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VALUE ADDED CREATION FROM THE INTRODUCTION OF INNOVATIVE MOBILE BANKING SERVICES: AN APPROACH FOR BANKING INSTITUTIONS

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Felipe

Abstract

This document gives an overview of the dynamics related with added value creation in the banking sector derived from the implementation of innovative mobile banking services.

An initial state of the art research about the adoption of the Mobile Banking channel, the importance of the digital transformation in banking institutions and the upcoming disruptive innovation in the banking sector due to the arrival of Fintech companies, reveals trends, opportunities and threats for the added value creation on a financial institution.

The approach to the value added creation is presented on a Added Value Tree with the aim of represent on a diagram the main benefits that a banking institution can achieve with the implementation of an innovative mobile banking service. Indeed, the value tree proposes different KPIs for each type of benefit with the aim to be an starting point for further analysis and monitoring of added value creation.

The presentation of case studies represents an opportunity to identify the most important trends in the banking sector regarding the mobile banking and validate the added value tree proposal.

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1. Introduction

“Mobile banking is defined as the product or Services offered by a bank or a microfinance institute for conducting financial and non financial transactions using a mobile device, namely a mobile phone, smartphone or tablet”[1]. Mobile banking arrived in order to join the traditional banking channels, which by the moment of introduction were constituted by Branch, Phone and Internet Banking.

The adoption of Mobile banking channels was enhanced by the rapid growth of the Mobile Handsets use and the integration of this technology in the daily activities of users. By 2014, the findings of the Federal Reserve in the U.S Market after conducting a survey to 50,000 U.S Citizens individuals reveal that 39% of the entire sample reported Mobile banking usage compared with a 33% reported the precedent year. Mobile handsets penetration showed a variation of (+11%) related with the previous year. In fact, 33% of smartphone owners declared that getting a smartphone was the main reason to start using mobile banking.[2]

This penetration over time had an influence in the way customers were willing to do banking making them aware that banking wherever and whenever is more convenient than ever. As reported in the same survey, “activities such as checking account balances was used by the 94% of the sample. On certain activities such as shopping, 63% of mobile banking users check their accounts before making a purchase”[3]. This type of behavior shows how important is an easy-fully mobile banking experience to customers.

In order to keep competitive under the arrival of a new set of Non-Banking competitors, banking institutions should adapt their traditional all-in-one business model putting

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[1] Wikipedia. https://en.wikipedia.org/wiki/Mobile_banking

[2] Marous J (07/04/2015) *Has Mobile Banking Usage reached a Pleateu?.* The Financial Brand. https://thefinancialbrand.com/51255/mobile-banking-usage-report-fed/

[3] Board Of Governors of the Federal Reserve System (03/2015) Consumers and Mobile Financial services. Board of Governos of the Federal Reserve System. https://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201503.pdf

particular attention in the eventual disaggregation of the different banking functions[4]. Taking into consideration that new digital entrants could be able to offer certain banking functions due to their expertise derived from other sectors, banks should take strategic decisions on which business model is more suitable in order to have comparative advantages.

The entrance of this new type of competitors, in the European case, is possible due to the PSD2 Directive on Payment services by European parliament that require European banks to allow Third Party Providers to access consumer data and payment infrastructure.

In order to be able to share this information, banks are moving towards the so-called API (Application programming Interfaces) that allows standard communication between the internal information hold by the bank and the information needed by the Third Party Provider. This standardization allows the third parties to get information from several institutions and constitute a variety of business proposals in which the customer is the winner.

Due to the expertise of these new entrants in the IT sector, banks are moving towards collaboration and partnerships in order to make the best out of this situation in terms of costs and innovation. The decisions that banks take right now regarding the relationships with these new players could certainly influence the customer loyalty and therefore the added value creation for shareholders.

2. Methodology

2.1. Thesis Work Scope

In a Fast changing world with a sustainable growth of digital devices adoption, customers in a variety of sectors in the economy are requiring an outstanding digital experience on their journey. Particularly, in the banking sector, customers are willing to bank in real-

[4] Kobler D, Bucherer S, Schlotmann J (2016) *Banking business models of the future*. Deloitte. https://www2.deloitte.com/content/dam/Deloitte/tw/Documents/financial-services/tw-banking-business-models-of-the-future-2016.pdf

time. The mobile use for banking is increasing everyday and the decision to choose or remain engaged with a particular banking institution seems to be hardly linked with the ability of the bank to provide it's customers with innovative services available on a 24/7 basis.

From the other side, Banking sector is passing through a liberalization process in order to let Third Party Providers to have different business models with the aim to enhance consumer welfare. This decision is changing the way that banking is done and is bringing an eventual disruptive innovation.

This third parties were born not as banks, this companies comes from the IT, telecommunication and social media sectors and are called Fintech. Being born with digital leading business models, this companies are repurposing the way of banking known until today in a sector with huge potential due to the big amount of data that could be absorbed by customer behavior.

In order for banks to be competitive in this moment, the digital transformation have to start as soon as possible. Different banking institutions have already started and already have incredible benefits keeping up with customer expectations.

This digital transformation process for the bank takes time and requires an associated investment that is planned to be recovered with the possibility to enhance revenues, reduce operational costs and enforcing customer loyalty.

In this order of ideas, this thesis work have the scope of proposing, based on a state-of-the-art research, a value tree that can explain the added value creation for a banking institution associated with the introduction an innovative mobile banking service. This value tree is proposed with drivers and associated KPI's used in the industry in order to analyze and monitor the added value creation.

Following this focus, in order to endorse this proposition, a selection of business cases showing the benefits gotten by financial institutions with the implementation of innovative mobile banking services around the world are presented. This business cases takes into account innovative services developed by either banks and third parties.

2.2. Literature Review

In this chapter, three main topics are going to be addressed in order to understand the importance of digital integration in the banking institutions. An initial overview about the opportunities regarding the integration of digital, the digital transformation process of a financial institution and the possible scenarios regarding the decision taking towards the inclusion of digital.

2.2.1. Mobile Banking Context for Value Creation

The adoption of digital in the banks do not represent anymore an opportunity for competitive advantage, instead, it represents a way in order to guarantee the sustainability in the medium-longterm[5].

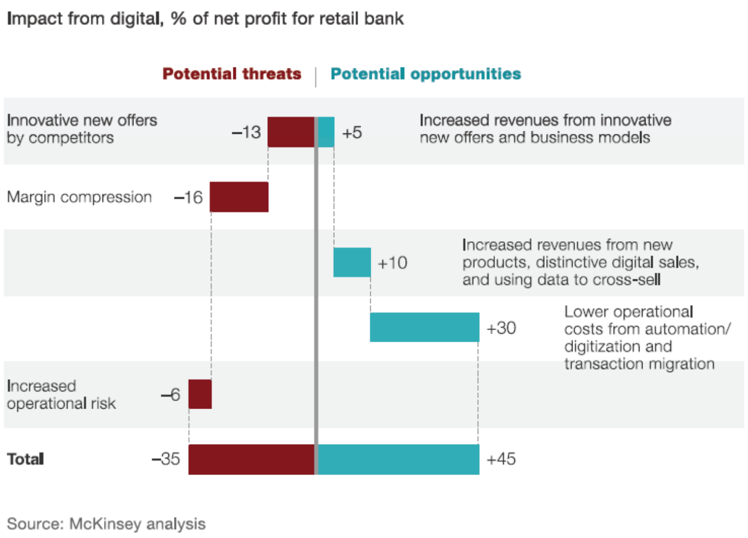

Figura 1.Impact from digital, % of net profit for retail bank. Source: McKinsey & Company

Following McKinsey & Company studies, the actual boom in the banking expansion processes is totally supported on the introduction of digital. Revenues

[5] Ambrosetti, HP (2015) *The Connected Banking Report 2015 Opportunità emergenti attraverso l'innovazione digitale*. Ambrosetti HP. http://www.ambrosetti.eu/wp-content/uploads/The-Connected-Banking-Report-2015_ITA.pdf

and profits will be got by the banks who can use the technology in order to automate processes, create new products, follow the regulations and transform the customer experience[6].

In the next five years, the power that the digital changes give to the banks will represent at least 40% of the revenues growth in the geographical areas with the most digital propense clients.

Making it more particular, the rapid adoption of smartphones in the last years, transformed the way in which a person drives its journey. This adoption represent a change in the customer preferences for different sectors in the economy. Smartphones give customers more options due to the possibility to complete, in the case of banking, transactions and access to information, anytime, anywhere.[7]

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[6] Broeders H, Khanna S (02/2015) Strategic choices for banks in the digital age. McKinsey & Company. http://www.mckinsey.com/industries/financial-services/our-insights/strategic-choices-for-banks-in-the-digital-age

[7] Deloitte. (2010).Mobile banking: *A Catalyst for improving bank performance*. Deloitte. https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/Process/mobile_banking_bank_performance.pdf

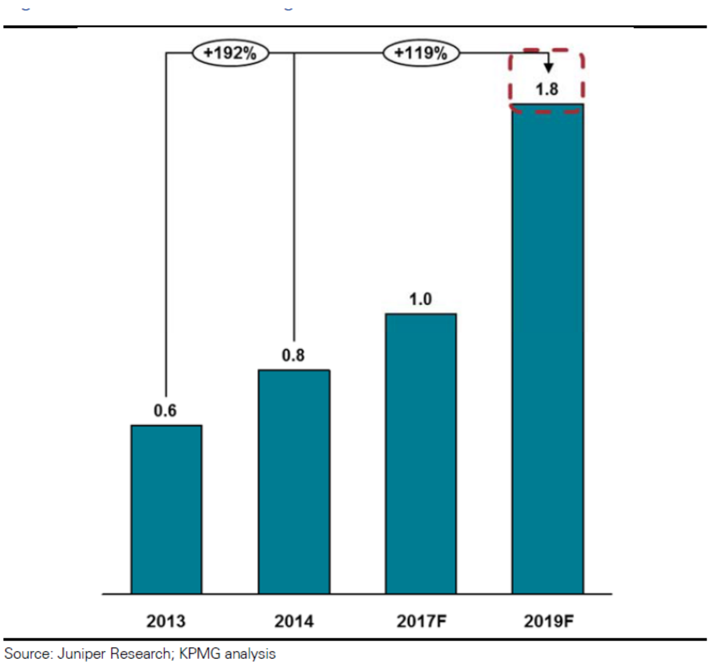

Figura 2. Global Mobile banking users. Source: KPMG

Following this trend and the assumption that mobile banking channel constitute a need for sustainability in the banking business model, form the operation side, the advantages of mobile channel bring efficiency and broader revenue streams for banking institutions. This two premises will be supported by creation of customer loyalty and finally will constitute the added value creation for the institution.

In order to arrive to the customer, the channel strategy on a banking institution can integrate different ways, sometimes, by clustering clients or services into one particular channel. Mobile banking channel nowadays represent an incredible opportunity in order to put together two of the main three objectives of the added value creation. Mobile banking channels have the lowest cost per transaction and due to the rapid adoption of customer to the smartphones represent a huge potential for revenue increase enhancing the possibility to arrive to more customers.

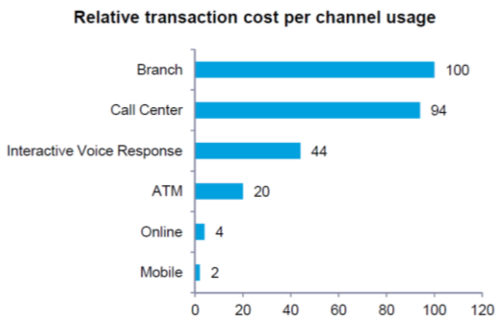

Figura 3. Relative transaction cost per channel usage. Source: Deloitte

The process of integrating the mobile banking channel into the traditional banking business model already shows that several variables are aligned in order to arrive to a successful result. However, this process comes along with different decisions from the managerial side taking into account that stakeholders live in a fast changing environment. Banking institutions nowadays, due to technology wide spreading process, face a growing competition from stakeholders such as Telecommunications providers and non banking institutions that offers services associated with banking activity in the traditional business model but nowadays can be performed by third parties such as payments. Besides this, the banking customer see less barriers in order to change banking institution. That is why customer loyalty becomes an important concern.

In order to evolve the traditional banking business model, the integration of digital take into account different actions and different results regarding the decision that directors of banking institutions take right now.

2.2.2. The digital transformation process of Banking

The digital transformation process of the bank constitute a series of structural changes that brings efficiency and sustainability to the traditional business model. Ambrosetti and Hewlett Packard make reference to the most important aspects in which technology contribute to this digital transformation.

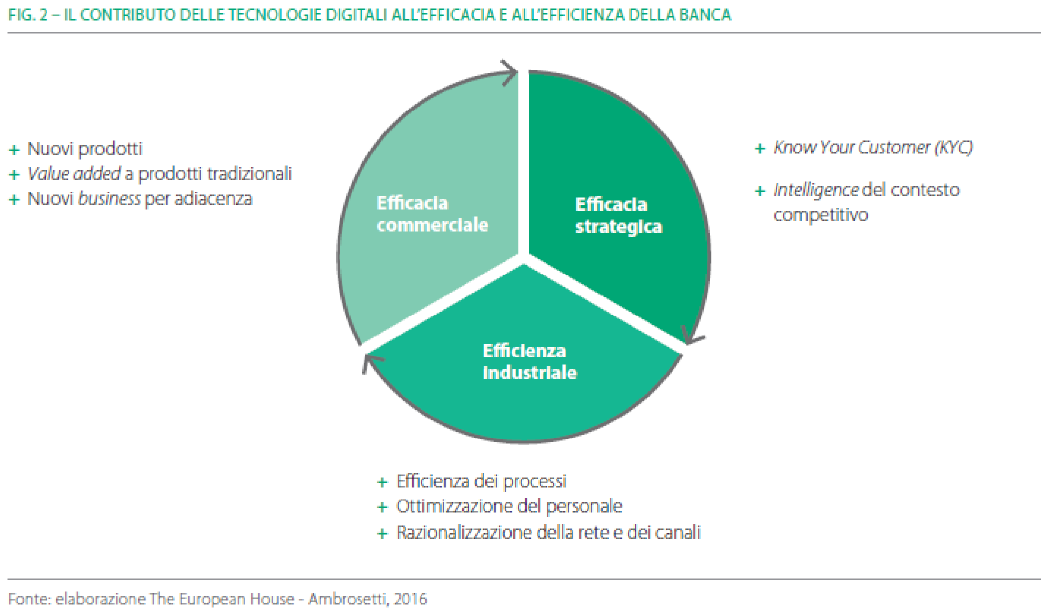

Figura 4. Technology Contribution to bank efficiency and efficacy. Source: Ambrosetti - HP

- Strategic Efficacy defined as the procurement of the Know your customer practices. This practices known as the financial due diligence is related with the collection of customer valuable information such as professional and personal behavioral data. This information entitle the bank to evaluate customer risk and perform a better Bank – Customer relationship.
- Industrial Efficiency due to the integration of digital platforms allowing the banks to reduce operational and back office costs. Higher efficiency could be got through automated solutions on back office activities (real time access to customer data and the reduction of physical channel usage). Human resources Optimization through the update of the personnel digital capabilities on a continuous improvement basis. This optimization takes into account the re-distribution of the human resources inside the organization identifying which processes can be done merely through digital. Rationalization of channels and network with changing the role of the branches, clustering them for different roles.
- Commercial Efficacy on the Market launch of new products and services. New technologies allows the banks to develop new products in order to create new revenue streams. The tehconological contribution could be understood as one of the principal activities to create added value for banks.

Inside the main aspects of the Digital transformation of banks, three concepts related with added value creations can be identified. The increase in revenues through the creation of new revenues streams, the reduction of costs and the proximity to the client perform as important concepts that constitute the base for the creation of value for bank shareholders. These concepts are totally related with the tangible and intangible benefits created by the implementation of innovative mobile banking services.

2.2.3. The Future of Banking: Four Scenarios

Bank NXT define the bank of the future in 4 different scenarios depending on the decision towards the business model adaptation process with digital and the interaction with the new non banking players[8].

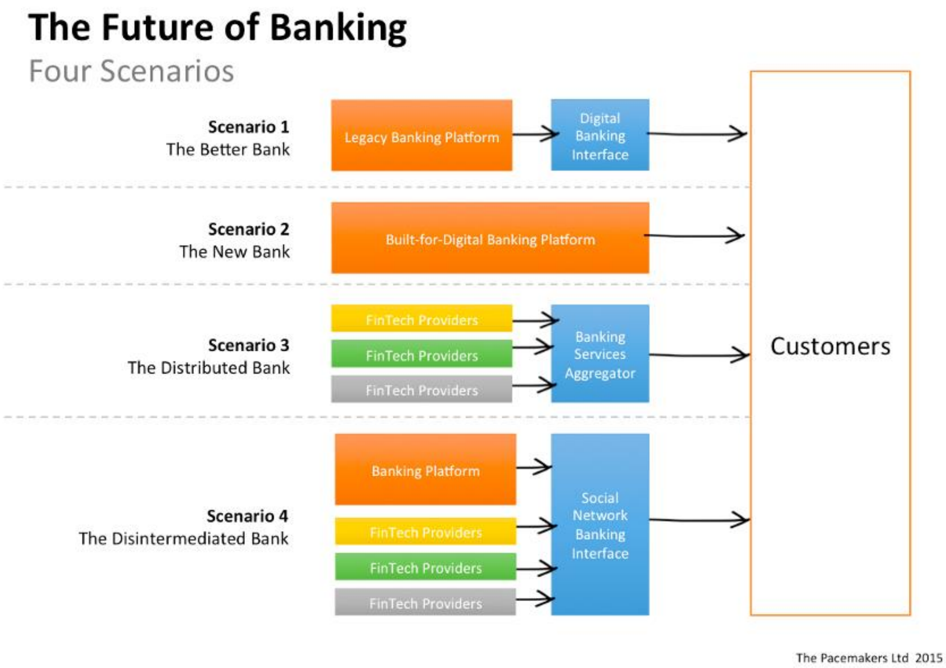

Figura 5. The future of banking: Four Scenarios. Source: BankNXT

In the first scenario (The Better Bank), banks realized that customers see the digital as the main engagement mode with the bank. In this order of ideas, incumbent banks changed their IT processes, delivered new offers and

[8] Hatami A (6/10/2015) *The Future of Banking: four scenarios*. BANKNXT. http://banknxt.com/53478/future-banking-scenarios/

repurposed the way banking was done. Activites such as the repurpose of branches in order to address customer new requirements made the bank able to retain most of its customers. Examples of this scenario includes banks such as Wells Fargo, Societe Generale, Barclays Lloyds Bank.

In the second scenario (The new Bank), due to the impossibility of the incumbents to match the customer digital needs, a new space for a different business proposition in the field arrived. The new players perform as a new full service bank specific for the digital needs of customers. The products and services offered are similar to those of the incumbents, however, this processes are performed on a more efficient and cheaper basis. Examples of this scenario are online banks such as Fidor and Atom.

The third scenario (The Distributed bank), represents the effects of the Fintech revolution in which different type of non-banking businesses arrive to offer better banking services. This new type of business search to aggregate this several services on a one interface for the customer. An example of this is Mondo (Monzo).

The fourth scenario (The disintermitiated bank) represent the disenchantment of customers of the traditional banking and the increasingly preference for social media turning the banks into an utility in order to provide financial services without owning the customer channel. Examples of this are Apple pay, Facebook Payments and Amazon.

The analysis of the added value creation in this document reflect mainly the scenario number one in which the incumbent bank realized the importance of become more digital and adjust its business model.

2.2.4. Innovation in the Mobile Banking Sector

Nowadays, the arrival of new non-banking players that found a business opportunity in the evolution of financial services, drove banks into a difficult situation. The incumbents of this market are facing certain customer segments for which the adoption of digital is not anymore a plus. In fact, is sometimes the decision variable in the moment to choose a financial service. At the same time, this new players arrived with a fully digital offer perfectly suitable for the adoption of this customer segment. Due to a lower cost structure, this new services have the possibility to include a customer segment that was outside the banking panorama. The definition of this situation matches with what so called a 'Disruptive Innovation'.

"Disruptive Innovation describes a process by which a product or a service takes root initially at the bottom of a market and then relentlessly moves up market, displacing established competitors"[9]

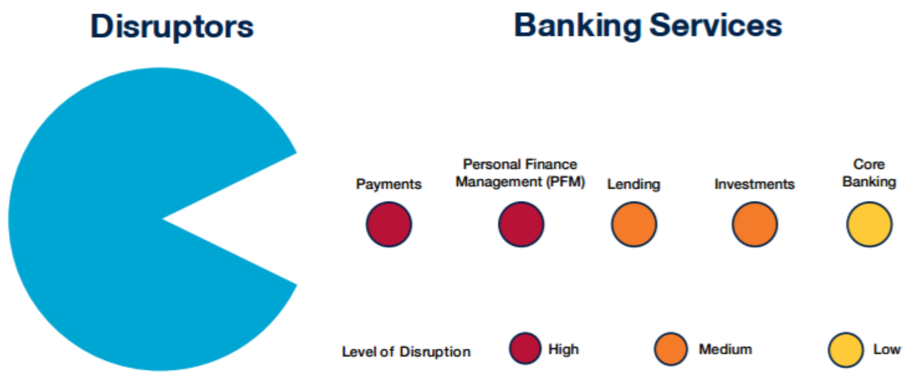

Figura 6. Disruptors in banking industry. Source: Capgemini

As described by Capgemini, on its Top Trends 2016 report, Payments and Personal Financial Management are the services in which Fintechs arrived and revolutioned[10]. In fact, companies like Moven found its success with the design of a Personal Finance Management Tool that can be embedded on Mobile Banking App of any bank in order to entitle customers with finance health self-advisory. In this case, the entrant found a business opportunity supporting the bank on its operations. However, in some cases, the entrant found a business opportunity replacing the action of banks creating value for its own organization. This is the case of Mobile Payment services such as Apple Pay.

This is how, in order to innovate, Banks can take different roads towards a successful adoption of mobile to their traditional business models.

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[9] Mueller R (25/06/2014) *Disruptive Innovation in Banking.* The Financial Brand. https://thefinancialbrand.com/40693/disruptive-innovation-banking-introduction/

[10] Capgemini (2016) *Top 10 Trends in Banking in 2016*. Capgemini. https://www.es.capgemini.com/resource-file-access/resource/pdf/banking_top_10_trends_2016_7.pdf

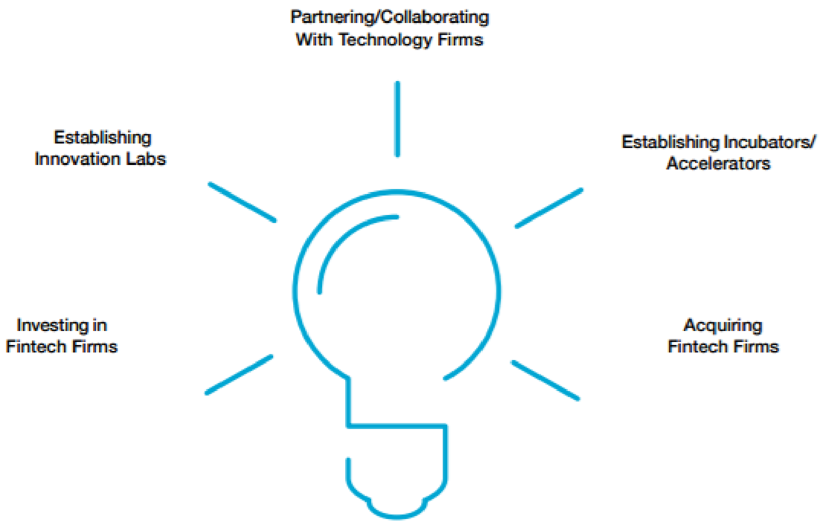

Figura 7. Approaches to Drive Innovation in Banking. Source: Capgemini

Investing, acquiring or building partnerships in Fintech Firms are suitable solutions for incumbent banks in order to remain competitive with the arrival of fintech companies. This decision of investing in companies that perfectly could play as potential substitutes represent an opportunity to join forces and accelerate the digital transformation of the bank generating value for both parties. According to an study of PwC regarding this topic, about "83% of the Financial Services executives on their sample believe that part of their business is at risk of being lost to stand alone FinTech companies, 61 % of financial services clients will be using mobile applications at least once a month to access financial services and 25% of retail banks will replace legacy online/mobile banking systems through startup providers by the end of 2019."[11]The availability of emerging fintech startups in the banking panorama make easier for banks to assess the build or buy decision for the development of digital solutions that allow them to stay competitive in the market.

[11] Pacifico C (4/10/2016) *How traditional banks should invest in and benefit from fintech startups* . Centric Digital. https://centricdigital.com/blog/digital-transformation/how-traditional-banks-should-invest-in-and-benefit-from-fintech-startups/

Regarding the establishment of Innovation Labs and Accelerators, this are spaces designed to allow staff and customers to interact with innovative solutions and receive real time feedback. Innovation Centers such as StandardBank Playroom, a 20,000 square feet space created to solve customer real life situation on a collaborative innovation basis allows the bank to have an outside in view. As said by Vuyo Mpako, Standard Bank Head of Innovation “The best ideas rarely come from behind a desk or an imposing meeting room”.

2.3. Case Studies Research

In order to identify the success of Mobile Banking Services implementation on a worldwide basis and the shareholder value created after its implementation, a state of the art research took place taking into account two different activities with the aim of support what is explained chapters before.

The two activities were carried out simultaneously with the aim to bring out different possible case studies coming from different sources. Taking into account that the information disclosure in this topic is up to the organization, there was no certainty on the first stages of the research that the data searched was going to be found. After the research period, 10 cases were found showing the different ways in which the introduction of an innovative service creates value for banking shareholders. The results shows that the value creation tree proposed encompasses the different aspects of the benefit creation for shareholders on a bank.

2.3.1. News Press Release

The NewsPress Release activity consist on a weekly monitoring of the most important press agencies worldwide, consultancy companies websites and academic reports in order to get the most up-to-date information regarding the banking sector in terms of Mobile Banking innovation. The aim of this activity consisted in a continuous checking process of the main news information found on the web in order to wide open the chance of finding successful case studies of mobile banking value creation for shareholders. In some cases, valuable information was founded on websites different that the most important press agencies. However, taking into account that the study was structured on a worldwide basis, this information sources take a lot of value in order to gather valuable information from local information sources.

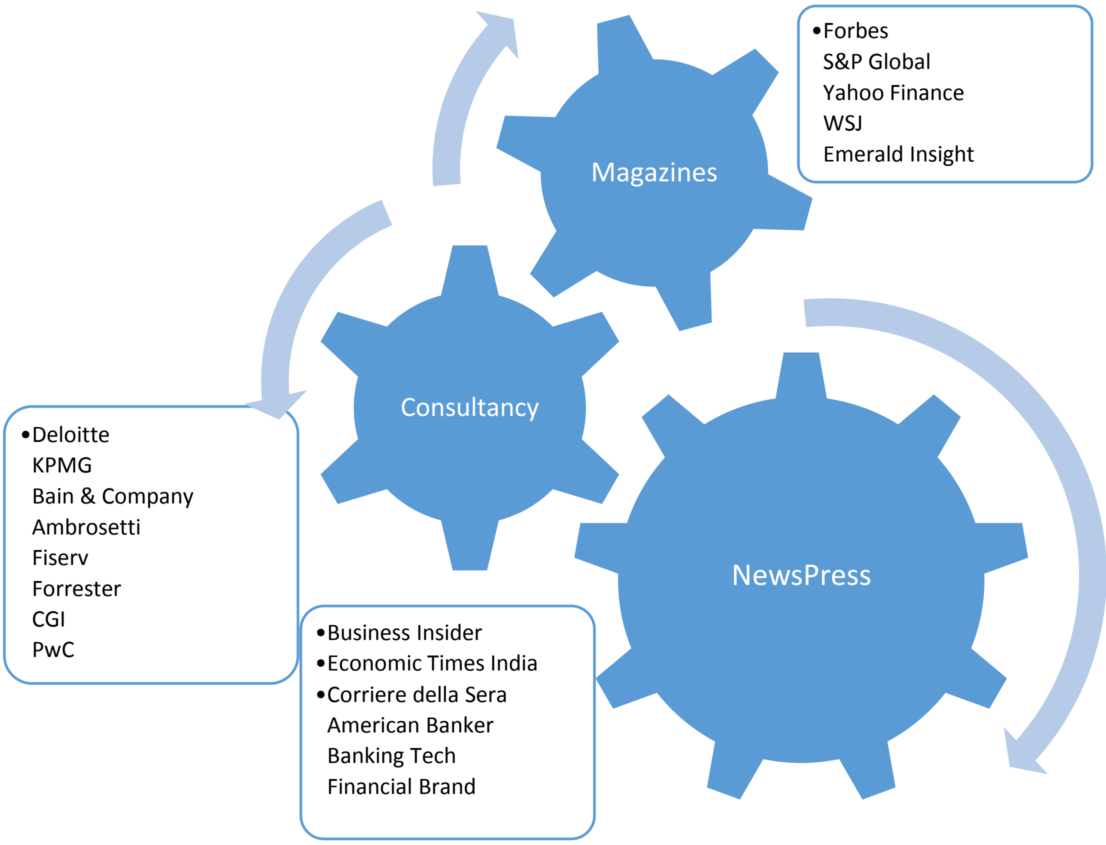

Figura 8. Information sources for case studies research

As the main press agencies embrace different topics regarding the banking sector, topics like API integration and banking regulation trends gave and exceptional broad view about the futures trends of the Mobile Banking sector which is in continuous change.

2.3.2. Indicative Banking Sample

The second activity was the creation of a banking institution sample under the criteria of their innovation promptness and size. The sample was built in two main steps that brought a list of banks that performed as a hint for the case studies searching process. The first step required the research for the various innovation awards regarding the banking sector around the world. Following previous studies in the field[12] and research on the web, the institutions took into account are as follows:

- Retail Banker International[13]
- BAI[14]
- Javelin Strategy and Research[15]
- Global Finance[16]
- CANSTAR[17]
- BankingTech[18]

After this research, a total of 430 innovation awards given to different banking institutions around the world were gathered. This sample took into consideration the awards give between 2014 and 2016.

The second step, following previous studies in the field, took into account the Accuity 50 Top banks in the world in terms of Size.

Having this two steps done, the final bank institution database took into account the entire sets of institutions found in the two steps without overlapping. Its important to highlight that the usage of this bank institution database is merely indicative as the research is not following any restriction for the case study identification.

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[12] Snuono N. (2014) *Mobile Banking: Un'analisi dei servizi innovativi internazionali*. Milano: Politecnico di Milano

[13] Retail Banker International (2014) Retail Banker International Awards. http://www.retailbankerinternational.com/event/retail-banker-international-awards/

[14] BAI (2016) *BAI- Infosys Finance Global Banking Innovation Awards* 2014 . Hamilton: BAI. https://www.bai.org/globalinnovations

[15] Javelin Strategy & Research (2014-2016) *Javelin Award Winners* . Pleasanton : Javelin Strategy & Research. https://www.javelinstrategy.com/content/javelins-awards

[16]Global Finance (2014-2016) *Best Banks and Financial Rankings*. New York: Global Finance. https://www.gfmag.com/awards-rankings/best-banks-and-financial-rankings/

[17] CANSTAR (2015) *Innovation Excellence*. Australia: CANSTAR. https://www.canstar.com.au/current-ratings-awards/

[18] Banking Technology (2016) *Banking Technology Awards*. London: Banking Technology. https://awards.bankingtech.com/

3. Added Value Tree

The concept of added value is subject to different interpretations taking into account that every sector, company and individual objectives are different. In this order of ideas, the Added Value tree proposed in this chapter aims to unify this concept under general characteristics of the banking sector present nowadays.

In the Diagram, attached in the Annex A, the value added is initially divided into two different kind of benefits (Tangible and Intangible). The Introduction of IT bring both accountable benefits ,such as higher profit margin and Non accountable ones such as an stronger brand identity.

Regarding the accountable benefits, the value tree is structured in order to translate them into easier KPI's related with the Return on Investments, growth of clients base and maximization of product portfolio. In this order of ideas, this category is divided into revenues and costs. The introduction of a mobile banking innovative service increase revenues due to the expansion of the client base, the increase in the cross selling activity completing the portfolio of products and the ability to retain valuable customers. Regarding the cost structure, the efficiency of the sales team and the reduction of On Boarding costs in order to expand the client base represents an opportunity to increase the profit margin. This efficiency is associated with the digital transformation of the bank that allows to automate standard processes. This automation gives the opportunity to reorganize the structure, reduce costs and increase overall industrial efficiency.

In relation with the non accountable benefits, the value tree encompasses two main concepts related with the added value that an innovative mobile banking service could bring to strength customer loyalty. The brand equity, with its 5 dimensions is very important for a banks nowadays. New Players are arriving in the sector and because of technology itself, a fast changing behavior is present among the customers. If a customer feels part of a brand because he/she identifies with it, then, the bank have to find the way to make it grow. Checking levels of Customer experience is crucial for the solidness of the client base.

All of this could be rejoined with the concept of Customer Loyalty that will be addressed in this chapter.

"Mobile technology can support an organization's activities throughout its value chain (Barnes, 2003) and impact the organization's competitive advantage (Porter and Millar, 1985). Mobile technology can provide a number of benefits to organizations, such as connectivity, flexibility, interactivity, and location awareness. These benefits can help to increase the efficiency and effectiveness of an organization's value activities, and to transform business processes (Barnes, 2003)"[19]

Benefits given by the adoption of Mobile services for a financial institution can be represented in two main categories: Tangibles and the intangibles enabled by this technology[20]. The first category focuses in the financial performances resulting from the investments in IT that can be perfectly measured through KPI as cost savings. Instead, Intangibles are not reportable for accountable purposes and are related with business process and relations including customer services and competitive advantages.

Both Tangible and Intangible benefits represents a way in order to arrive to added value creation definition. However, they have to be mixed in order to build the most important asset of a bank-customer relationship: Customer Loyalty.

Customer Loyalty is related with the committed behavior of customers repeating a purchase from its preferred brand overtime. High levels of customer loyalty impacts on the bank NPS (Net Promoter Score). The difference in product take-up between promoters (NPS between 6 and 10) and detractors (NPS below 6) of their primary bank is a positive 14 percent on developed countries and 10 percent on developing ones[21].

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[19] Sheng H, Fui-Hoon Nah F, Siau K (2005) *Strategic Implications of Mobile Technology: A Case Study Using Value-Focused Thinking*. Department of Management, University of Nebraska-Lincoln CBA 209, University of Nebraska-Lincoln, 68588-0491, Lincoln, Nebraska, U.S.A. https://pdfs.semanticscholar.org/76a5/c6fc2f8412f9b86320cfe200c7f904a4645e.pdf

[20] Sheng H, Fui-Hoon Nah F, Siau K (2005) *Strategic Implications of Mobile Technology: A Case Study Using Value-Focused Thinking*. Department of Management, University of Nebraska-Lincoln CBA 209, University of Nebraska-Lincoln, 68588-0491, Lincoln, Nebraska, U.S.A. https://pdfs.semanticscholar.org/76a5/c6fc2f8412f9b86320cfe200c7f904a4645e.pdf

[21] Bain & Company.(2013) *Customer Loyalty in Retail Banking: Global Edition 2013*. Bain & Company. http://www.bain.com/publications/articles/customer-loyalty-in-retail-banking-2013.aspx

3.1. Tangible Benefits

In this category, the main performance indicator to analyze is the ROI (Return on Investment) which Forrester, American independent technology and market research Company, suggests that the main drivers influencing its behavior due to a mobile banking investment are mainly three: Cost Reduction, Customer Retention and Cross- Selling products[22]. For the purposes of this study, these three impacts will be reorganized taking into account if they are revenue or Cost affecting in order to simplify the understanding of the approach. These two elements are incredibly important for the analysis of how convenient an investment in Mobile Banking could be beneficial for the financial performance of a bank. Due to the impossibility of gathering the sufficient data to analyze directly the ROI, a good decomposition of the main drivers that affects the ROI takes high importance.

3.1.1. Revenues

In relation to the management of revenues streams, following the main aspects of a digital transformation, the analysis of the customer behavioral data and the creation of new products and services that match the customer needs, are the main pillars for the creation of new revenue streams.

The management of revenue streams in the value tree is proposed following the idea that a bank has its customer base that is valuable. It represents the source of revenues. This customer base, due to the arrival of technology to the banking sector, is dynamic. Banks experiencing the arrival of new players, new business models and changing customer preferences due to the advances of technology have seen affected profitability and margins.[23] Customer's gets in, customers stays, customer leave. In this order of ideas, is really important to monitor how

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[22] Forrester (2011). *What is the ROI of Mobile Banking?* . American Banker. http://www.americanbanker.com/bulletins/-1037534-1.html

[23] Haenlein M, Kaplan A, Beeser A (2007) *A model to determine Customer Lifetime Value in a Retail Banking context*. European Management Journal Vol. 25, No. 3, pp. 221–234. http://www.michaelhaenlein.eu/Publications/Haenlein,%20Michael%20-%20A%20model%20to%20determine%20customer%20lifetime%20value%20in%20a%20retail%20banking%20context.pdf

to deal with this three type of customer behavior in order to create value. This three type of customer decisions regarding the relationship bank-customer could be represented in three questions that the bank should try to answer considering a dynamic and competitive scenario:

- Why a customer choose my offer instead of choosing a potential substitute?
- Why is my customer staying if there are several offers in the market that might be more attractive and the changing process is considered easy due to technology?
- Why my customer is not satisisfied with my product and prefer to change to another one?

After considering this three questions, is important to assess which are the main KPI that could reveal if one particular action of the bank, in this case , the introduction of an innovative service in mobile banking, is supporting the creation of value from the revenues side. The importance that customers give nowadays to digital have to be translated on the willingness of companies to delive innovative solutions and products in order to attract and retain customers through a variety of channels[24].

The creation of value, regarding revenue streams could be classified in three main cathegories

- Creation of New banking Relationships
- Cross – Selling Products
- Customer Retention

3.1.1.1. Creation of New Banking Relationships

New banking relationships are presented by the customers that are still not enrolled in the banking sector and are willing the engage with a banking product for the first time. Since the beginning of customer involvement with

[24] Merriman N (2017) *From banks to banking –a new era of consumer focused innovation in financial services*. MediaPlanet. http://www.ukfintech.com/future-of-fintech/from-banks-to-banking-a-new-era-of-customer-focused-innovation-in-financial-services

a banking product, the concept of customer loyalty which is the main goal embracing the entire value creation takes the most important role in the entire lifetime of the customer relationship. This particular customer cluster is subject of extra marketing efforts carrying costs that varies depending on the channel used in order to perform either the approaches. Studies reveal that a new banking relationship carries around 200 USD costs making the new customer retention very important for the profit margin dynamics. Annual Churn rates on new customer lay around 20 to 25% on the first year[25]. Even that the new banking relationships represent a source for revenues enhancing and an opportunity to create new lifetime customers, due to the high churn ratio and the high On boarding costs this strategy cannot be alone in order to increase revenues.

Number of new customers

This driver takes into account the amount of new customers acquiring a product from a particular bank for the first timeT his customer could come from other banking institutions or from a customer segment known as non-banking customers. This driver have to be analyzed under a consistent period and could be easily benchmarked with other banking institutions taking into account similar parameters.

Even that the dynamics for the monitoring of the value created from the acquisition of new customers involve drivers such as On Boarding Costs, Lead to Sales, NPS and New Customer Churn Ratio, this are proposed to be analyzed in the following categories in order to simplify the presentation of each particular value creation activity.

3.1.1.2. Cross-Selling Activity

[25] Lax H (2016) *New customer Retention: A fundamental in Retail Financial Services*. Customer Think. http://customerthink.com/new-customer-retention-a-fundamental-in-retail-financial-services/

Cross-Selling products are defined as technique that pushes a customer to supplement his or her initial purchase with products that complement it[26] . In terms of Cross-Selling products, the benefits are represented by how many additional services are actually gotten by the customers through the Mobile Banking channel. This enhances the revenues of the bank and raises the portfolio offer, sometimes, using the customer's behavior data taken from the mobile banking use pattern. "Cross-Selling product rates are directly enhanced by customer loyalty"[27]

Cross Selling Success Rate

This indicator reveals the number of successful cross sells over the number of cross-selling attempts.

Average revenue per customer

Amount of revenue derived from a customer over a time frame.

In order to follow the value creation of Cross-Selling products, the number of cross selling success rate reveal if the introduction of innovative mobile banking services to the incumbent clients is enhancing the revenue existing streams without the effort of getting clients from new clients.

In order to introduce the importance to retain the clients is important to know that acquiring a new customer could represent between 5 to 25 times the cost or retaining one[28]. This consideration works either for the efforts of cross selling to

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[26] Cohn C (15/05/2015) A Beginner's guide to upselling and Cross-Selling. Forbes https://www.forbes.com/sites/chuckcohn/2015/05/15/a-beginners-guide-to-upselling-and-cross-selling/#4d28276c2912

[27] Bain & Company.(2013) *Customer Loyalty in Retail Banking: Global Edition 2013*. Bain & Company. http://www.bain.com/publications/articles/customer-loyalty-in-retail-banking-2013.aspx

[28] Gallo A (29/10/2014) *The value of keeping the right customers*. Harvard Business Review. https://hbr.org/2014/10/the-value-of-keeping-the-right-customers

existing customers or to the ability to retain the actual customer base. Enhancing the customer Lifetime Value with new products represents a big opportunity for revenue increase on a sustainable basis.

3.1.1.3. Customer Retention

Under this perspective, customer retention takes relevance not just in order to enhance revenue streams taking into consideration that are the bridge in order to perform cross-selling activities and Cross-Selling product rates are directly enhanced by customer loyalty.[29]. Also for the reduction of costs related with the cost of new customer acquisition.

In order to monitor the success of implementing a mobile banking innovative service on an incumbent customer basis, three measures could be taken into account

Lifetime Value of the Customer

Defined as measure of the amount of profit one can expect from a customer over the lifetime the business relation takes place[30].

Net Promoter Score

Defined as an index that measures the willingness of customers to recommend you to other potential customers. [31]

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[29] Bain & Company.(2013) *Customer Loyalty in Retail Banking: Global Edition 2013*. Bain & Company. http://www.bain.com/publications/articles/customer-loyalty-in-retail-banking-2013.aspx

[30] Maycotte, H.O (25/08/2015) *Customer Lifetime Value – The only metric that matters* .Forbes. https://www.forbes.com/sites/homaycotte/2015/08/25/customer-lifetime-value-the-only-metric-that-matters/#d57be1838761

[31] Quigley, W. (2014) *Guide to the 12 KPI's for Sales enablement*. SEISMIC. https://manalskhan.files.wordpress.com/2014/08/12-must-have-kpis-for-sales-enablement-vfinal.pdf

Customer Churn Rate

Defined as number of customers who ends their businesses with an organization over a specific time period.

These three measures constitute, in the banking sector, a way to determine if return on a particular service is effective in order to keep the customers base and build customer Loyalty. Mobility enhanced by technology, gives the possibility to customers for changing fast making customer loyalty a target[32]. Frederick Reichhled of Bain & Company states after his research that an increase in customer retention of 5 % produces an increase in profits by 25% to 95%[33]

Customer retention problems have its roots on the customer acquisition[34]. The acquired customer have to represent a valuable opportunity over time rather than lost effort. The main goal is to bring-in the right customer in order to build customer loyalty through time.

3.1.2. Costs

The contribution to the ROI increase regarding optimization of resources is mainly related with the efficiency in the cost structure. Following the digital transformation theory of a bank, one of the pillars in order to achieve this goal is the industrial efficiency. This aspect of the bank digital transformation process takes into account important actions such as process efficiency, personnel optimization and channel rationalization. This three actions are related with practical aspects such as the usage pattern of the different channels, the sales process efficiency and the Customer On-Boarding processes and costs. All of them represents resources that have to be allocated efficiently in order to contribute to enhance margin.

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[32] Bain & Company.(2013) *Customer Loyalty in Retail Banking: Global Edition 2013*. Bain & Company. http://www.bain.com/publications/articles/customer-loyalty-in-retail-banking-2013.aspx

[33] Gallo A (29/10/2014) *The value of keeping the right customers*. Harvard Business Review. https://hbr.org/2014/10/the-value-of-keeping-the-right-customers

[34] Gallo A (29/10/2014) *The value of keeping the right customers*. Harvard Business Review. https://hbr.org/2014/10/the-value-of-keeping-the-right-customers

3.1.2.1. Sales

In the case of Sales, the efficiency of the Sales team in order to achieve results represents an important driver in the costs structure. Activities such as front office represents a really important opportunity in order to create value in different aspects. The ability of the sales team to get on the right customer, the one that is valuable, influence the dynamics of other value creation components such as revenues and customer experience.

Sales Cycle

The sales Cycle is defined as the number of days between the initial contact made with a (soon to be) customer to the final transaction that completes the sale.[35]

Lead to sales

Defined as the number of leads that become customers.

This number of days, in the cost structure, are translated into associated cost of resources employed in order to realize the sell. In fact, the ability of the sales team to drive a different customer experience or to use different channels for the selling process impact in the number of days that could be employed in order to perform a sale. As said before, the acquisition of the right customer for the right product segment will also affect the retention rates and finally the customer loyalty, which is directly related with the added value creation.

In this order of ideas, customer clustering and big data analysis represent and enormous opportunity for the optimization of resources. Standardized banking products that do not require high-skilled human resources in order to perform the process are perfectly suitable for being automated. This sales efficiency optimizes the allocation of resources minimizing costs associated with a sell.

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[35] Quigley, W. (2014) *Guide to the 12 KPI's for Sales enablement*. SEISMIC. https://manalskhan.files.wordpress.com/2014/08/12-must-have-kpis-for-sales-enablement-vfinal.pdf

3.1.2.2. On Boarding

On boarding a client represents an investment and a maintenance costs that is expected to be recovered with the sales produced. As much efficient and less costly is the on boarding process, the lower the investment in the client relationship and higher the margin. Due to this reason, several innovative services are using mobile channels to delay the use of human resources for activities that could be perfectly performed autonomously by the client. This type of process are perfectly suitable to be performed by the client on its own without impacts on customer services levels. Examples of this type of services are the application for a Loan through mobile phone. As soon as the client perceives the intervention of a human being for interaction as important, the bank introduces it, avoiding in this case the initial value of the human resource for the entire process.

(Cost of Customer Acquisition)

Following with another important cost driver to take into account is the On Boarding Costs, which can be understood through the COCA (Cost of Customer Acquisition) that is the cost associated in convincing a customer to buy a product/service and is inclusive of the research, marketing, and accessibility costs.[36] In other words, this are the costs that the bank should incurr in order to have skilled employees that will create sales opportunities.

3.1.2.3. Customer channel usage

Regarding the different channels in order to reach the client, a decisive driver to take care of is the estimated cost of usage. Due to the widespread use of mobile handsets and its rapid adoption in society, Mobile channel is the one with the lowest costs[37]. Therefore, this driver controls the value creation through the allocation of customers to

[36] Quigley, W. (2014) *Guide to the 12 KPI's for Sales enablement*. SEISMIC. https://manalskhan.files.wordpress.com/2014/08/12-must-have-kpis-for-sales-enablement-vfinal.pdf

[37]Deloitte. (2010).Mobile banking: *A Catalyst for improving bank performance*. Deloitte. https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/Process/mobile_banking_bank_performance.pdf

the different channels and its related costs driven by the number of customers using each channel (Branches, Call Centers, Mobile) and the effectiveness of this channels through the percentage of channel Usage regarding the revenues generated. The last one allows the bank to understand if it's suitable to shift between channels or to segment products taking into account client preferences and benefits.

3.2. Intangibles

Intangible benefits are mainly related with customer services and competitive advantage (strategy) which creates economic value that are not accountable. The need to increase brand equity by building and maintaining customer-brand relationships can be done by valuing the issues that customers value the most in order to increase their emotional attachments to the brand.

3.2.1. Brand Equity

Brand equity is generally defined as the marketing effects, or the value added to the product, specifically attributable to the brand (Keller, 1993; Rangaswamy et al., 1993). In other words, brand equity is the difference between the utility of the substantial attributes of a focal branded product and the total utility of the brand (Yoo et al., 2000). Brand equity can be considered a mix of both customer-based brand strength (equity) and financial brand equity (Barwise, 1993). Financial brand equity refers mostly to the value of a brand for accounting purposes, while customer-based brand equity refers to the customers' familiarity and unique associations with the brand in memory[38].

Brand Image

[38] Wang, W. Li, H. (2012) *Factors influencing mobile services adoption: a brand equity perspective.* Department of Industrial and Information Management, National Cheng Kung University, Tainan, Taiwan. Institute of Information Management, National Cheng Kung University, Tainan, Taiwan. Emerald Insight. http://www.emeraldinsight.com/doi/pdfplus/10.1108/10662241211214548

An overall perception of a brand derived from the brand associations held in consumer memory.

Brand Loyalty

A deeply held long-term commitment to consistently repurchase or patronize a product/service of the same brand, free from the effects of situational factors and marketing efforts that have the potential to result in switching behaviors

Perceived Quality

A consumer’s evaluation of a recent consume experience regarding a product’s overall excellence

Brand Association

Anything, including attributes of a product/service, reputation of a company, and characteristics of product/service users, which linked in consumer memory to a brand

Brand Awareness

The strength of the trace of a brand in consumer memory, as reflected by the consumers’ ability to identify the brand under different conditions

Market Behavior

The condition of a brand in the market, which can be measured by the market share, the relative market price (compared to competitors), and the distribution coverage of the brand (level of accessibility of consumers with regard to the product)

3.2.2. Costumer Experience

In a high mobility sector enhanced by the presence of technology, the customer experience takes a big important role in gaining customers trust and establish emotional connections. However, the adoption of certain service might not be a delightful, which enhance customer satisfaction. A customer experience represents an important driver to tackle in order to lower attrition rates and enhance customer loyalty. Nowadays, a customer can jump between institutions easily due to the mobile channels if its experience with a certain one is not fulfilling its needs. Technology ensures competition and banks know that having standard mobile banking services is not anymore a source of competitive advantage. Mobile Banking services represents an opportunity to differentiate from competitors and understand the customer through data collection.

Voice of Customer

Voice of Customer is an Element of Six Sigma approach that allows to quantify what customer want. This process mainly allows to transform the information relating customer and product into CTQ (Critical to Quality) measures. This CTQ represents the customer satisfaction requirements related with a product or service. Voice of customer works as a way to gather customer expectations taking into consideration the most benefit/affected actors. Then , the process needs to hypothzise which could be the the VOC for each type of customer group. After interviewing and gather information, CTQ's are determined by the translation of customer language into measurable responses.

ECSI : European Customer Satisfaction Index

European Customer Satisfaction Index (ECSI) is an analytical tool, designed to provide a sound basis for selecting the right marketing strategy. With ECSI the company can find out which factors are most important to the creation of customer satisfaction and loyalty.[39]

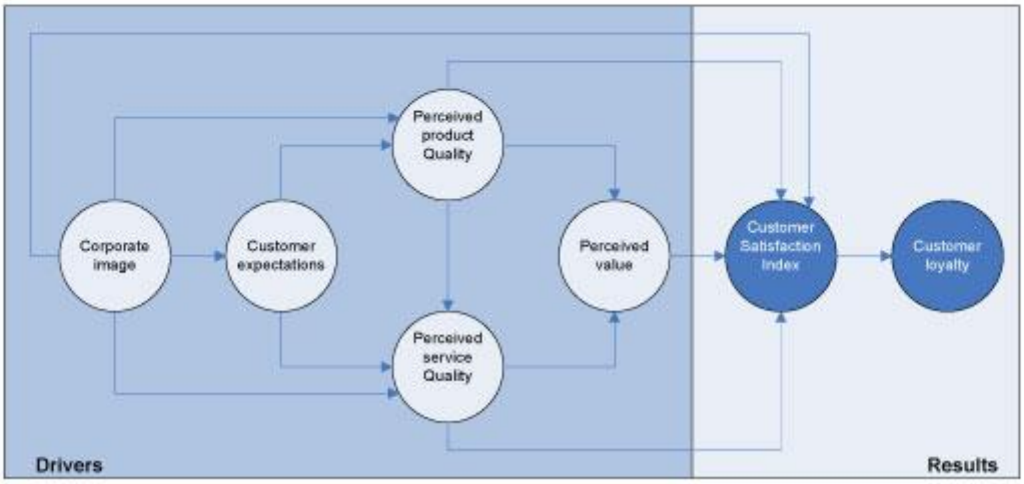

Figura 9 ECSI Model. Source: Rovaha Marketing, strategy and management

The ECSI the loyalty measures include likelihood of retention, likelihood of recommending the company or brand, and whether the amount customers are likely to purchase will increase which mainly represents the dimensions of Brand Equity. ECSI not only reflect the behavior of intangible benefits , it has an incredible meaning that relates aspects like New banking relationships because of the recommendations to new bank customers, Customer Retention and the possibility to raise cross selling products that are mainly tangible benefits.

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[39] Relation Monitor. *European Customer Satisfaction Index. An international tool for optimizing customer satisfaction and loyalty*. Relation Monitor. http://relationmonitor.dk/uk/analysis/about_our_research/effektprofil_analysis/european_customer_satisfaction_index_ecsi

4. Case Studies

As a result of the research, 10 case studies where found following the criteria of having solid and explicit numerical data to understand the added value creation for shareholders. These case studies were also analyzed in order to understand which were the main drivers proposed by the added value tree that shareholders should analyze in order to monitor the creation of added value. This analysis will be introduced as Value Creation Dynamics later on.

The value creation as said in the description of the Added Value Tree have different dimensions and different ways to be analyzed. However, after the revision of the literature and the revision of the state of the art, in every service the drivers of interest differ due to the different ways of value creation.

4.1. Customized Interface

4.1.1. Description

Customized interface, introduced by JP Morgan Chase Bank in the USA offers to the user the possibility to personalize the Mobile Banking app interface among other automatic changes such as

- The application Home Screen background changes depending on the geographical location of the user. The image displayed relates the position with one of the 18 preset images that shows typical sightseeing places.

- The welcome message on the home screen depends on the weather mood of the day
- The language set up for the app follows the one already set on the device.

4.1.2. Added Value Creation

Chase introduced the service under these particular conditions on 2014 as an update for the existing of the mobile banking app[40]. After the introduction of these customize features, Chase achieve a raise in the score of the Chase Mobile Banking App on ITunes Store arriving to 4,5 Stars[41]. This score was an outstanding achievement taking in to account that this was considered the highest score gotten by the App in its entire history.

4.1.3. Value Creation Dynamics

Given the results of the implementation, the direct relationship with the Value Added Creation is strongly linked with the creation of intangible benefits, more specifically with the Brand Equity dimensions. The association with personalization within their mobile banking experience could influence the perception of the brand (Brand Image) and the delightfulness of this feature could enhance the ability of the customer to remember the brand (Brand Associations) just because of its innovative characteristics.

4.1.4. About JP Morgan Chase

"JPMorgan Chase & Co. (JPMorgan Chase), incorporated on October 28, 1968, is a financial holding company. The Company is engaged in investment banking, financial services for consumers and small businesses, commercial banking,

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[40] Chase Bank. *Chase Mobile Banking*. https://www.chase.com/online/digital/mobile-banking.html

[41] Walsh M. (18/04/2014) *Chase updates app to personalize mobile banking.* MediaPost. http://www.mediapost.com/publications/article/223964/chase-updates-app-to-personalize-mobile-banking.html?edition

financial transaction processing and asset management. JPMorgan Chase's activities are organized into four business segments, as well as a Corporate segment. The Company's segments are Consumer & Community Banking, Corporate & Investment Bank, Commercial Banking and Asset Management. The Company's Consumer & Community Banking (CCB) segment serves consumers and businesses through personal service at bank branches and through automatic teller machines (ATMs), online, mobile and telephone banking. CCB is organized into Consumer & Business Banking, Mortgage Banking (including Mortgage Production, Mortgage Servicing and Real Estate Portfolios) and Card, Merchant Services & Auto (Card). Consumer & Business Banking offers deposit and investment products and services to consumers, and lending, deposit, and cash management and payment solutions to small businesses. Mortgage Banking includes mortgage origination and servicing activities, as well as portfolios comprising residential mortgages and home equity loans. Card issues credit cards to consumers and small businesses, provides payment services to corporate and public sector clients through its commercial card products, offers payment processing services to merchants, and provides auto and student loan services" [42]

4.2. Augmented Reality Home Loan Application

4.2.1. Description

This service offers the use of augmented reality in order to help customers from the very beginning of a house hunt until the last stages of mortgage loan application. With different updated databases and the smartphone camera, the user is provided with property details such as

- Property potential market price – even if its not for sale
- Property details
- Recent local sales history

[42] Reuters. *JPMorgan Chase & Co Company Profile* http://www.reuters.com/finance/stocks/companyProfile?symbol=JPM.N

- Suburb performance

Users are provided with an In-App calculator that have access to their personal finances allowing the assessment of how much money their able to borrow and the affordability of the repayments.

4.2.2. Added Value Creation

The service was introduced by the Commonwealth Bank of Australia on 2011 and since the launch the bank achieved

- A coverage of the 95% of all residential properties in Australia with a demand of 20,000 property searches per week.[43]
- An accumulated number of downloads of 117,246 on the first 24 weeks with an average of 45 calls weekly to the Commonwealth Bank Home Loans dedicated phone line. [44]

Besides the results of this particular case study, Accenture estates that real estate agents of banks like JPMorgan, Barclays and Hana Bank with similar services realized the outsized influence of homebuyer choice lender[45]. Goldman Sachs believes that augmented reality market will worth 80 Billion US by 2025.[46]

4.2.3. Added Value Dynamics

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[43]Accenture (2015) *The Everyday Bank. A new vision for the digital age*. Accenture. https://www.accenture.com/t20150714T065456__w__/sk-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Strategy_6/Accenture-The-Everyday-Bank-A-New-Vision-for-the-Digital-Age.pdf

[44] Iab Australia (2011) *The CommonWealth Bank property| 2011 IAB Awards Winner*. Australia.Iab Australia.https://www.iabaustralia.com.au/creative-awards/case-studies/item/19-case-studies/1326-the-commonwealth-bank-property-guide-2011-iab-awards-winner

[45] Accenture (2015) The Everyday Bank. A new vision for the digital age. Accenture. https://www.accenture.com/t20150714T065456__w__/sk-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Strategy_6/Accenture-The-Everyday-Bank-A-New-Vision-for-the-Digital-Age.pdf

[46] Oxagile (2016) *Virtual and Augmented Reality to disrupt Banking and Finance.* USA: Oxagile. http://www.oxagile.com/company/blog/virtual-augmented-reality-disrupt-banking-finance/

Taking into account that the introduction of this service created another revenue stream, the drivers that should be monitored are related with the increase in revenues. Therefore, an increase in the number of calls to the Commonwealth Bank Home Loans phone lines demonstrated that New Customers or Existing customers are interested in this new service (Number of New Customers and Existing Customers Cross Selling Ratio). The introduction of an in-between Mobile Banking Step before first contact to the bank from the client side could affect the efficiency of the Phone Banking channel delaying the use of this channel until the last step.

4.2.4. About CommonWealthBank of Australia

"Commonwealth Bank of Australia is a provider of financial services, including retail, business and institutional banking, funds management, superannuation, life insurance, general insurance, broking services and finance company activities. The Company's segments include Retail Banking Services, which provides home loan, consumer finance and retail deposit products; Business and Private Banking, which provides banking services to relationship managed business and agribusiness customers; Institutional Banking and Markets, which services its corporate, institutional and government clients; Wealth Management segment, which includes global asset management, platform administration, and life and general insurance businesses; New Zealand, which includes the banking, funds management and insurance businesses operating in New Zealand; Bankwest, which offers a range of deposit products, and IFS and Other Divisions, which includes the Asian retail and business banking operations" [47]

4.3. Mobile Check Deposits

4.3.1. Description

[47] Reuters. *Bank of Australia Company Profile*
http://www.reuters.com/finance/stocks/companyProfile?symbol=CBA.AX

This service allows customers to make check deposits anywhere and anytime using the smartphone camera through the Mobile Banking app. The deposit is made through the picture delivery of front and back of the check. For customers security, the checks images are not saved on the device. “Bank of America estimate that mobile check deposit takes 2 minutes versus an average of 30 minutes needed using ATM for the same transaction”[48]. Mobile check deposits was firstly introduced by USAA Federal Savings bank in 2009 and nowadays the majority of the Large Scale banks offers this service. However, in order to illustrate its potential also for small financial institutions, the case study chosen to illustrate comes from a banking institution in USA.

4.3.2. Value Added Creation

In the first 13 months after the introduction of Mobile Deposit, the Conestoga Bank experienced[49]

- 10% increase on account openings
- 20% of customer base using Mobile Deposits
- A monthly average of 1,5 MM US in deposits through Mobile Check deposits.

4.3.3. Value Added Dynamics

The results of this initiative in a bank of small dimensions can be easily perceived. An increase in account openings means that the number of new customers enhance the revenues directly. At the same time, the higher usage of Mobile channels decrease the costs per each transaction enhances the operative margin. In relation with the typology of this service that is widely use by the large-scale banks, this service represents sort of a must-have for a banking offer affecting the brand image.

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[48] Bank of America. *Managing your money*. https://www.bankofamerica.com/deposits/manage/mobile-deposits.go

[49]Mitek Systems *Mobile Deposit Case Study Conestoga Bank First mover advantage with Mobile deposit expands customer base and supports profitable growth*. San Diego, CA: Mitek Systems. https://www.miteksystems.com/sites/default/files/Documents/conestoga_bank_case_study_final_0.pdf

4.3.4. About Conestoga Bank

About Conestoga Bank

"As of April 14, 2016, Conestoga Bank was acquired by Beneficial Bank. Conestoga Bank provides personal and business banking products and services. The company's personal banking products and services include various checking accounts; savings and money market accounts, and certificates of deposit; home equity loans and lines of credit, and savings secured loans; mortgages; credit cards and sharing cards; and various tools and resources. Its business banking products and services include small business administration and commercial loans; leasing for business owners and vendors; small business, classic business, and business enterprise checking accounts; business savings accounts; and online banking, remote deposit, and business bill pay services. Conestoga Bank was formerly known as First Penn Bank and changed its name to Conestoga Bank in May 2007. The company was founded in 1987 and is based in Chester Springs, Pennsylvania with locations in Center City and South Philadelphia, as well as Bucks, Chester, Lehigh, Montgomery, Philadelphia, and Delaware counties. Conestoga Bank operates as a subsidiary of Conestoga Bancorp, Inc" [50].

4.4. Online and Mobile Appointment booking

4.4.1. Description

The typology of this service allows personal, business and prospective banking consumers to book appointments in real time directly to branch employee through online and mobile banking. This functionality was firstly introduced in 2012 at BOM Bank of Montreal Online banking and extended to Mobile

[50] Bloomberg. *Conestoga Bank Company profile*. http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=793686

Banking app in 2013[51]. The service enhances the effectiveness of branch employees by maintaining discipline on their Outlook Calendars.

4.4.2. Value Added Creation

On the first six months after launch, Bank of Montreal reached[52]

- Nearly 19,000 appoinments resulting in 8,355 sales
- Half of the appoinments were made through the website
- A project payout of less than 7 months.

Bank of Montreal was awarded with the 2013 Celent Impact award because of its Online Appoinment Booking Initiative[53].

4.4.3. Value Added Dynamics

Based on the reported results of this case study, is possible to interfere that the introduction of the new service raised the possibility to turn a Lead into an actual sale. This assumption is based in the fact that, having said by the bank, the service enhances the effectiveness of the branch employees. The possibility of understanding in advance the needs of the client, reduces the Sales Cycle optimizing the resources at the branch. This two drivers identified in the introduction of this service, clearly, enhances the revenues and makes more efficient the usage of resources which affect in the cost structure of the operation. At the end, this will increase the profit margin that will create value for the shareholders.

4.4.4. About Bank of Montreal

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[51] Meara B (5/4/2013) *Why don't more banks offer appoinments?.* Brentwood, TN: Bank Director.com. http://www.bankdirector.com/index.php/issues/retail/why-dont-more-banks-offer-appointments/

[52] Meara B (5/4/2013) *Why don't more banks offer appoinments?.* Brentwood, TN: Bank Director.com. http://www.bankdirector.com/index.php/issues/retail/why-dont-more-banks-offer-appointments/

[53] Meara B, Greer S (27/02/2013) *Model Bank Awards*. Celent. http://celent.com/system/files/model_bank_awards.pdf

About Bank of Montreal[54]

Bank of Montreal (the Bank), incorporated on March 15, 1995, is a financial services provider. The Bank provides a range of personal and commercial banking, wealth management, and investment banking products and services. The Bank conducts its business through three operating groups: Personal and Commercial Banking (P&C), Wealth Management and BMO Capital Markets. BMO Financial Corp. (BFC) is owned by the Bank. BFC operates through its subsidiary BMO Harris Bank N.A. (BHB), which provides banking, financing, investing and cash management services in select markets in the United States Midwest. The Bank provides a range of investment dealer services through entities, including BMO Nesbitt Burns Inc., an integrated Canadian investment dealer and BMO Capital Markets Corp., which is a securities dealer in the United States.

The Bank serves customers through its wealth management businesses: BMO Asset Management Corp., BMO Nesbitt Burns Inc., BMO Private Banking, BMO Insurance and BMO InvestorLine. The Bank has over 1,500 bank branches in Canada and the United States, and operates internationally in various financial markets and trading areas. The P&C business includes two retail and business banking operating segments, such as Canadian Personal and Commercial Banking (Canadian P&C), and the United States Personal and Commercial Banking (U.S. P&C). Canadian P&C provides a range of financial products and services to customers. The Bank operates over 900 branches and approximately 3,300 automated banking machines across the country. Personal Banking provides customers with a range of products and services, including checking and savings accounts, credit cards, mortgages, creditor insurance, and everyday financial and investment advice. Commercial Banking provides small business and commercial banking customers with a range of commercial products and services, including business deposit accounts, commercial credit cards, business loans and commercial mortgages, cash management solutions, foreign exchange and specialized banking programs.

[54] Reuters. *Bank of Montreal Company Profile* http://www.reuters.com/finance/stocks/overview?symbol=BMO

The Bank's retail and small and mid-sized business banking customers are served through over 600 branches, contact centers, online and mobile banking platforms, and approximately 1,300 automated banking machines across over five states. Personal Banking offers a range of products and services to individuals, as well as small and mid-sized business customers, including deposits, mortgages, consumer credit, business lending, credit cards and other banking services. Commercial Banking provides business customers with a range of banking products and services, including lending, deposits, treasury management and risk management.

4.5. Erica Chatbot

4.5.1. Description

The use of artificial intelligence can bring benefits to banks and credit institutions in relationship with back office, operations, compliance, customer experience, product delivery, risk management and marketing among others[55]. In this case, Erica, the Chatbot proposed by Bank of America, allows the user to interact through In-App written and voice messaging giving automatic suggestions regarding the management of the customers portfolio, even without its requirement. Erica's algorithm takes customer behavior as an input in order to come up with tailored fit solutions for each of them.

4.5.2. Value Added Creation

Business Insider, following some research done by McKinsey, shows that the usage of Chatbots in different industries represent potential savings on salaries. Chatbot, in some sense, replace or automate, some activities that in some sectors are more effective.

[55] Marous J (17/01/2017) *The use of AI in banking is set to explode*. The financial brand. https://thefinancialbrand.com/63322/artificial-intelligence-ai-banking-big-data-analytics/

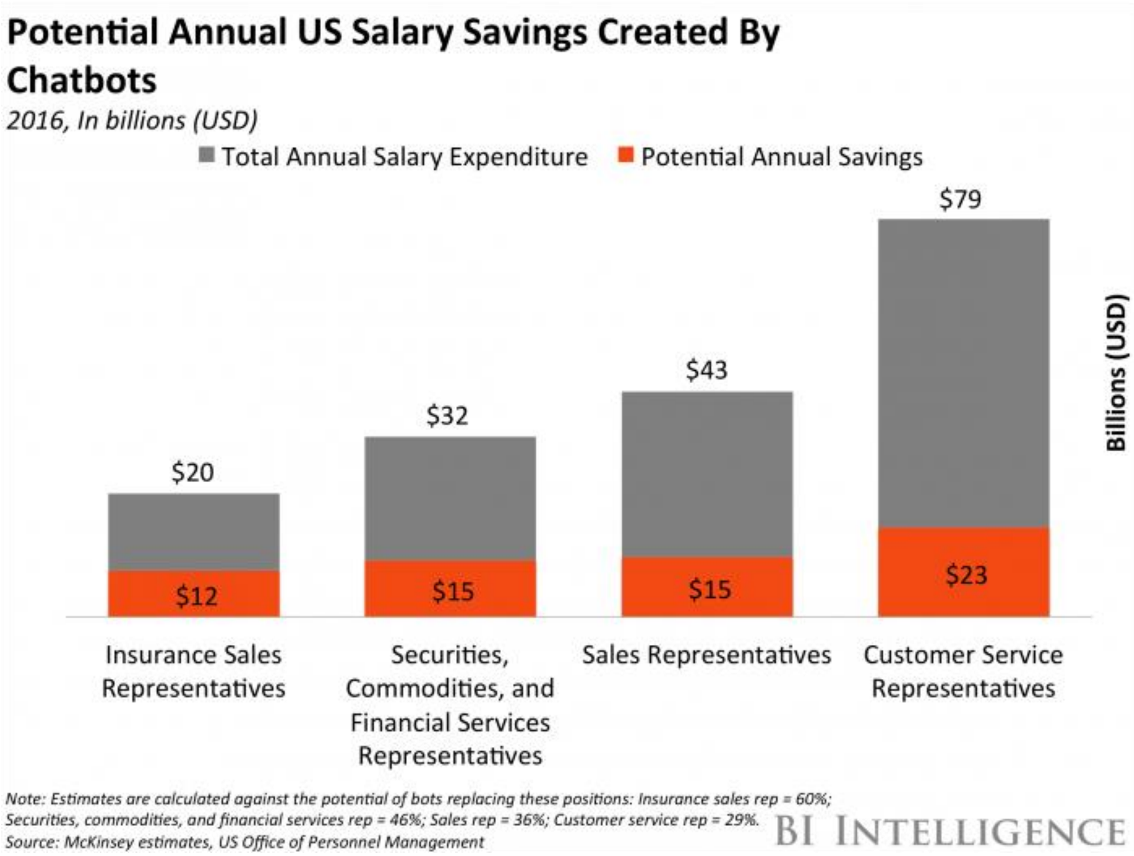

Figura 10. Potential Annual US Salary Savings created by chatbots. Source: Business Insider (McKinsey)

Regarding the financial sector, the estimations are that at least the 36% of the Financial Service representatives could be replaced with chatbots. According to a survey conducted by Narrative since and the National Business research institute (USA), at least 32 % of financial executives surveyed declares the usage Artificial Intelligence technologies[56]

4.5.3. Value Added Dynamics

Some industries such as Healthcare and Airlines are using AI in order to revolution customer experience with the aim of enhancing professionality with

[56] Marous J (17/01/2017) *The use of AI in banking is set to explode*. The Financial Brand. https://thefinancialbrand.com/63322/artificial-intelligence-ai-banking-big-data-analytics/

angry customers experiencing problems[57].Due to the nature of this technology that take customers behavior and an input, every user that adopts the technology will allow the AI engine to build knowledge and be more accurate. Since chatbot is still a new customer relationship channel growing , this fact make this innovation a Delighter. Delighters could drive new customers into the decision making process of acquiring new banking products and enhance the brand image of the company. A really important consideration is that the usage of Artificial Intelligence could impact hardly in the so called COCA (Cost of Customer Acquisition) due to the usage of Big Data Analytics. Customers behavior as an input for the construction of offers could impact in the cost of market intelligence and research.

4.5.4. About Bank of America

About Bank of America

"Bank of America Corporation, incorporated on July 31, 1998, is a bank holding company (BHC) and a financial holding company. The Company is a financial institution, serving individual consumers, small- and middle-market businesses, institutional investors, corporations and governments with a range of banking, investing, asset management and other financial and risk management products and services. The Company's segments include Consumer Banking, Global Wealth & Investment Management (GWIM), Global Banking, Global Markets, Legacy Assets & Servicing (LAS) and All Other. Through its banking and various nonbank subsidiaries throughout the United States and international markets, the Company provides a range of banking and nonbank financial services and products.

The Company's Consumer Banking segment offers a range of credit, banking and products and services to consumers and small businesses. Consumer Banking product offerings include traditional savings accounts, money market

[57] Boulton C (2/1/2017) *Virtual assistants, chatbots poised for mass adoption in 2017*. CIO. http://www.cio.com/article/3153966/artificial-intelligence/virtual-assistants-chatbots-poised-for-mass-adoption-in-2017.html

savings accounts, certificate of deposits (CDs) and individual retirement accounts (IRAs), noninterest- and interest-bearing checking accounts, investment accounts and products, as well as credit and debit cards, residential mortgages and home equity loans, and direct and indirect loans to consumers and small businesses in the United States. The franchise network includes approximately 4,700 financial centers, over 16,000 automated teller machines (ATMs), across the nation call centers, and online and mobile platforms" [58]

4.6. Rocket Mortage

4.6.1. Description

This particular services introduced by Quicken Loans in the USA offers and efficient way to get or refinancing home loans through an Online and Self-service process. Customers received a fast initial approval that depends on their credit information and their needs after submitting the required documentation through the smartphone camera. This process is supported, when needed by the customer, by an agent available through online chat or telephone.

4.6.2. Value Added Creation

After the first year of implementation, Rocket mortgage reached

- Two Billion US in home loan originations in the first 140 days
- Five Billion US in the first three quarters of 2016.
- Quick loans positioned itself among the top 30 US lenders just after 11 months on business.

Quicken loans ranked highest in client satisfaction in Mortage Origination by J.D Power for 7 consecutive year[59]

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[58] Reuters. *Bank of America Company Profile* http://www.reuters.com/finance/stocks/overview?symbol=BAC.N

[59] PRNewswire (10/10/2016) *Quicken Loans Ranks Highest for Client Satisfaction in Mortgage Origination by J.D. Power for 7th Consecutive Year*. Detroit: PRNewswire. http://www.prnewswire.com/news-releases/quicken-loans-ranks-highest-for-client-satisfaction-in-mortgage-origination-by-jd-power-for-7th-consecutive-year-300360643.html

4.6.3. Value Added Dynamics

The fast and efficient process for loan application offered by Rocket Mortage effectively brought added value for the institution. As seen on the results, the amount of new customers gotten in the first months reveals the huge potential of the service due to the easiness to apply. Having said this, is possible to evidence the reduction of the sales cycle which normally carry associated costs related with the employment of human capital. As said by the institution, the idea is to delay the direct contact with the customer until the last step in which he already went through the entire process and the success of the lead is clear. This delay might reduce the usage of more expensive channels. Regarding intangible benefits, is possible to evidence the high level of client satisfaction that is related with the NPS increasing the possibility of having always more customers.

4.6.4. About Quicken Loans

"Quicken Loans Inc. operates offers retail mortgage lending solutions online in the United States. It offers mortgages and home buying programs such as refinancing options. The company provides adjustable-rate mortgages, fixed-rate mortgages, fixed-rate VA loans, VA adjustable-rate mortgages, jumbo loans, reverse mortgages, and others. It serves veterans, service members, and their families through iPhone and Android applications. The company was formerly known as Rock Financial Corp. and changed its name to Quicken Loans Inc. in December 1999. The company was founded in 1985 and is based in Detroit, Michigan. It generates loans through its Web centers in Detroit, Michigan; Cleveland, Ohio; and Scottsdale, Arizona. The company also operates a centralized loan processing facility in Detroit, Michigan, as well as a reverse mortgage unit in San Diego, California. Quicken Loans Inc. operates as a subsidiary of Rock Holdings Inc" [60]

4.7. Tailored Fit Offers – iGaranti

4.7.1. Description

Spending habits of customers are translated to the banks every time that a transactions occurs. Location, Time and even financial propensity to save are variables that make every single customer different than the other becoming difficult the activity of customer clustering. Garanti Bank with iGaranti, tackles this need of tailored fit offers with a set of 20 mini-apps which embrace the individuality of the customer offering features like

- Monetary status for the month based on scheduled payments
- Favorite brand recognition through spending habits offering discounts on those brands
- Connection to Facebook, Twitter and Foursquare
- Personalized offers based on location in real-time
- Personalized suggestions based on user current financial status such as loan info and saving plans

4.7.2. Value Added Creation

After the implementation of iGaranti, the results are as follows

- 40% of customers offered through FourSquare have actually taken the offer[61].

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[60] Bloomberg. *Quicken Loans Company profile*. http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=383606

[61] Groenfeldt T (15/06/2015) *Turkey's Garanti Bank captures elusive millennials* . Forbes. http://www.forbes.com/sites/tomgroenfeldt/2015/06/15/turkeys-garanti-bank-captures-elusive-millennials/#44730b641721

- Number one App in the net and Noteworthy section on iTunes.[62]
- After the first month, 18,000 saving accounts opened, 800 new loans disbursed and 6,000 credit and debit card issued[63].

4.7.3. Value Added Dynamics

With the numbers gotten after the implementation of this initiative is possible to see that the numbers of new customers enhancing the power of the existing revenue streams. Besides this, existing customers are continuously offered with products and services that match with their interest in real time, which directly raises the number of, cross-selling ratio for existing customers. As seen on the results related with the joint venture with Foursquare, the client is followed in real time based on its locations, so every activity performed by the client represents a new opportunity to lead the customer with an eventual need. This action enhances the Life Time value of the customer creating even more financial strings. Cross Selling Ratios, Lifetime Values and New Customers creates new and reinforces existing revenue streams. Regarding intangible benefits, being ranked in the first position on iTunes represent a possibility to build more Brand Equity, more specifically brand image.

4.7.4. About Garanti Bank

"Garanti Bank S.A. provides retail and SME banking products and services. The company's retail banking products and services include current accounts, saving accounts and deposits, loans, debit cards, overdrafts, senior packages, payments,

[62] iGaranti (2013) *MMA Case Study. The Smarties*. http://www.mmaglobal.com/case-study-hub/upload/pdfs/mma-2013-463.pdf

[63] Accenture (2015) *The Everyday Bank. A new vision for the digital age*. Accenture. https://www.accenture.com/t20150714T065456__w__/sk-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Strategy_6/Accenture-The-Everyday-Bank-A-New-Vision-for-the-Digital-Age.pdf

and SEQR; and invoice payment, student pass package, piccolo package, direct debit, Western Union, interest rates, bancassurance, and tariff and commission services for retail customers. Its SME banking products and services comprise current accounts and related services, SME loans, professional loans, leasing, savings, and commissions. The company also provides corporate banking services, such as commercial banking, leasing, and trade and commodity finance. In addition, the company offers online and mobile banking services; credit cards; and saving accounts and deposits. The company was founded in 2010 and is based in Bucharest, Romania. Garanti Bank S.A. operates as a subsidiary of Turkiye Garanti Bankasi A.S" [64]

4.8. White Label and customer Oriented Solutions

This case studies reflect the effort of the banking institutions in order to use the mobile banking as a way in order to build new revenue streams, reduce the costs with more efficient processes and preserve and build better customer relationships in order create value for the stakeholders. Besides this initiatives there are independent businesses that searching new opportunities in the banking sector came up with solutions that indirectly create value for the bank institutions being focused on the customer. This business sector is called Fintech.

Number of partnerships between bank and fintech have been increasing. Banks realized that this partnerships represent an opportunity that bringing ideas from outside the industry and fintechs can boost their scaling process with an already set customer base client. This Win-to-Win relationships create value on a sustainable way to more stakeholders. What in the past was seen as an competitor, today represent opportunities to grow together. As Greg Midtbo,

[64] Bloomberg. *Garanti Bank Company profile.* http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=106782429

Moven's chief revenue officer enounces " We are a supported and supplier of banks"[65].

Following the definition of "The bank of the Future" the four scenarios, the last case studies fitted in the definition of "The better Bank" in which incumbent banks found the importance of rethinking their business and processes in order meet customer needs. The way in which these innovative services are developed can be tailored fit for a banking institution, as a pure outsourcing process like Moven Enterprise, or what could be called a API.

The API (Application Programming Interfaces) are the core of smartphone applications and service driven websites because they allow pulling in data from multiple sources and manipulating it in different ways. This is the case of Meniga, one of the next case studies.

The last of the next cases is very particular. It represents another type of interaction that banks can have with Fintechs. Tink, born in Sweden, offering the possibility to aggregate several banks and perform any transaction on one single interface with the customer as the main target for value creation.

4.8.1. Moven Enterprise

The services offered by this company are defined as a mobile blend of financial Management and banking.
They believe that there are four areas in which taking an action could improve customer financial lives.

- Take action and effect of Change
- Engage motivation to change
- Transaction and finance data in just one place
- Interprete tools for financial profile behaviour.

[65] Yurcan B (02/09/2016) *How moven went from 'breaking banks' to breaking bread with them*. American Banker. https://www.americanbanker.com/news/how-moven-went-from-breaking-banks-to-breaking-bread-with-them

For the bank, this could represent

- New customer Acquisition channels
- Real time engagement
- Real time relationship with client

This is going to create value impacting directly the ability of creating new revenues getting closer to the client and being with him in real time taking the behavioral info of the client as the main input. At the same time, the introduction of services that take care of the client could enhance the overall customer satisfaction.

Understading Moven as a company that offers it's customers with tailored fit solutions for their customer needs, right after two different business cases that allowed the client to create value.

4.8.1.1. My Spend for TD Bank

TD My Spend is a complement for the main mobile banking app of TD Bank created in 2016 by Moven in order to help TD users with the spending habits track through an App developed under the Moven's personal finance management tools. This app allows the users, among other features, to plan and monitor on a fluid way it's expenditures in real-time.

Brett King, CEO of Moven states "We used to see people checking their balance at the beginning of the day. Now we're seeing people checking their spending meter, and that's pretty interesting.[66]

This solution allowed TD to have the following results:

- 750000 customers used the App (20% of the Total Bank Customer Base)
- Spend Reduction of Customers in 4-8%.
- Over 550000 TD customers are using the app since its launch in April 2016

[66] Bergan B (15/4/2016) *TD Bank launches Moven-Powered MySpend to help Canadians spend wisely. Bank Innovation* http://bankinnovation.net/2016/04/td-bank-launches-moven-powered-myspend-to-help-canadians-spend-wisely/

- Top 25 Most Downloaded free apps in canada Six Months after release.

4.8.1.2. CashNAV for WestPac

The integration of Moven Personal Finance Management Tools into the WestPac Mobile Banking app allows WestPac customers to better understand the wat there spending money , have real-time alerts and decision tools regarding affordability for purchases.[67]
Simon Pomeroy, Westpac Chief Digital Officer, said " Partnering with a company like Moven reinforces to our customers that we intend to deliver the best digital banking experience in Zealand"[68].
After the implementation of Moven solution in partnership with Moven, WestPac got:

- # 2 Free App on iTunes
- # 2 Free App on Google Play Store for Android

4.8.2. Meniga

Meniga is defined as a White Label personalized Banking Software provider in Europe. This solution focuses on data consolidation and engagement through digital Banking products and marketing of the bank. The service uses the data of the customer as an input and the banking products as tools. The process in between is the transaction categorization that has an accuracy of 90%. This categorization allows the bank to arrive to the client with the right tailored product at the right time.

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[67] Westpac RED News (25/8/2014) *Westpac enters exclusive New Zeland partnership with financial services start-up Moven.Westpac*. https://www.westpac.co.nz/rednews/business/westpac-enters-partnership-with-financial-services-start-up-moven/

[68] Westpac RED News (25/8/2014) *Westpac enters exclusive New Zeland partnership with financial services start-up Moven.Westpac*. https://www.westpac.co.nz/rednews/business/westpac-enters-partnership-with-financial-services-start-up-moven/

The main idea is to enhance the customer engagement using the bank products as tools that takes into account (Personal Finance Insights, Targeted Offers and preferred functionality).
Enhancing customer engagement will directly influence the creation of new revenue streams.

Meniga's offer for PFM (Personal Financial Management) includes different processes facilitates the delivery of personalized and accessible digital banking services enabling the banks to rival with social media platforms. This process includes:

- All cards and accounts consolidation with balance history and forecast functionality
- Google-like research with unified list of cards and accounts transactions.
- Expenses reporting features.
- Financial Budgets management
- "Set and track saving goals" functionality for finance health
- Benchmarking with similar demographic and financial peers
- Cash Flow management
- "Financial Activity feed" with personalized advices and offers.

Meniga has been awarded with the several Financial & Banking innovation awards in the last years such as

- Finnovate Europe 2015 "The best of show"
- Finnovate Europe 2013 "The best of show"
- Finnovate Europe 2011 "The best of show"
- World Summit Award Winner 2015
- "The Fintech 50" 2014 Edition
- "The Fintech 50" 2016 Edition
- Deloitte "Technology Fast 500" 2015 Edition
- "European Fintech 100" Dutch Fintech Awards 2016
- "Fintech 100" Leading Global Fintech Innovators Report 2015

The PFM solution of Meniga is been implemented among different large-sized banks presented as follows.

4.8.2.1. IslandsBanki (Iceland) First PFM in Europe.

- Over 20% of bank online users signed up after 6 months of launching
- 89% of Users said they would recommend Meninga PFM solution (NPS)

"Offering the Meniga Solution to our customers has been an unqualified success. For the first time in years, we are seeing significant increase in online banking registrations. Meniga has in a very short time become one of Íslandsbanki's most important strategic partners in retail banking"[69] Vilhjálmur Halldórsson. IslandBanki Executive Director of E-commerce

4.8.2.2. mBank (Poland)

- 2MM customers daily on a 5 MM total customer base.

"The Meniga Personalised Digital Banking Solution is the backbone of many key features of the new mBank, such as Transaction Presentation, Personal Finance Management, and the highly popular Quick Search function. Meniga's contribution to the project has been instrumental and we could not have wished for better partners in terms of professionalism, fast delivery times and having access to Meniga's invaluable experience of how to get Personal Finance Management right." [70] Michał Panowicz,
Senior Director of "New mBank" Project.

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[69] Meniga. *IslandsBanki in Iceland launches first PFM in Europe*. http://www.meniga.com/clients/#isb

[70] Luciano G (30/8/2016) *mBank ramps up digital banking with Meniga*. Meniga. https://blog.meniga.com/mbank-ramps-up-digital-banking-with-meniga-930132bd7403#.xnfc0tuog

4.8.2.3. Skandia SmartBank (Sweden) Swedish First Online Bank.

- 10% of all Online Banking users started using Meninga PFM solution in the first week.

"The first online banks in the mid 90's represented a paradigm shift in the relationship between retail banks and their customers. We believe that the Smartbank, which provides our customers with an automatic analysis of their household's finances, is the next big thing in what customers will come to expect of their bank"[71]. Øyvind Thomassen, CEO of Skandiabanken.

4.8.3. Tink

This App is a very different proposal in the Mobile Banking Sector. Tink is an integration App for different banks. This app is focused on users benefit. After the directive of the EU of opening the banking infrastructure, a group of Swedish people came with the first solution in the world that integrates in the same banking App Any Bank account and Withdrawal and deposit transactions.
In this case, the PFM offer the possibility to the customer to find the most convenient product for the client having a widely range of different banks. Tink already reported around 350,000[72] users in Sweden.

5. Conclusions

The rapid adoption of smartphones played a key role in the Mobile Banking Dynamics present nowadays. Following the principle of Scale Economies, a higher number of users, lower costs. In fact, the low cost per transaction of Mobile banking Channel and the changes in customer preferences regarding the inclusion of digital on their journey, allow banks to reach customer segments still not present and reduce the time to market.

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[71] Meniga. *Skandiabanken launches "min økonomi" powered by Meniga*. http://www.meniga.com/clients/#isb
[72] Tink. https://www.tinkapp.com/en/about-tink/

The arrival of Non Banking Players to the banking sector turned on the alarm for banks in order to update their business models. This update have to be clearly more customer focused and should take into account an eventual disaggregation of the banking process to find out the one(s) in which has comparative advantage.

The added value creation could be addressed from the concept of customer Loyalty. It means enhance the ability to retain the valuable customer who is actually a source for revenue increase on cross selling activities and is a powerful instrument to attract potential new customers. As well, The valuable customer allows the bank to lower costs of acquisition and in this way to raise the overall industrial and commercial efficiency.

In order to be competitive on a fast changing environment, banking institutions have to carefully evaluate the ´develop or outsource' decision. New players arrived from different sectors in which digital is the main word and in the case of EU are supported by regulators in order to get in the system with full access to customer data. These players understood customer preferences and are responding to them faster than banks could. Partnerships and Joint ventures such as Moven-TD Bank show that banks should focus on customer loyalty, the digital transformation could be outsourced with incredible results.

The arrival of Non banking players to the banking sector shows that even though banks have been taking steps towards using digital on its value chain, they were too slow. An eventual disruptive innovation could change definitely tha way that banking activity it's been done since decades.

The study cases shows that the accountable benefits after the introduction of an innovative mobile banking services are mainly related with the increase in new customers due to an eventual Wow effect brought from innovation. Indeed, the increase in the number of sales is related with the possibility, given by the smartphone widespread, to arrive to customer segments that were not reached before.

Regarding the intangibles benefits, the visibility gotten from the introduction of an innovate mobile banking service, enhance the brand image and brand awareness associated with measures such as rankings on Apple Store or an innovation awards that pushes brand recognizition.

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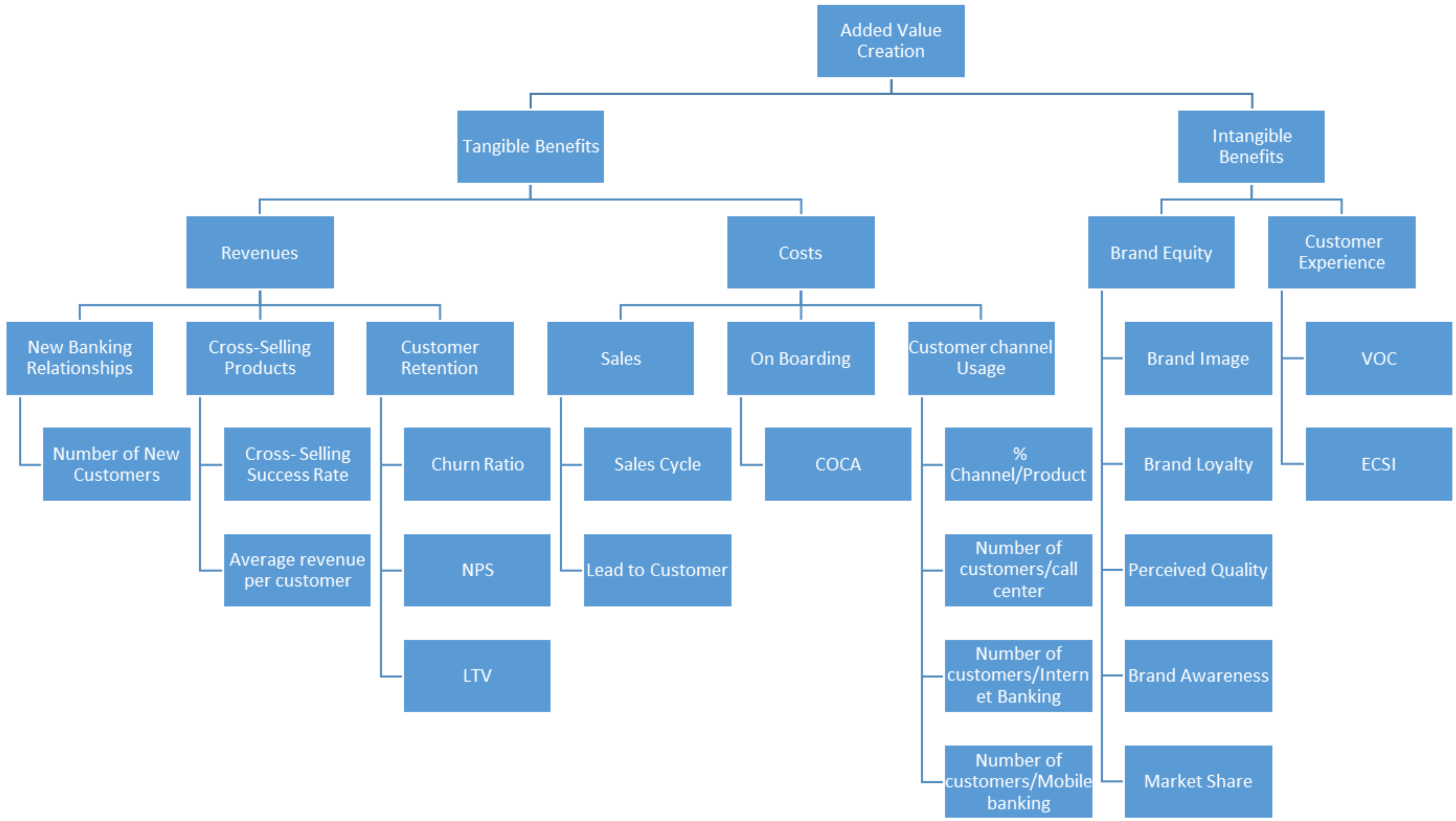
7. Annexes

7.1. Added Value Tree


Added Value Creation
Tangible Benefits
Intangible Benefits
Revenues
Costs
Brand Equity
Customer Experience
New Banking Relationships
Cross-Selling Products
Customer Retention
Sales
On Boarding
Customer channel Usage
Brand Image
VOC
Number of New Customers
Cross- Selling Success Rate
Churn Ratio
Sales Cycle
COCA
% Channel/Product
Brand Loyalty
ECSI
Average revenue per customer
NPS
Lead to Customer
Number of customers/call center
Perceived Quality
LTV
Number of customers/Internet Banking
Brand Awareness
Number of customers/Mobile banking
Market Share