kaikista muuttuvista direktiiveistä ja muista säännöistä, mitä pitää noudattaa?
2.64.	Respondent	Kyllähän tätä säännöstsunamia ollaan tässä kauhisteltu jo niinku aika, aika kauan. Tulee ja tulee yhä enemmän kun tulee tätä EU pohjasta mikä on niinku taustaltaan hyvin erityyppistä kuin esimerkiksi suomalainen sääntely. Se on ensinnäkin, se on jumalattoman pitkä ja se on yksityiskohtaista, se on tarkkaa, se on rakenteeltaan monimutkaista siellä on mikä nyt on niinku direktiivi ja mikä on siihen liittyvä joku alemman tason tekninen sääntely tai muu sääntely, miten nää istuu keskenään. Ja yleensä se, se normaali asia mikä annetaan tämmöisten erinäköiset tarpeet ja innovaatiot ja ajatukset nehan syntyä aina ennen regulaatioita. Ja tämä regulaattori tulee sitten perässä jos on tarvetta että hetkinen täällä on tämmöinen ilmiö joka, joka toimii itsekseen ja omilla säännöillä. Ja niin kauan jos siel on joku kuluttaja sitten mukana niin se sitten kyllä yleensä syntyy myöskin se tarve niinku tehdä sinne niitä regulaation kautta sääntöjä että ja miten se toimii. Että tosiaan pitkäänhan on puhuttu jo siitä niinku eri pankeissa ja vastaavissa laitoksissa, missä on yleensä jonkun näköinen kehitysosasto. Että kehitys osastojen työhön on niinku pelkästään näiden EU, sääntöjen implementoimista, että mitään semmoista niinku business lähtöistä kehitystä niin on hyvin vähän vaan se on tätä pakollista tekemistä ehkä tämä BaaS nyt taas vähän herättäis niinku sitäkin, että. Voisiko sen pakollisen lisäksi nyt rakentaa jotain muuta, muuta niinku business lähtöisemmin.
2.65.	Interviewer	Joo. Ja sitten 27 niin no PSD2 me jo katsottiin ja se on paikallaan niinku sanoit mutta ihan BaaS näkökannalta niin onko, onko kohdillaan joku tarpeeksi hyvä kehys tälle kaikelle, että tämä voitaisiin implementoida ja ymmärrettääkö me tai ne jotka rakentaa tätä, että mihin ollaan menossa ja missä mennään tällä hetkellä?
2.66.	Respondent	Tuota kehyksiähän, kehyksiähän on. Ja tosiaan tähän kai aika usein en tiedä, en tiedä aina voiko tämä olla myöskin semmoinen, että tarjotaan tavallaan pelkästään vaan sitä teknistä, teknistä alustaa ja kumpikin pitää huolta omistaan asiakkaistaan,

		<p>mutta se keskustelu mitä on käyty tähän liittyy tätä tiedon jakamista. Esimerkiksi pankki pitäisi antaa tietoja omista asiakkaistaan ja sehän nyt ei niinku noin vaan käy. Mikä tuntuu että on tullut vähän yllätyksenä. Miten niin tietoa ei voi asiakkaan, asiakkaan asioista jakaa noin vaan jollekin kolmannelle osapuolelle, että se pankkialaisuus on semmoinen niinku aivan fundamentti asia mikä on siellä pohjalla. Pankkialaisuus on ollut olemassa niin kauan kun on ollut pankkitoimintaakin. Samoin yksityisyyden suoja, mihin, mikä toi pankkialaisuus on ehkä ilmentymä sitä mitä on tommosiin niinku perustuslaissa turvattuja oikeuksia, että GDPR on niinku nostanut enemmän esiin tätä tämmöstä, My data tyyppistä ajattelua että minä itse määrään minun henkilötietojen käytöstä kuka niitä saa käyttää ja mihin tarkoitukseen se on ollut olemassa kyllä aikaisemminkin, mutta ehkä vähän korostuneemmin.</p>
2.67.	Interviewer	Joo.
2.68.	Respondent	<p>Millä, millä edellytyksillä näitä tietoja voisi sitten jakaa niin se on ehkä vähän semmoinen kysymys mitä pitää pitää. En tiedä juristille se on aika selvä, mutta tuota. Sanotaanko tässäkin menee nämä omat putket etenee omaa tahtia se, joka on keksinyt jonkun hyvän idean ja toteutustavankin siihen niin ne sitten välttämättä ole vielä kaikkia näitä hidasteita siihen jaksanut miettiä.</p>
2.69.	Interviewer	<p>Joo tuota tässä tuli vielä mieleen. No se on osittain tätä 25 mistä jo puhuttiin, mutta että periaatteessa jos loppukäyttäjän tiedot tai data olisi jonkun riskin alla, niin kuka tästä ottaisi sitten vastuun? Onko se pankit vai tämä kolmas osapuoli vai kenties joku sitten muu kuin puhuttiin jo näistä, että kuka tätä koko hommaa monitoroi?</p>
2.70.	Respondent	<p>Kyllä lähtee tohon niinku tiedon jakamiseen, että jos pankista lähtee ulos asiakkaan pankkialaisuuden alaista tietoa. Siinä on niinku säännöt olemassa, ne tulee GDPR kautta osittain että millä edellytyksillä voidaan luovuttaa asiakkaan tietoa talosta ulkopuolelle ja riippuen siitä, että mihin tarkoitukseen sitä, mihin tarkoitukseen sitä tietoa luovutetaan, niin johtaa siihen että millä edellytyksillä se on mahdollista. Että jos se esimerkiksi niinku tässä niin se, tiedon jakaminen tapahtuisi siihen tarkoitukseen, että tiedon vastaanottaja voi vaikka markkinoida omia palveluitaan. Niin silloin oikeastaan se ainoa oikeutus luovuttaa sitä tietoa on sen asiakkaan antama suostumus. Ja silloin tullaan siihen, että hetkinen. Minkä takia joku asiakas antaisi suostumuksen sille, että sen niinku. Riippuen nyt mitä tietoja halutaan mutta saattaa olla hyvinkin, hyvinkin tarkkaa tietoa esimerkiksi kortin käyttö dataa missä asiakas on vinguttanut korttia. Sen saattaa joku palveluntarjoaja haluta, jotta osaa</p>

		sitten markkinoida sopivia tuotteita. Niin miksi ihmeessä luovuttaisin tämän tietoni jollekin kolmannelle osapuolelle?
2.71.	Interviewer	Joo.
2.72.	Respondent	Jotain hyvään minun pitää siitä saada jotta suostuisin, niin tää suostumus kysymys on semmoinen mitä esimerkiksi on pohdiskeltu ja silloin tosiaan jos, jos niinku sanoit että jos sitä tietoa käytetään sitten väärin. Niin tuon tiedon luovuttajan eli sen pankin, niin siellä pitää kyllä varsin vahvasti pystyy osoittamaan että ei, asiakas antoi nimenomaisen ja tällöisen GDPR mukaisen nimenomaisen suostumuksen, että suostuu siihen, että nämä nämä ja nämä tieto niin luovutetaan tälle taholle joka käyttää niitä näihin tarkoituksiin. Niin se pitää pystyä osoittamaan.
2.73.	Interviewer	Joo eli luovuttajat periaatteesta. Niin että siis luovuttaja periaatteessa on, on vastuussa.
2.74.	Respondent	Kyllä, sieltä se alkaa sitten jos sen jälkeen tämä on kunnossa, suostumus on olemassa. Asiakas tietää kyllä kortti datani luovutetaan nyt tolle ihmiselle, joka haluaa markkinoida minulle. Minulle kohdistettuja tarjouksia, sillä sen datan perusteella. Jos sen jälkeen se, joka on saanut ne tiedot käyttää niitä eri tavalla kuin mihin asiakas on alun perin suostunut. Niin sitten se vastuu toivottavasti siirtyy sinne päähän, vähän sillä periaatteella että aiheuttaja, aiheuttaja vastaa vahingosta jos hän käyttääkin sitten toisella tavalla kuin mitä asiakas on. Liittyy myös jos on tota jos on tällöinen tosiaan näitä GDPR, kun se suostumus on se käsittelyperuste. Niin sen suostumuksen voi peruuttaa siinä vaiheessa kun sanoo nyt mä en enää halua, että niitä tietoja sinne luovutetaan, niin se pitää pystyä myöskin toteuttamaan.
2.75.	Interviewer	Joo. Ok kiitos.
2.76.	Respondent	Että joo, se voi tosiaan jos se ainoa sillä toisella palveluntarjoajalla niin aina se idea tähän BaaS yhteistyöhön on se, että se saa sen niinku datan pankista niin tota joutuu niitä sitten kanssa punnitsemaan että kannattaako, jos sen suostumuksen voi peruuttaa ja poistaa niin mitä kannattaa tehdä.
2.77.	Interviewer	Sitten jos hypätään loppuun päin niin onko jotain mitä sä haluaisit lisätä tai mitä me ei olla vielä kysytty joka tulee mieleen?
2.78.	Respondent	Ei kai. Kyllä tässä nämä osittain tangeeraa toisiaan näitä kysymykset, mutta tosiaan mitään semmoista niinku omaa BaaS lakia ei sinänsä ole olemassa. Vaan tuota näitä, näitä tuota sääntöjä sitten etsitään näistä olemassa olevista, osin hyvinkin vanhoista säännöistä joita on, joita on kirjoitettu lakiin jo ajalta

		jolloin ei koko internetiäkään ollut vielä olemassa eikä ATKta niin niitäkin sitten sovelletaan tähänkin maailmaan.
2.79.	Interviewer	Joo, hyvä pointti tuo varmaan meille myös. Onko sitten pitää mitä sinä haluaisit kysyä meiltä ennen kun lopetellaan?
2.80.	Respondent	Mitä tuota tuota. Koska tästä on niinku ruvettu puhumaan näin niinku yleisemmin. Mikä tää aikaperspektiivi on, onko käsitystä?
2.81.	Interviewer	No BaaSista itse voin sanoa, että ehkä. Reilu vuosi sitten olen kuullut. Ja siitä sitten. Ehkä lähtikin meidän kiinnostus kun. No jos Googlaa tai hakee akateemisia papereita niin ei hirveästi materiaalia ole. Vaikka se nyt sitten onkin niin tapetilla kun on tällä hetkellä niin ajateltiin että tässä olisi hyvä rako siten tutkia vähän tarkemmin että missä mennään tällä hetkellä ja, minkä takia.
2.82.	Interviewer2	Eli tuota käytännössä ton niinku PSD2 ja sitten briteissä on semmoinen niinku OPWG niin tuota niiden kahden launchin jälkeen niin se on alkanut enemmän oleen tapetilla mutta kaikki julkiset mitä siitä on, on käytännössä kaupallisia niin että tämä antoi sit meille semmoisen hyvän loven mitä lähtee sitten niin sanotusti tieteellisesti tutkimaan.
2.83.	Respondent	Joo okei. Sitten en ollut ihan hakoteillä itsekään kun tuolla tosiaan Googlailemalla katselin, katselin niitä ei tosiaan niissä, kun se lähtee niinku tuosta tarpeesta ja innovaatiosta ja ehkä mistä nyt lähtee niinku se. Usein ne juridiset säännöt tulee siellä sitten viimeisenä siinä vaiheessa vasta kun. Laitetaan, laitetaan, tulee mieleen. Pitäisikö tästä joku sopimus tehdään ja onko tässä jotain niinku kysymystä, niin välillä huomaa vaan että kaikki muu on tavallaan jo valmista mut sit on niinku käsittelemättä semmoinen ihan perus pointti että mites toi asiakkaan pankkisalaisuus joka on ollut olemassa siitä asti kun pankkitoiminta keksittiin maailmassa joskus heh.
2.84.	Interviewer	Joo heh.
2.85.	Respondent	Niin mites se on tässä otettu huomioon. Niin niin joo kyllä, mielenkiintoinen aihe.
2.86.	Interviewer	Joo kyllä. Mä lopetan nyt nauhoituksen.



## Appendix 7 – Interview Transcription (Respondent 3)

Development Manager, organization 2.

Green. General Banking-as-a-Service

Yellow. Technological context

Blue. Business context

Red. Legislation context

Speaker	Transcribed text and color-codes
3.1. Interviewer	Så om vi hoppar in. Om du kort vill berätta om din bakgrund och utbildning om du anser att det är relevant för Banking-as-a-Service här på fråga tre ungefär.
3.2. Respondent	Om min bakgrund, så jag har studerat informationshantering på universitet kombinerat med handelshögskola.
3.3. Interviewer	Jo.
3.4. Respondent	Och sen har jag jobbat på bank i 20 år i så gått som alla olika positioner som man kan tänka sig, så bankvärlden är bekant även om det dock är bara från ett företags synvinkel, jag har inte jobbat för andra banker.
3.5. Interviewer	Joo, och vad är din titel och ansvar för tillfället?
3.6. Respondent	Titeln är development manager och ansvaret är för produktutveckling.
3.7. Interviewer	Och om vi hoppar direkt in i ämnet så hur bekant är Banking-as-a-Service konceptet åt dig?
3.8. Respondent	Konceptet är ju väldigt nytt och det har ju inte varit framme allt för länge att det är egentligen, första jag hörde om det så var när ledningen meddelade att de har lanserat Banking-as-a-Service. Och där efter har det ju kommit en hel del intresserade kundförfrågningar som vi dock inte har kunnat uppfylla på grund av att själva konceptet inte är färdigt egentligen ännu.

3.9. Interviewer	Jo, och det här kommer ju in på fråga sex redan att var, när, hur och har du främst från arbetet hört och bekantat dig med själv?
3.10. Respondent	Jo, jo.
3.11. Interviewer	Och då på helt allmän nivå, så vilka goda och dåliga sidor ser du att Banking-as-a-Service kan ha med sig?
3.12. Respondent	Nå alltså, om man binder då som i vårt fall bank tjänsten till kunden. Så man kan tänka sig att det ger en kredit limit åt kunden som gärna ska användas i den här ena butiken. Så lite motsvarande kan man tänka sig att du skulle ha på Amazon såhär kredit limit där du sku kunna köpa direkt på Amazon produkter och bara lägga det på det här din kredit på samma sätt som förr i tiden hade man i en viss närbutik så hade man en nota där en familj kunde göra uppköp, och sen när de fick lön så gick man dit och betalade bort det. Så det är liksom samma koncept men i elektronisk form i modern värld, och där är naturligtvis då när man talar om kreditutgivning, så kommer det ofta kort och sådant som möjliggör användning på andra ställen också. Men att det är ju väldigt fastbundet till den ena butiken, som det här Banking-as-a-Service är helt bundet till.
3.13. Interviewer	Jo, och om vi hoppar vidare till nian så ser du några specifika såhär hörnstenar som Banking-as-a-Service till exempel på PSD2?
3.14. Respondent	Nå med tanke på PSD2 så kan man ju göra en hel del såhär informationsflytt genom de här PSD2 APIerna att om man vill fungera som en AISP liksom från den här butikens synvinkel så får man ju mycket såhär information om kundens beteende och köputrymmen och sånt här. Men o andra sidan så är det kanske ändå inte det som de vill, utan det som de kanske vill är liksom att binda kunden bättre fast i dig eller i den här butiken. Så det här.
3.15. Interviewer	Jo, det är intressant synvinkel.
3.16. Respondent	Att det finns olika sätt att genomföra egentligen samma sak men ändå så slutresultatet blir olika.
3.17. Interviewer	Jo. Om vi går vidare till tian så ser du några specifika problem direkt med Bankinig-as-a-Service?
3.18. Respondent	Problem blir det ju i det att kunder inte ofta vet vad de går med på, att om du går med i nån klubb så får du en kreditlimit där och så använder du den på nåt annat ställe så det att klubben får veta att du har handlat på andra stället, jag

		vet inte, det är kanske ändå sådan information som kunden inte direkt vill berätta. Och där är just det att även om banksekretesslagen ställer sina krav och allt annat sånt, det går att kringgå det bara med att kunden specifik godkänner det. Så kan det ändå gå fel för att de flesta inte läser igenom vad de kruxar för, kruxar i bara ja ja ja och godkänner allt, jag vill bara ha min TV här nu.
3.19.	Interviewer	Okej.
3.20.	Respondent	Och sen senare fatta vad allt man har gått med på att dela så är kanske inte så hemskt trevligt. Och sen är det ju också det att en butik är kanske inte van med att hantera personuppgifter och speciellt inte såna här extra sensitiva uppgifter som kan komma fram genom kundens köpbeteende. Om man till exempel betalar med kreditkort typ för någon, hmmm, Koomuksen vaalitulaisuus, eller nåt sånt här, så då kommer det fram liksom sådan information om kunden som man måste hantera mycket försiktigt. Och då kan det hända att någon sån här butik som annars är väldigt glad på att använda alla sätt de bara kan för att göra reklam så kan göra misstag väldigt lätt.
3.21.	Interviewer	Okej det är intressanta poänger. Om vi kollar på fråga nummer 11 och på själva rollen eller statusen av Banking-as-a-Service för tillfället. Ser du det på nåt specifikt sätt både allmänt eller från ditt egna perspektiv?
3.22.	Respondent	Hmm, alltså här under senaste åren så det här, vet vi att de här traditionella bankerna har varit lite problematiska för att det inte har satsat på deras elektroniska tjänster. Och då har det skapat ett vakuum för fintech bolag att fylla det och nu sen när fintech bolagen har liksom mognat hela marknaden, så börjar det komma såna här intressanta lösningar som definitivt kommer att ändra på hela konceptet. Jag menar vin något skede läste jag någon undersökning om, kommer inte ihåg exakta tal men, de flesta var villiga att överföra sin lön direkt till Apple för att sedan via Apple Pay kunna använda det. Att det är in lite på såna här icke banker att sköta sina finanser så det har vuxit så starkt att bankerna snart har stora problem med att kunna liksom, vad heter det?
3.23.	Interviewer	Hmm, hitta sina kunder eller hålla kvar dem?
3.24.	Respondent	Ja, eller att liksom, vad behöves bankerna till efter det?
3.25.	Interviewer	Jo.
3.26.	Respondent	Att om kunderna inte är intresserade av att sätta sina pengar på bankerna så då blir det nog, företagsbanker är ju sen en

		annan sak men liksom kundkonton och sånt här, om det faller bort blir det nog lite intressant.
3.27.	Interviewer	Jo, tack. Om vi går vidare till själva teknologin bakom. Så hur bekant är du med själva teknologin bakom Banking-as-a-Service?
3.28.	Respondent	Nå alltså inte finns det ju någon färdig teknologi eller standard för det där, att där är ju mera om du har ett koncept och du har rätta avtal så teknologin får sen fixas upp bäst det går. Och lite också på basen av det som det här, butiken som köper den här tjänsten så vad de har för används tankar kring det här hela, tjänsten.
3.29.	Interviewer	Jo, och hmm. Vidare till fråga 13 så APIer är ju för tillfället kanske den mest vanliga teknologin men inte ändå specificerad att vara den man måste använda, så har du några funderingar kring just det här?
3.30.	Respondent	Alltså, banking som sådant, där är ju trenden den att real tids information är idag en bas förväntan, och några batch körningar så det går inte nå mera ju. Och då måste man i praktiken då köra med APIer av en eller annan sort, och säkerhetsmässigt går det att bygga upp det på ett säkert sätt så det är inga problem på den fronten heller. Men sen att till exempel kredit beslut måste göras på bankens sida och kan inte liksom överlåtas till butiken. Att där är nu sen, och reskontra förstås. Men liksom butiken blir där en tredje part som erbjuder nätbankstjänster, som de har brandat som sin egen.
3.31.	Interviewer	Jo, och vi kom kanske redan lite in på fråga 14 och följdfrågan, men du ansåg att APIer var ganska säkra allmänt, men ser du ändå några problem med säkerhet eller kundens privata gällande dem?
3.32.	Respondent	Nja, inte ser ja, så länge som säkerheten sköts ordentligt så. Jag menar, ingenting är 100 procent säkert, men att risken är ju väldigt liten. Men men samtidigt så finns det ju alltid banken har ju sina praxis som bankbranschen i sig har tagit som sina egna och såna här butiker som har lite andra praxis så där finns det ju alltid en risk när två olika kulturer börjar jobba ihop, men att ändå så inte är dom här butikerna heller helt leväperäisiä med det här. Men att nu är det ju, nu har de ju också en nätbutik och där betalningar genomförs så inte är det på det sättet ett allt för stort problem.
3.33.	Interviewer	Okej, om vi tar oss vidare till business perspektivet, så hur känner du till själva iden bakom Banking-as-a-Service som

		då de här third party providers och nykomlingar på marknaden som PSD2 har möjliggjort?
3.34.	Respondent	<p>Hmm, jag är nu såhär på en hög nivå bekant med det där, men inte har jag, inte vet jag hur lönsamt det ännu är. Där är nu ofta så om man tänker sig att om kunden har ett liksom till exemplen gällande det här TPP så om kunden har ett bankförhållande med en part och sen vill man använda någon annan part som liksom för sin interaktion med banken så det här, var skulle de där pengarna komma ifrån? Att hur många kunder är villiga att betala för någon tilläggs-tjänst bara som sådan, att då blir det just det här att butik som amazon till exempel där du har ett membership som erbjuder dig en himla massa allt möjligt så då finns det ju någon sorts tilläggsvärde där som kunden också är villig att betala för. Men bara någon sorts nyare och fräschare look på appen så vet jag inte riktigt vad nyttan skulle vara. Om inte sen kundens data information liksom används till att skapa det där tilläggsvärdet för TPP.</p>
3.35.	Interviewer	Joo, och det leder säkert in på fråga 16 att hur ser du rollerna för traditionella banker och fintechns eller liknande i framtiden?
3.36.	Respondent	<p>Traditionella banker ligger ju på infrastrukturen så de är på det sättet säkrade. Det att lyckas de behålla kunderna, så det beror på deras satsning på tjänster, och där är nu sen, fintecherna har en möjlighet att sticka in där och ta någon andel, men tillsviare har vi inte riktigt sätt att någon skulle ha tagit allt för stora marknadsandelar. Att det är nu närmast de här några större i Europa som, som har lyckats göra något vettigt av det, men det här, Europa är också så pass splittrat gällande bankregler i olika länderna att det blir ganska svårt att skala upp det. Men åtminstone så har vi några som har lyckats en bit på vägen.</p>
3.37.	Interviewer	<p>Jo, tack. Sen då till digitala plattformar och API ekosystem. Så ser du att till exempel applikationer eller andra kommer att delas via såna här digitala plattformar eller är det nåt som banker kommer sköta helt av sig själv? Nu tänker vi på till exemplen appstores och sånt här, att ju mera det finns användare så finns det kanske material, och sen igen och bolag som lägger upp sitt material dit eller kanske banker gör det här själv via en nättjänst så man inte behöver använda sig av en plattform så att säga.</p>
3.38.	Respondent	<p>Jo alltså jag vet inte, om man vill köra appar så måste man nog göra det via appstores. Där är ju, det blir problem på</p>

		flera fronter ifall man börjar lansera egna appar som inte skulle levereras via dessa plattformar.
3.39.	Interviewer	Och kanske följdfrågan här är att kommer BaaS som sig själv bli en sån här plattform lik del att ju mera den här BaaS, om vi kallar det produkten så kanske den får bolag med och på det viset kan jämföras till en digital plattform i sig själv?
3.40.	Respondent	Det tror jag inte, jag tror inte att det blir nåt som man direkt skulle kunna jämföra med en digital plattform. För BaaS kräver så pass noggranna avtal att det kommer aldrig att bli så här direkt plug and play, att jo man kan ha vissa liksom färdiga tjänster som man kan återanvända med flera kunder. Men helt så där liksom, sprid på nätet och liksom och sen får ännu användaren rättighet till det här och sen är man upp and running på ett veckoslut. Så nåt sånt här kommer det ju inte liksom att bli.
3.41.	Interviewer	Jo.
3.42.	Respondent	Inte i alla fall på en nära framtid.
3.43.	Interviewer	Jo, heh. Ser du då nån sort av nya innovativa alltså lösningar som BaaS skulle kunna hämta med sig?
3.44.	Respondent	Hmm, jo jag tror att där finns olika betalningsmöjligheter, speciellt när det handlar om större butiker. Jag menar Spankki har ju fört sitt koncept ganska långt, där har de lite liknande situation men på grund av att de hör till samma koncern så räknas det ju inte som BaaS men att det är ändå samma koncept, dom säljer sina tjänster via butiken. Och då får du liksom vissa nyttor och rabatter och annat sånt. Och det tror jag man kan föra väldigt mycket längre än vad det är idag. Men där kommer det sen liksom hela tiden det här problemet att kunden måste ha kontroll över sitt eget data och det kommer att ställa till problem med att skala upp det.
3.45.	Interviewer	Jo.
3.46.	Respondent	Du måste ju ha ett så pass flexibelt system att om en kund väljer ja eller nej så måste den ändå kunna få så gott som samma tjänstenivå även om man inte får direkt samma rabatter eller annat sånt här men det är liksom, det kommer att kräva att man lyfter på nivån på de tekniska lösningarna.
3.47.	Interviewer	Jo. Och om vi hoppar vidare till fråga 19, så ser du att traditionella finansbolag nåndera förlorar marknadsandelar till nykomlingar eller kan det till och med vara så att BaaS delvis hjälper dem att hållas med i utvecklingen?

3.48.	Respondent	Jag tror att BaaS är sist och slutligen en ganska naturlig övergång, jag menar banker har redan en längre tid gjort sig själv onödiga, gällande kontor och fysiskt närvaro genom att ha varit de första som flyttar sina tjänster i elektronisk form. Men varuhandeln kommer att ha sina fysiska serviceplatser ännu en längre tid. Och där tror jag att banker kan få sin kundtjänst via butiken så det här har de en bättre möjlighet att behålla sina kunder och vara relevanta även i framtiden.
3.49.	Interviewer	Jo, hmm tack. Och om vi går vidare till det här alltså lagstiftnings perspektivet så är du hur bekant med lagstiftningen bakom BaaS, till exempel då PSD2 direktivet?
3.50.	Respondent	Jo alltså vi har själva hållit på och reda ut det här på senaste tiden så har nog någon koll på problematiken bakom det legala i det.
3.51.	Interviewer	Jo, och hur ser du att just det här PSD2 inverkar på marknaden på bra och dåliga sätt?
3.52.	Respondent	Hmm, det kommer nog att inverka men inte så mycket som man kanske skulle kunna tänka sig. Där är, på finska marknaden ser jag inte allt för många såna här trusted third parties som skulle komma. Men däremot så ser jag att de där samma APIerna kan användas till mycket annat där man behöver information om kundens konto och kontohändelser och annat sådant.
3.53.	Interviewer	Jo.
3.54.	Respondent	Och där misstänker jag att det som var ursprungliga meningen med det där direktivet kommer att skapa helt andra användningssätt för de där tjänsterna. Vilket inte är alls dåligt.
3.55.	Interviewer	Jo, och hur då med traditionella banker, ser du att de är tillräckligt mogna för att följa PSD2?
3.56.	Respondent	Alltså, lagstiftningen har trätt i kraft och man måste följa den så, de banker som inte är tillräckligt mogna kommer ju förr eller senare hamna i problem med det. Så det är nog, banker har sina problem med utveckling, men när man måste så måste man. Att det är, om vi ser första stora böter på marknaden så tror jag att varje bank kommer att ha det i skick.
3.57.	Interviewer	Jo. Och vidare till fråga 22, så ser du att den här lagstiftningen mera pressar eller bara ger möjlighet till den här utvecklingen av BaaS?



3.58.	Respondent	Inte tycker jag att det orsakar några problem direkt: Det har liksom, det har öppnat en port vilket är bra, men att sen BaaS tjänsterna i praktiken kommer att genomföras på annat sätt än till exempel då de här PSD2 APIerna för PISPin och AISPin. För de APIerna är väldigt strama, det är inte allt för mycket man kan göra med dem. Att det är, om man vill ge kunden en bättre upplevelse så då kommer man att måsta bygga nåt annat än att dra nytta bara av de officiella versionerna.
3.59.	Interviewer	Jo, och då till fråga 23 så ser du att det är möjligt att följa de här strikta reglerna just för BaaS en som du sade tidigare men att man kanske själv behöver lägga till annat också för?
3.60.	Respondent	Jo. Jo alltså egentligen för stora såna här handlare så kommer inte PSD2 officiella vägarna att vara vägen att gå. Jag menar en Amazon, om de gör ett samband med någon bank, så kommer de inte att registrera sig som trusted third party. Att de kommer bara att liksom återsälja bankens tjänster och då kommer där i praktiken vara helt andra anrop i bakgrunden än de här PSD2 officiella APIerna.
3.61.	Interviewer	Okej, tack. Och hur ser du då att vem är det som har ansvaret att följa efter de här olika alltså, vad man måste, responsibilities bakom hela BaaS nätverket eller ekosystemet?
3.62.	Respondent	Hmm, jo alltså det är just det där att, ansvaret i det här ligger hos den där banken. Att det kommer man inte över eller under, även om kunden har gett sitt godkännande på att dela information, och dela på uppgifter om den så då är liksom, banken har ett ansvar att de till att köparen av BaaS tjänster faktiskt klarar av att sköta det på ett säkert sätt som då säkrar kundens rättigheter och annat sådant. Och där är också det här, att det kommer aldrig att bli plug and play, det är som sagt så strikt genomgång som krävs av det innan man kan göra något sådant.
3.63.	Interviewer	Jo, jag tror det delvis också svarar på 25 att det är banken i grund och botten som skall ta ansvar över att de här tredje parterna följer, följer det som delas till dem?
3.64.	Respondent	Exakt.
3.65.	Interviewer	Jo, och 26 då. Ser du att allt det här som måste följas nu redan är, eller blir för mycket att ta itu med när det ändras kort och hela tiden?
3.66.	Respondent	Nej. Det är alltså, själva tjänsterna som regelverket kräver. De är inte allt för invecklade. Problemet ligger i att bankerna har strama åt utveckling i allt för, allt för länge. Och

		då finns det inte resurser att genomföra sådant i någon av bankerna.
3.67.	Interviewer	Jo.
3.68.	Respondent	Och där så ligger sedan bakgrunden egentligen i det att hela tiden kräver, myndigheterna kräver att bankerna har reserver, marknaden kräver att banken gör vinst och samtidigt så nya regulatoriska faktorer kommer att påverka hur mycket banken hamnar lägga pengar på diverse olika saker. Och då blir det liksom, eller det har varit allt för länge nu så att liksom utveckling har det varit möjligt att skala ner på men att nu så småningom måste bankerna ändra sig på den fronten ordentligt.
3.69.	Interviewer	Jo, och så sista frågan. Ser du att de här ramverken för BaaS är tillräckliga nu redan och förstår de här som sätter upp dem, i vilket håll industrin är på väg?
3.70.	Respondent	Där är ju, om man tänker på PSD2 som är EU regler, och de som har gjort besluten över det. Så där är ju det problemet att Europa är så varierande med tanke på hur långt de har kommit med sina elektroniska tjänster från bankerna. Att där är, de har säkert väldigt svårt att sätta passlighetsgränser på vad man kan kräva av bankerna när det på, o ena sidan så har man norden där man är väldigt långt med elektroniska tjänster och sen o andra sidan har man Grekland och Spanien där man liksom, där folk närmast ännu går till banken i fysisk form. Så det är inte liksom, det blir väldigt svårt för dem att hitta regelverk som skulle vara rättvisa åt alla parter.
3.71.	Interviewer	Jo, tack det var intressant svar. Och sen sist så före vi avslutar. Kommer du att tänka på något som vi inte ännu frågat eller som du skulle vilja lägga till, allmänt eller med BaaS?
3.72.	Respondent	Nej, alltså det är för tillfället så är det en bransch som först håller på att liksom forma sig. Och jag tycker att det blir intressant att se vart det kommer att formas. Myndigheterna övervakar naturligtvis hela tiden och ser ifall det börjar gå åt fel håll så kommer de att ställa till med nya regler och lagar som styr det hoppeligen igen mot rätt håll. Och där är ju sist och slutligen fråga om att kunden skall vinna på det där någonting. Att det är liksom kundnyttan som driver hela den här utvecklingen, och där så, så länge som man kommer ihåg det som grundprincip så tror jag att det blir nog bra, det blir nog bra i längden.
3.73.	Interviewer	Okej, och har du några frågor till oss gällande ämnet eller själva Banking-as-a-Service?

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3.74.	Respondent	Nej inte väl, hur kom det sig att ni valde det här?
3.75.	Interviewer	Vi hade ju också hört om ämnet och läste oss in på det lite mera och tyckte det fanns hemskt lite akademiska skrifter om det här så ansåg vi att det skulle vara nåt intressant att undersöka mera.
3.76.	Interviewer 2	Jo.
3.77.	Respondent	Jo.
3.78.	Interviewer	Men att kortfattat så.
3.79.	Respondent	Det är ju ett nytt och aktuellt ämne så varför inte.
3.80.	Interviewer	Jo. Jag stänger av inspelningen nu.

## References

- Adner, R. (2017). "Ecosystem as structure: An actionable construct for strategy," *Journal of Management* (43:1), pp 39-58.
- Baldwin, C.Y., & Woodard, C.J. (2009). "The architecture of platforms: A unified view," in *Platforms, Markets and Innovation*, A. Gawer (ed.), Edward Elgar Publishing: Cheltenham, UK, pp. 19-44.
- Basole, R.C. (2019) On the Evolution of Service Ecosystems: A Study of the Emerging API Economy. In: Maglio P., Kieliszewski C., Spohrer J., Lyons K., Patrício L., Sawatani Y. (eds) *Handbook of Service Science, Volume II*. Service Science: Research and Innovations in the Service Economy. Springer, Cham.
- Bhattacharjee, A. (2012). *Social Science Research: Principles, Methods, and Practices*. 2nd ed.: USF Tampa Open Access Textbooks Collection.
- Brear, D., & Bouvier, P. (2016). Platform Banking Taxonomy. Available online: <https://fini-culture.com/platform-banking-taxonomy/> [Accessed 30 March 2021]
- Brodsky, L., & Oakes, L. (2017). Data sharing and open banking. *McKinsey & Company*. Available online: <https://www.mckinsey.it/sites/default/files/data-sharing-and-open-banking.pdf> [Accessed 7 April 2021]
- Bryman, A., & Bell, E. (2015). *Business Research Methods*, 4, New York, USA: Oxford University Press.
- Cennamo, C., & Santalo, J. (2013). "Platform competition: Strategic trade-offs in platform markets," *Strategic Management Journal* (34:11), pp 1331-1350.
- Constantinides, P., Henfridsson, O., & Parker, G.G. (2018). "Introduction - Platforms and infrastructures in the digital age," *Information Systems Research* (29:2), pp 381-400.
- de Reuver, M., Sørensen, C., & Basole, R.C. (2018). "The digital platform: A research agenda," *Journal of Information Technology* (33:2), pp 124-135.
- Diener, E., & Crandall, R. (1978). *Ethics in Social and Behavioral Research*, Chicago: University of Chicago Press.
- Economides, N., & Katsamakos, E. (2006). "Linux vs. Windows: A comparison of application and platform innovation incentives for open source and proprietary software platforms," in *The Economics of Open Source Software Development*, P. J. H. Schröder and J. Bitzer (eds.), Elsevier B V: Oxford, UK.
- Eisenmann, T., Parker, G., & van Alstyne, M.W. (2006). "Strategies for two-sided markets," *Harvard Business Review* (84:10), pp 92-101.

- Euronews (2020). Thousands of sensitive documents stolen in Swedish data hack. Available online: <https://www.euronews.com/2020/10/27/thousands-of-sensitive-documents-stolen-in-swedish-data-hack> [Accessed 21 May 2021]
- FIN-FSA. (2019). Financial Supervisory Authority, *The Second Payment Service Directive (PSD2)*, Available online: <https://www.finanssivalvonta.fi/en/regulation/regulatory-framework/psd2/> [Accessed 30 March 2021]
- Gawer, A., & Cusumano, M.A. (2008). "How companies become platform leaders," *Sloan Management Review* (49:2), pp 28-35.
- Gawer, A., & Cusumano, M.A. (2014). "Industry platforms and ecosystem innovation," *Journal of Product Innovation Management* (31:3), pp 417-433.
- Ghazawneh, A., & Henfridsson, O. (2013). "Balancing platform control and external contribution in third-party development: the boundary resources model," *Information Systems Journal* (23:2), pp 173-192.
- Gozman, D., Hedman, J., & Olsen, K.S. (2018). Open banking: emergent roles, risks & opportunities.
- Groves, M. R. & Kahn, L. R. (1979). *Surveys By Telephone. A National Comparison with Personal Interviews*. New York: Academic Press, INC.
- Hagiu, A. (2009). "Multi-sided platforms: From microfoundations to design and expansion strategies," *Harvard Business School Strategy Unit Working Paper*. Available online: <http://ssrn.com/abstract=955584> [Accessed 20 March 2021]
- Hanseth, O., & Lyytinen, K. (2010). "Design theory for dynamic complexity in information infrastructures: The case of building internet," *Journal of Information Technology* (25:1), pp 1-19.
- Hiltunen, L. (2008). *Opinnäytteen aineiston hankinta*. Jyväskylän Yliopisto. Available online: [http://www.mit.jyu.fi/OPE/kurssit/Graduryhma/PDFt/aineiston\\_hankinta.pdf](http://www.mit.jyu.fi/OPE/kurssit/Graduryhma/PDFt/aineiston_hankinta.pdf) [Accessed 30 March 2021]
- Huber, T.L., Kude, T., & Dibbern, J. (2017). "Governance practices in platform ecosystems: Navigating tensions between cocreated value and governance costs," *Information Systems Research* (28:3), pp 563-584.
- Huhtamäki, J., Basole, R.C., Still, K., Russell, M.G., & Seppänen, M. (2017). Visualizing the Geography of Platform Boundary Resources: The Case of The Global API Ecosystem. *HICSS*.
- Independent (2020). Finland shocked by therapy center hacking, client blackmail. Available online: <https://www.independent.co.uk/news/finland-shocked-bytherapy-center-hacking-client-blackmail-finland-hacker-ransom-hackers-patient-records-b1316534.html> [Accessed 21 May 2021]
- Jacobides, M., Cennamo, C., & Gawer, A. (2018). Towards a Theory of Ecosystems. *Strategic Management Journal*. 2018; 39: 2255– 2276.

- Jacobsen, I.D. (2002). Vad, hur och varför? - Om metodval i företagsekonomi och andra samhällsvetenskapliga ämnen. Lund: Studentlitteratur AB.
- Järvinen, P. (2002). Tietoturva & yksityisyys. 2. print. Jyväskylä: Docendo Finland Oy.
- Kvale, S. (1996). The 1,000-page Question. *Qualitative Inquiry*, 2(3), 275-284.
- Kyngäs, H., & Vanhanen, I. (1999). Sisällön analyysi. *Hoitotiede* 11 (1), 3-12.
- LeCompte, D.M., & Goetz, P.J. (1982). Problems of Reliability and Validity in Ethnographic Research, *Review of Educational Research*, vol 52, no 1, pp 31-60.
- Lund University. (2021). Deviations from good research practice. *Staff Pages*. Available online: <https://www.staff.lu.se/research-and-education-0/research-support-0/research-ethics-and-animal-testing-ethics/deviations-good-research-practice> [Accessed 12 April 2021]
- Matsa, D. (2011) Competition and Product Quality in the Supermarket Industry, *Quarterly Journal of Economics*, 126 (3), August, p.1539–1591.
- Moilanen, J., Niinioja, M., Seppänen, M., & Honkanen, M. (2019). API Economy 101: Changes Your Business. BoD – Books on Demand.
- National Cyber Security Center. (2018). Secure development – towards approval. Available online: [https://www.kyberturvallisuuskeskus.fi/sites/default/files/media/publication/Turvallinen\\_tuotekehitys\\_Suomi\\_J003\\_2018.pdf](https://www.kyberturvallisuuskeskus.fi/sites/default/files/media/publication/Turvallinen_tuotekehitys_Suomi_J003_2018.pdf) [Accessed 11 January 2021]
- National Cyber Security Center. (2020). Information security. Available online: <https://www.kyberturvallisuuskeskus.fi/en/our-activities/regulation-and-supervision/information-security> [Accessed 10 January 2021]
- Open Banking Limited. (2021). What is Open Banking? Available online: <https://www.open-banking.org.uk/customers/what-is-open-banking/> [Accessed 8 April 2021]
- Porter, M. E. (1988). *The Competitive Advantage: Creating and Sustaining Superior Performance*. New York, Free Press.
- Recker, J. (2013). *Scientific Research in Information Systems. A Beginner's Guide*. Progress in IS. New York, NY, USA: Springer.
- Remolina, N. (2020). Open banking: Regulatory challenges for a new form of financial intermediation in a data-driven world.
- Singh, J., & Michels, J.D. (2018). Blockchain as a service (BaaS): Providers and trust. In *2018 IEEE European Symposium on Security and Privacy Workshops (EuroS&PW)* (pp. 67-74). IEEE.
- Spagnoletti, P., Resca, A., & Lee, G. (2015). A design theory for digital platforms supporting online communities: a multiple case study. *Journal of Information Technology* 30, 364–380.
- Stenbacka, C. (2001). "Qualitative research requires quality concepts of its own", *Management Decision*, Vol. 39 Issue: 7, pp.551-556

Tuomi, J. & Sarajärvi, A. (2009). *Laadullinen tutkimus ja sisällönanalyysi*. Helsinki: Tammi.

Valli, R., & Aaltola, J. (2015). *Ikkunoita tutkimusmetodeihin 1. Metodien valinta ja aineistonkeruu: virikkeitä aloittelevalla tutkijalla*. Jyväskylä, Finland: PS-kustannus.

Zachariadis, M., & Ozcan, P. (2017). *The API economy and digital transformation in financial services: The case of open banking*.