Scenario Planning with INKA 4

Normative Scenario Planning as a tool to implement Financial Inclusion in the UK FinTech sector by 2030

Research presented by:

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Abstract

Financial technology, popularly known as Fintech, has disrupted and revolutionized the financial service sector. Today, institutions such as banks are adapting digital transformation with the help of technological devices. There is no doubt that Fintech has transformed the way we bank. Nevertheless, there has been a growing need of understanding the future of financial institution with a holistic approach. Regulatory and governmental support towards maximizing opportunity, minimizing risk, and integrating financial inclusion is needed to accelerate the economy and attain sustainable development.

The following thesis aims to study financial inclusion and how to achieve it in the Fintech industry. It comprises of four areas of influence; market, social, technology and regulatory while emphasizing on the economic development, social progress, uplifting digital finance and robust regulatory system in the globalized financial market. The research aims to close the gap among the regulatory, economic, technological and social aspects of Fintech and then develop a pathway to attain financial inclusion. In addition, the objective of the research is to provide a comprehensive strategic plan towards a prespecified future in finance. This was achieved with the help of normative scenario planning. The result was calculated using scenario planning software INKA 4. The result consisted of four distinct scenarios supporting the pathway to implement financial inclusion in Fintech sector by the year 2030.

Keywords: *Normative Scenario Planning, Fintech, Financial Institutions, Digital Finance, Payment, Financial Inclusion, Europe, United Kingdom, Sustainable Finance*

I hereby certify this thesis is my own work and contains no material that has been submitted previously, in whole or in part, in respect of any other academic award or any

other degree. To the best of my knowledge all used sources, information and quotations are referenced as such.

Munich, 26.08.2020

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Key findings

- Areas of influence: Technology, Regulatory, Market and Social aspects were studied to analyze whether financial inclusion can be obtained in the United Kingdom by 2030.
- With the scenario planning software INKA 4, five scenarios were generated. The three most likely scenarios were selected and described. It provided an outlook on how the areas of influence could potentially lead towards attaining financial inclusion.
- As the future transformation of digital finance and technology is growing fast, the obtained results allow banks and Fintech to assess the ongoing trends, apply strategies to plan and prepare for a sustainable and secure future where access to financial services is attainable by all.

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List of Abbreviations

UK: The United Kingdom SDG:

Sustainable Development Goals e-KYC:

electronic- Know Your Customer

HM Treasury: Her Majesty's Treasury, UK

GFC: Global Financial Crisis

P2P: Peer-2-Peer

API: Application Programming Interface

B2B: Business to Business

B2C: Business to Customer

IoT: Information and Communication Technology

POS: Point of Sale

FCA: Financial Conduct Authority

FIC: Financial Inclusion Commission

CFP: Ensure customer fund protection

CDD: Customer Due Diligence

1. Introduction

In 2015, the United Nations put forward 17 Sustainable Development Goals (SDGs) to bring together the shared agenda of achieving a better future in both the developed and developing countries by 2030.[1] The goals include basic human needs such as eradication of poverty, illiteracy, and hunger, as well as intricate economic and industrial growth, the fight against climate change, and global partnership. The aim of the SDG agenda was to address global economic, social, and political constraints and come together for the well-being of humanity and the planet. After four years of exercise, the 2019 Sustainable Development Goals Report examined the progress of the goals from the previous years. Amongst the seventeen designated goals, the UN particularly stated that the world is not on track to solve extreme poverty by 2030 due to political, economic, and social factors, hampering mostly the rural population.[2] This includes vulnerable part of the population not having access to basic financial services due to factors such as lack of financial knowledge, restricted access to financial services due to lack of identification documents, bad data quality, lack of government and private sector partnership and absence of regulation. According to a study conducted by Elaine Kempson et. al. (2012), poverty is related to financially excluded since they are on the verge of unemployment usually due to their physical or mental condition. [3] An immediate plan to retain innovation for eradicating poverty in the grassroot level and connecting it to the global capital market is needed.

Today 59% of the world population has access to internet and 67.1% of adults (15 years and above) have access to a basic financial institution account. Meanwhile, only 4.4 % of these adults have a mobile money account.[4,4] The population with the lack of digital

[1] United Nations 2019.
[2] United Nations 2019., p. 22
[3] Kempson and Collard 2012. P. 12 [4] Clement and Kemp 2020.
[4] Demirguc-Kunt et al. 2018.

financial products are consequently financially excluded. [5] The above-mentioned variables can be taken into consideration to co-dependently shape the future of saving, investment, lending, payment, and insurance and tackle the issue of poverty. According to the HM Treasury of London (2007), financial inclusion makes people plan and save for their future as well as deal with uncertainties by enabling financial services in their daily transactions.[6] There is an urgency to inject inclusion in the financial sector with the use of technology by providing access to basic digital finance for individual needs, making savings and investment possible for the financially excluded part of the population, providing financial products as a step towards social progress and formulating regulations supporting inclusion with the help of governmental bodies. This leads to the research question, "How will the rate of advancement in technology, environment, economy, and politics affect financial inclusion in the Fintech industry?" More importantly, "How can financial inclusion be attained in the European Fintech sector by 2030?" For a focused approach, a time frame of 10 years is considered. This time frame ties with the recent SDG plan by the UN. Europe is taken as the geographical scope. Specifically, the United Kingdom (the UK) will be studied as the target market as it is considered one of the Fintech hubs in Europe.[8]

This paper is divided into eight sections. The first section outlines the importance of the research topic and presents the central research question. The second section provides a general introduction to financial institutions including Fintech and its definition criteria. In the third chapter, the paper gives a brief overview of financial inclusion, its historical evolution and introduces the UN SDG 2020 along with its current context in Europe. The origin and scenario planning methodology are outlined in section four which also

[5] Karlan et al. 2016.
[6] Financial inclusion 2007. HM Treasury, UK [8] Ankenbrand et al. 2019.

contains a comprehensive literature review of each selected area of influence. Chapter five introduces the results followed by their corresponding discussions in chapter six.

Section seven provides a summary of the conducted research. Lastly, chapter eight summarizes the limitations of the research.

2. Introduction to Financial Technology

This chapter provides the definition of financial technology alongside its history and current context. Furthermore, a general introduction about the European Fintech market is provided. Lastly, an overview of the UK financial market is given.

2.1 Definition of Financial Technology (Fintech)

Financial technology, also known as Fintech, can be defined simply as the use of technology to drive financial institutions and their services.[7] The transformation in financial institutions over the years has been brought by the increasing use of information and communication technology (ICT).[8] Fintech drives financial services delivered by IT. This phenomenon is regarded as an innovative disruption in the financial market and has been studied by researches as a challenging incumbent of traditional financial institutions.[11] During the recent years, the full potential of financial technology has been recognized by start-up companies due to digitalization and rapid

[7] Buckley et al. 2016.
[8] Zavolokina et al. 2016. [11] Buckley et al. 2016 p.22 [12] Rubini 2019.

technological advancements. This has attracted attention towards its regulatory, technological and monetary value.

Specific segments were traditionally referred to as the back end for the processing of financial institutional services[12]. Such services included acquiring, processing, issuing,

lending, and factoring of the digital payment transactions. Today, the emerging financial companies use modern technology to deliver robust, efficient, quick and reliable solutions in the financial industry. The services have expanded to include payment, lending, mortgage, insurance, and personal finance management. Other emerging innovations according to Rubini (2019) include cryptocurrency, regtech, insurtech, blockchain, IoT, bigdata, and bitcoin. [9,14] Figure 1 from the Basel Committee on Banking Supervision (2018) provides a detailed overview of the sectors on Fintech innovation.[10] It identifies three product segments along with market support services. The product segment includes credit disposal and capital raising services, payments, clearing, and investment management services. These sectorial segments act as a function in the core banking. Simultaneously, the market support services are directed towards emerging recognition, innovative disruption and development in the financial ecosystem.[11]

[9] Lee and Lee 2016p.440 [14]
Rubini 2019.
[10] Bank for International Settlements 2018.
[11] Bank for International Settlements 2018 p.1-9

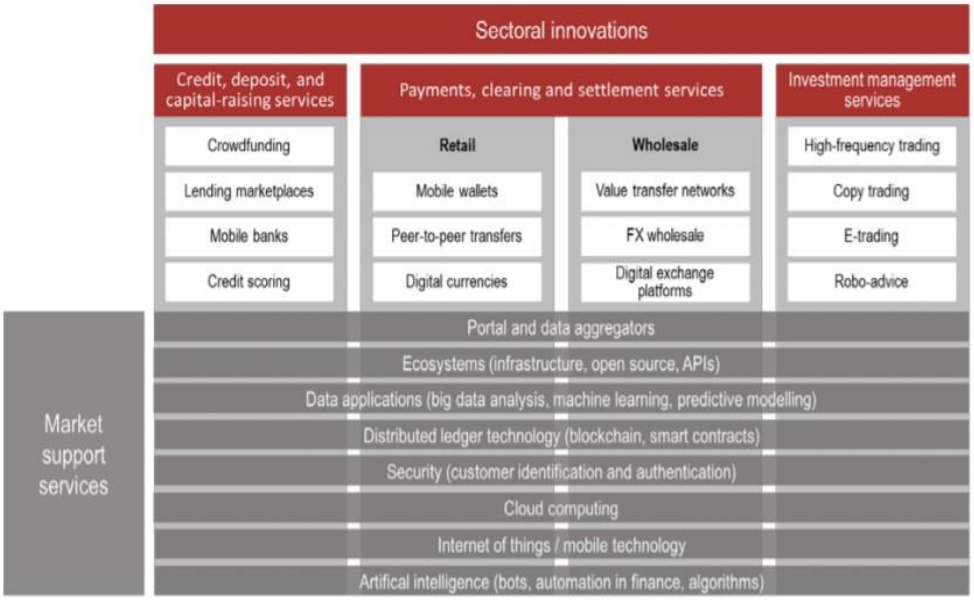

Figure 1: Detailed overview on sectorial innovations (Bank for International Settlements 2018)

Gimpel et. al. (2018), differentiates between commercial and academic characteristics of Fintech. He states that innovation in financial services makes digitalization and technology more personalized.[12] Zavolokina, et. al. (2016), conclude Fintech to be emerging from financial and digital innovation, as well as new services, products, processes, or business models.[13] Furthermore, Fintech has also been observed as a business model and studied as a transformational industry by itself. Lee et. al. (2015) mentions five characteristics for sustainable finance to persist in the business sector. Low margin, asset light, scalable, innovative, and compliance easy Fintech products make it accessible and innovative for end users to have a good experience.[14] All the papers mentioned above conclude that Fintech is driven by technology and digitalization. The rising financial companies and startups blend mobile computing and Internet of

[12] Gimpel et al. 2018. p.4-6
[13] Zavolokina et al. 2016 P.5-7
[14] Lee and Teo 2015 p.3
[20] Gimpel et al. 2018 P.5
[21] Zavolokina et al. 2016.

Things (IoT) to deliver robust, innovative and disruptive service in the market.[20] Since Fintech is a rising topic, there is room for scientific studies on its innovative disruption and other aspects such as supporting upcoming technologies, ecosystems, and organizational factors.[21]

2.2 Historical evolution

The evolution of Fintech can be traced back to the 1800s. The growth of financial technology can be observed since the beginning of financial institutions itself. The first bank was established in 1477A.D. Since then many other financial services such as securities firms, insurance companies and real estate have followed. [15] Financial institutions gradually start as service providers to various companies in the market. In

time, these service providers establish a complex and progressive network amongst various companies. These complex processes have been planned and synchronized as far back as the 1800s. In the modern era, technology, both analog and digital, has been used to make the financial service more robust and reliable.[16,24]

According to Buckley et. al. (2016), the evolution of Fintech can be classified into four stages.[25] The early stages of financial technology lasted from 1866 until 1967 and is regarded as Fintech 1.0. This period remained analog as internet and technology had not yet come into practice. Most of the services provided by financial institutions formed the foundation during the European financial revolution in the late 1600s. Technological instruments such as telegraph slowly gained its place in the industrial age. This in return made it easier to network and communicate for financial institutions around the world.

[15] Alt et al. 2018p.235-237
[16] Alt et al. 2018 P. 235 [24]
Bouwman et al. 2005. [25]
Buckley et al. 2016 P. 22-27
[26] Buckley et al. 2016.

The second wave for Fintech evolution started in 1967 and lasted until 2008 when the entire world entered a new era of the digital age. This stage is defined as Fintech 2.0. Fintech 3.0 emerged in 2008 and last until the present day. Fintech 3.0 serves the upcoming companies and supports financial institutions by delivering its services to them.[26] Table 1 shows the classification of various stages in the Fintech evolution:

Name	Time	Transformation	Characteristics
Fintech 1.0	1866-1967	-from analog to digital	-analog age -joint stock companies, insurance, and banking starting from European Financial and Industrial Revolution.
Fintech 2.0	1967-2008	-on digitalization of traditional financial services	-electronic payment systems advanced rapidly -first major regulatory focus on fintech -while e-banking was widespread, it created new risks
Fintech 3.0	2008-Present	-key players from developed countries	- flourished in the developed countries - technology trusted more than banks to handle the finances - beginning of smartphone and the growth in sophistication of application programming interfaces (APIs)
Fintech 3.5	Present	-origin shift to emerging markets	- government policy in developing countries support Fintech for the purpose of economic development - 1.2 billion unbanked individuals, whether regulated or not banking is necessary than banks itself -emerge of financial inclusion

Table 1: Classification on stages of Fintech evolution (Buckley et. al. 2016)

2.3 Current context

Previously, evolution and the historical development of financial institutions and Fintech have been discussed. Further, the paper discusses the current scenario of financial technology and where it stands globally.

2008 marked the year of the Global Financial Crisis (GFC). [17] Even the strongest economies around the world shifted towards technological firms to handle their day to day transactions such as Peer-2-Peer (P2P) lending. [18] Financial professionals were vulnerable, banks and financial institutions faced heavy expenditure and credit and lending were paused.[19] Arner et. al. (2017), states that GFC along with the emergence of

smartphones and improved Application Programming Interface (API) provided entry points for Fintech startups to serve the market when banks were failing to do so.[20]

Fintech and financial institutions have existed side by side since the emergence of financial technology. The traditional financial institutions have financial resources and capital reserves. Nevertheless, they suffer from shifting market and technological constraints. On the other hand, Fintech have an agile and sophisticated technology to serve the upcoming market in real-time with robust and attainable solutions. However, they lack the capital reserves to grow in the industry. Fintech are providing services that outcast traditional banks by reaching out to the niche market. [31] The banking industry on the other hand, is witnessing a paradigm shift in recent years around the world.[32]

[17] Buckley et al. 2016.
[18] Buckley et al. 2016 p.23
[19] Arner et al. 2017 p.6-7
[20] Arner et al. 2017 p.7 [31]
Buckley et al. 2016 p.24
[32] Barnett and Sergi 2018.

Technology now has the potential to create an impact in the financial sector by reaching a wide range of customers and giving them new ways to access the financial product. The traditional banks are attempting to collaborate and invest on Fintech. The objective of both ends is to offer better and more efficient products to the market.

The term Fintech is not only a combination of finance and technology, but it also includes usage of technology to improve financial APIs and services for the company as well as the customers. Veugelers (2017), identifies the categories of Fintech in his book into the following areas:[21,22]

- Payment Processes including current account for payment, savings, transfer, and remittance
- Financial Intermediation including lending, crowdfunding, and wealth management
- Digital Currency including cryptocurrency and blockchain - Secondary Services including Insurtech and Regtech

Providing various financial services in a single platform is an attraction for the customers as well as the investors. According to Statista research (2018), investments in Fintech reached $34.4 billion globally in 2017 and $33 billion by the first six months of 2018.[23] A recent study made by Deloitte Center for Financial Service reflects the increment on investment in Fintech sectors throughout the years. Banking and capital markets have the highest platform followed by investment management, insurance, and real estate. However, the study indicates a decline in new Fintech companies over the years. The decline in new startups indicates that capital investment is being pooled within the existing startups for a robust, efficient and effective solution.[24]

[21] Veugelers 2017p.199-200
[22] KPMG International Cooperative 2019. p.74
[23] Symigiera M. 2018.
[24] Deloitte Center for Financial Service 2018.

2.4 Fintech in Europe

2.4.1 Overview

Chapter 2.2 reflects the evolution of financial technology and the current situation on Fintech 3.0. The major turning point for Fintech 3.0 occurred due to relevant use of smartphones and APIs. Another major characteristic denotes that Fintech 3.0 started booming in developed countries as a result of the economic crisis of 2008. Due to the unreliable traditional banks, finance stated indulging more in technology for reliable products and quicker financial solutions to the market.

Today, Europe is considered as the Fintech hub with the top Fintech startups and investments residing in the European countries. In 2019, the Institute for Financial Services Zug (IFZ) identified the most robust Fintech ecosystem globally. The ranking indicates four out of the top five Fintech hubs within Europe. With Singapore on the

lead, the countries that follow are Switzerland, the UK, and the Netherlands; all in the European region.[25]

The following chapter reflects upon the European financial technology market and studies the impact on its economy. The chapter also covers the UK Fintech market.

2.4.2 European Fintech Market

The banking industry in Europe is steepening in recent years due to the involvement of capital market and cross border transaction. European regulation must complement

[25] Ankenbrand et al. 2019.

cross-border transactions which lead to less risk and the deepening of the capital market investments. Although efforts have been made both from the regulatory bodies and from the governmental perspective, significant changes have not been made in the European market until recently. [26] In the paper, "Capital Markets Union and the Fintech Opportunity", Demertzis et. al. (2018), describe this to be the effect of dominance from traditional banks and the saving mindset of the customers which does not compliment the uprising financial technology. He further states the three most important characteristics for the development of the European Fintech market to be regular change and updates in regulatory structure, compliance with technology and support by the market.[27]

It can be established that Fintech is a disruption for traditional intermediates such as banks and capital markets. It reduces cost, reliably regulates the creditors and improves access to financial products at a much quicker pace with better user experience.[28] The UK amongst other European nations has realized the dominance of Fintech and excelled as a pioneer in the Fintech industry. According to the Pulse of Fintech KPMG report in 2018, the Fintech industry in Europe hit an investment of €34.2 billion with 536 deals

closed.[29] Amongst the big players in the industry, UK reserved its position as the leader in Fintech.

While Fintech appears to be more collaborative in countries outside of Europe, countries within Europe have different opinions on the topic. Most countries regard Fintech as a threat to the traditional way of financing, while for others it brings an opportunity to scale and grow via robust and innovative digital application.[42] Different countries have

[26] Morgan et al. 2018.
[27] Demertzis et al. 2018.
[28] Demertzis et al. 2018p.3, p.44
[29] KPMG International Cooperative 2019. [42] Berg et al. 2020p. 19-23 [43] Ankenbrand et al. 2019.

taken different approaches towards the uprising of Fintech. Some countries are reluctant on collaborating with Fintech, while some countries such as Netherlands, the UK, and Luxemburg have made the way towards digitalization.[43]

The UK stands at the forefront of the European Fintech landscape. Historically, the UK has been dominated by a small group of financial institutions that carried out most of the services and offered most of the products available in the market for consumers. Until the 1980s, these groups operated separately for separate products such as commercial and investment banking, real estate, insurance, fund management, and securities trading. [30] Evolution in UK banking started even before digitalization of financial goods and services. Bowen et. al. (1999) writes that the initial steps towards modernization took place after the 1980s when foreign banks started entering the market and competing to survive. The capital market started growing, and lending and investing became more popular as the banks focused on market orientation. Regulations also started to loosen since banks and security markets started merging.[31] Furthermore, technology slowly drove assistance in banking as it started flourishing around the UK. Banks reduced costs, innovated robust and user-friendly products such as ATM, and reduced staff numbers while expanding internationally. Various industries, including the banking sector have been impacted by technological evolution in the UK. Today,

the UK dominates the Fintech industry, not only due to the vast acceptance of digital and online payment from the population but also due to other factors such as continuous support by the regulators and the government, innovative and robust Fintech notions, investment in SMEs and an appetite for technological evolution by businesses and customers.[32] The government has been supporting Fintech and Innovative SMEs, along with providing them supportive approaches to policies and regulations. Perhaps the most

[30] Bowen et al. 1999 p.280-282
[31] Bowen et al. 1999p.50-54
[32] Kempson and Collard 2012.

important development by the UK government is the support for the insertion of Application Programming Interface (API) for companies.[33] It allows open banking for all merchants to integrate into the software. In terms of Fintech, it helps to make payment secure with the help of technology and digitalization. The recent updated Payment Service Directive (PSD2) on the other hand, allows the merchants to allocate and store data as a form of open banking, all with the consent of the consumers.[34] This data sharing helps Fintech and SMEs to target the correct audience, integrate new products and enhance their current services.

In 2016, the consulting firm Ernst and Young (EY) analyzed the best Fintech ecosystem geographically. The study was based on the quality and capacity of talent, capital, policy, and demand for financial technology. The UK ranked highest amongst other strong competitors such as California and Singapore in terms of regulatory, taxation and governmental policy.[35] KPMG thereafter positioned the UK as the leader in attaining venture capital (VC) deals in its 2019 Fintech report.[36] The department of trade along with the support from governmental organizations such as Her Majesty's Treasury and Innovate Finance indicated 89,000 financial firms were established in the UK by the year 2019. [51] With support from regulators and government, tech-savvy emerging companies like *Worldremit* and *Curve* raise funds to allocate their capital and invest in

innovative technological financial solutions. The investment is hereafter supported by regulatory bodies by decreasing barriers to regulations and policy for the smooth operation of businesses. *Monzo* and *Revolut* are some of the noticeable Fintech and challenger banks based on the UK that raised investment funds of $110million and

[33] Yang 2017.
[34] Morgan et al. 2018.
[35] Yang 2017p.2-3
[36] KPMG International Cooperative 2019 P. 44
[51] Helm et al.

$250million respectively. [37] This results in Fintech expanding internationally with backup support by the regulators to compete and thrive in the global market.

3. Introduction to Financial Inclusion

This chapter defines financial inclusion alongside its definition, history and current context. Furthermore, a general introduction to the United Nations Sustainable Development Goal and its relevance to financial inclusion is provided. Lastly, an overview of financial institution in the context of Europe is given.

3.1 Definition of Financial Inclusion

The vulnerable part of society is still living in extreme poverty with no access to financial literacy.[53] As financially excluded people are often targeted for financial fraud and scams, non-authorized financial institutions and risky lenders such as loan sharks and middlemen are a big danger to them. With suitable institutionalized services such as proper bank accounts and online payment facilities, the vulnerable population will have safer and quicker access to financial products. There has been a long and continuous evolution of implementing financial inclusion in history. The effort to connect individuals around the world with basic financial product was introduced when

microfinance services started offering basic savings and credit accounts to individuals.[38] Today financial inclusion has evolved into providing access to financial products to the

[37] KPMG International Cooperative 2019 P.44 [53]
The World Bank.
[38] Baptiste 2019.

excluded people of society. There are various measures to be considered while defining financial inclusion in terms of its reachability, usage and factors affecting inclusion.

The Center for Financial Inclusion defines financial inclusion as a destination where all people in the world have access to financial services provided to them at a reasonable price with efficiency and convenience.[39] Access refers to not only owing a financial service account but at a reasonable cost with regulatory practices to protect data and avoid unfitting deceptive products with illegal practices.

The Alliance for Financial Inclusion has narrowed down the definition of financial inclusion in four categories. Access, quality, welfare and usage of financial goods and services are the standing pillars to financial inclusion.[56]

The World Bank has been actively participating in making the world a financially inclusive place for all the individuals of the population. The World Bank describes financial inclusion where SMEs and households can use financial products according to their needs of transactions, payments, savings, credit and insurance.[57] Various initiations have been introduced by the World Bank to tackle the problem of exclusion by creating a safe and regulated environment for both consumers and merchants, refining financial capabilities of the excluded, spreading awareness, collecting and delivering data on inclusion, providing a platform to all payment and banking service providers with the collaboration of governmental bodies. Initiatives from the World Bank such as The Universal Financial Access aim to deliver a basic bank account to the excluded

[39] Center for Financial Inclusion. P.3
[56] Alliance for Financial Inclusion. [57] The World Bank.

population.[40] The goal is to help them make basic transactions and have better reachability for financial activities such as international transfer and remittance.

3.1.1 Concept of the Bottom of Pyramid (BOP)

The concept of the Bottom of the Pyramid (BOP) indicates the economic hierarchy present in the world. The rich and financially stable are located at the top of the pyramid. The middle class is in the middle and the poor and vulnerable are located at the bottom of the pyramid. The population in the bottom of the pyramid is living on less than $2 per day. According to Prahalad (2005), more than four billion people are living at BOP.[59] Our present economy focuses on the rich and financially stable as they have more purchasing power. The BOP has been neglected for many years and is recently being discovered. This provides an opportunity for firms to serve the untapped market at the bottom of the pyramid.[41] There is not enough innovation and investment in the financial products and services helping the BOP. However, businesses have realized the potential of the BOP and have entered the market. These businesses could serve the four billion people as consumers and not as social responsibility. This in turn provides a sustainable environment for both the rich and the poor to survive in the market. If products are tailored according to the BOP need, penetrating the market is possible.[42] In the UK, where poverty is not predominant amidst the population, there are still 12.9 million people living in absolute poverty.[43] Although BOP has emerged following concepts from the developing economy and penetrating the bottom of the pyramid, it is an important concept even in the developed countries like the UK. It is crucial to understand the BOP before entering the market. While serving BOP has potentials, it is necessary

[40] The World Bank.-UFA2020
[59] Prahalad 2005.
[41] Rosca et al. 2018.
[42] Karamchandani et al. 2011.
[43] Francis-Devine 2020 p.10

to realize the choices, and standardize the products according to the BOP market need, intake suggestions and research the market before developing a product specified for the

BOP. Along with pricing, entering the BOP market demands marketing and distribution strategy. Robust, innovative and value addition should also be considered. Companies should not treat BOP as a corporate social responsibility but rather as an opportunity to serve the untouched market and integrate the consumer's need in their business model.[44]

3.1.2 Understanding inclusion and why it matters

The importance of penetrating BOP in order to serve the vulnerable and excluded population has been discussed. Financial inclusion has been linked with social inclusion. When the BOP is financially included, they can make decisions, choose amidst products and have access to financial services through technology. Together with financial services like mobile money account and online banking, a platform for various financial institutions need to be provided to enable accessibility, affordability and availability.[45]

Financial Inclusion is closely related to the context of providing digital financing services to the excluded and vulnerable population. Multiple notions need to be considered when understanding inclusion in depth. First, inclusion goes beyond the digitalization of goods and services. When the excluded population is not capable of utilizing the products, digitalization fails. Thus, extensive awareness, knowledge and availability must be spread to the excluded population so that they can realize the benefits of having access to financing products beyond the traditional services. Next, the context of "excluded" needs to be examined. Safe use of services needs to be provided to all the customers who are omitted from the benefit of finance including population from the Bottom of the Pyramid (BOP) who are poor, disabled, rural or women from deprived areas with special challenges. By "safe use", the impression of consumer

[44] Prahalad 2005.
[45] Realini and Mehta 2015.

protection with no financial mishaps such as misuse of their data, fraud and illegal transactions is implied. The services need to be tailored according to the needs of the vulnerable population. Simple, robust and useful information should be given. Lastly

for inclusion to occur, a diverse, regulated, open market and a competitive platform with flexible policies should be provided to deliver and operate in the marketplace. [46]

According to the Findex data conducted by the World Bank (2018), 1.7 billion people around the world are unbanked. They do not have an account with any financial institution or any mobile payment contract. Fifty-six percent of the unbanked are women and more than half come from developing nations around the world.[47] Providing a basic current and saving account is the first step towards sustainability in financial sector. This gives people the power to have control over their finances, rather than storing their savings at home in cash. For most of the financially excluded population, receiving payment from the government, salary and international remittance are all done through a third party or directly at the workplace in cash. Saving on the other hand is rarely done through trusted financial intermediators but rather through a family member or simply by converting cash to frozen assets such as jewelry or cattle. Likewise, borrowing and lending are done through a family member or a friend or via risky unauthorized sources. This method is neither sustainable nor secure for the financially excluded people. The more vulnerable people who do not have access to technology and basic financial needs, the bigger the gap between the rich and the poor becomes. [67]

Financial inclusion is not always about digitalization and the use of technology to satisfy people's financial needs. Financial inclusion also needs to be designed according to the needs of the vulnerable and excluded population. The traditional banks are now being challenged by the neo-banks that design financial products tailored to customers' needs

[46] Center for Financial Inclusion.
[47] Demirguc-Kunt et al. 2018. [67] Demirguc-Kunt et al. 2018p.5-10
[68] Kelly et al. 2017.

and wants.[68] This creates competition in the market as most of the financial institutions are already turning towards innovation and digitalization.[48] Although this appeals firstly in the developed countries, SMEs and Fintech focusing on financial inclusion should

not forget about the untapped market of the excluded population. The digitalization of financial accounts has been able to reduce costs and save time while providing better security for the finances. However, the merchants providing online payment and mobile money account need to be aware of data and transaction security as well as fraud prevention and must make the services more transparent and user friendly.[49]

Financial inclusion aids the microeconomic state of a country. Connecting villages and towns to cities helps farmers and local entrepreneurs to sell their products on a larger scale. Similarly, when people are exposed to digital finance with proper guidance and knowledge, they get exposure to various opportunities to save, invest and make transactions with less time, money, energy but more security.[50,51]

The macroeconomic benefits of financial inclusion are abundant as well.[52] Introduction to the concept of inclusion and access to financial products might lower informal and unauthorized transactions occurring at the BOP.[74] Various Fintech and SMEs have now been established with the assistance of the government to support local businesses and households in need who are in desperate need of credit. Figure 2 indicates the relationship between financial institutions, government, payment facilitators and mobile

[48] Kelly et al. 2017.
[49] Klapper and Singer 2017.
[50] Ozili 2020.
[51] Baptiste 2019.
[52] Baptiste 2019 P. 162-172
[74] Ozili 2020.

services providers which can provide a workable platform and ultimately contribute to both micro and macro-economic growth.[53]

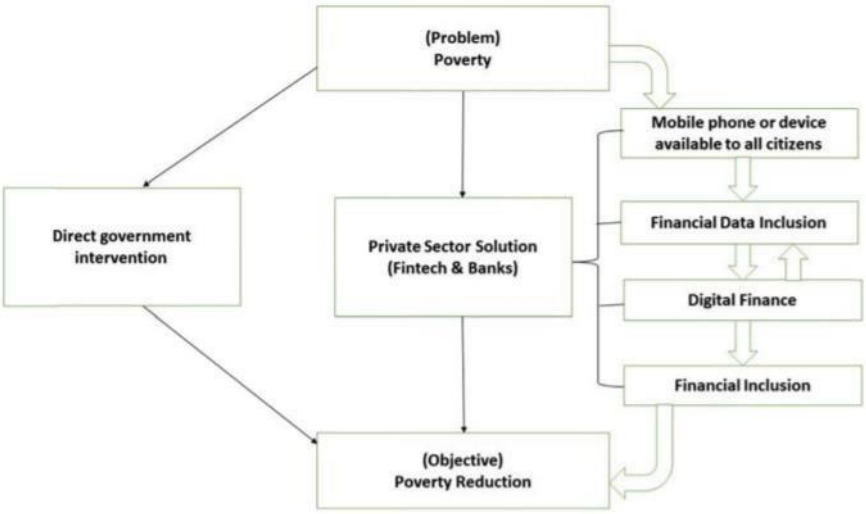

Figure 2: Relationship between financial institutions, government, payment facilitators and mobile services providers. (Ozili 2018)

[53] Ozili 2018.

3.2 United Nations Sustainable Development Goals 2030

3.2.1 Current context

The United Nations Sustainable Development Goal adopted a plan-for-action to achieve a sustainable and better future for the world by 2030.[54] Seventeen global challenges have been put forward by the United Nation to tackle issues relating to hunger, poverty, illiteracy, gender inequality, responsible consumption and production, and others.[55] The goals are interconnected, and financial inclusion is positioned as an enabler for the seventeen goals. Digital finance has proven to provide inclusiveness and feasible products, building digital infrastructure, making payments and passing regulations including the excluded population. Today, the submission of new Fintech apps, online accounts, mobile money, insurance and credit not only serves the rich and developed, but also benefit the excluded part of population. Digital financial inclusion is taken as a drive to provide responsible, sustainable and well-regulated financial environment for global growth and economic progress. [56]

Although not an SDG goal directly, financial inclusion helps deliver sustainable development goals. People with access to their financial accounts can secure their money. Bank accounts provided to women promote gender equality as women can save for themselves rather than depending on their husband. Money account provided to farmers can boost up their investment and they can sell to customers in distant locations beyond

[54] UNSGSA et al. 2018.
[55] UNSGSA et al. 2018.
[56] Klapper et al. 2016.

their local area. Financial accounts also provide saving, leading to healthcare facilities and exposure to insurance policies and other social benefits.[57,58]

Financial inclusion measures the availability of financial services to the vulnerable and excluded people. On the other hand, financial development measures the broader perspective of inclusion such as understanding the stock market and country's credit ratio to its GDP. [59, 60] Financial inclusion and financial development are equally important in helping to achieve Sustainable Development Goals. The research done by UNSGA (2016) shows that financial access can help benefit the poor which will ultimately help to eliminate poverty, hunger, illiteracy, healthcare issues and gender inequality.[61] 39% of the poorest 40% of households lack a financial account.[62] Savings and payment are done in cash, therefore making it difficult for the financially excluded to understand their finances, have a history on their transactions and have financial security. Basic transactions like money transfer to the poor from the government can ensure food security for vulnerable families. Likewise, low-income and middle-income citizens do not necessarily have health insurance covered and pay 37% of their

healthcare out of their pockets.[63] Women specifically are not involved in finances in poor households, giving the power of managing transactions to men. The lack of data referring to the gap between women and men owning businesses, accounts and credits makes it difficult for policymakers to favor and support the needs of women.[64] An economy needs investment and market entry from various companies and SMEs to grow. In 2015, more than half of the payments made by small and middle-level businesses

[57] UNSGSA et al. 2018.
[58] Klapper et al. 2012.
[59] Allen et al. 2016.
[60] Karlan et al. 2016.
[61] Klapper et al. 2016.
[62] UNSGSA et al. 2018.
[63] Holtz et al. 2014.
[64] World Bank et al. 2017.

were in direct cash which lead to a higher risk in security, time consumption and other increased cost.[65] On the other hand, access and awareness on financial development of both the rich and the vulnerable of the society contributes to the economic and social growth through encouraging innovation and sustainable industrialization for equality, peace and prosperity to arise.[66]

3.2.2 Financial Inclusion in the European Economy

It is established that financial inclusion can drive development in any economy by aiding investment in health, education, business and economic growth. Although emerging markets and developing countries are targeted by institutions to eradicate financial exclusion, developed regions like Europe still face financial bias between the rich and able, and the poor and vulnerable.[67] While some European countries prospered and increased account ownerships, others are slower in rate. Gender gap, illiteracy, lack of awareness and trust are some of the reasons why people do not want to switch to a financial account. 116 million adults (age 15 and above) still do not have access to a financial account. [68] Although account ownership and financial account have been increasing in Europe, there is a big difference between the countries in the east and west of Europe. Figure 3 shows the regional account ownership throughout the years in

Central Asia and Europe.[69] The timeline with a gap of three years is taken between the year 2011 and 2017. Northern European countries such as Denmark, Sweden, Norway and Finland lead the chart maintaining close to 100% of adults owning an account.

[65] Klapper, Singer 2014.
[66] Klapper et al. 2016.
[67] The World Bank 2019.
[68] Demirguc-Kunt et al. 2018.
[69] Demirguc-Kunt et al. 2018. [92]
Klapper et al. 2016.

Significant growth is seen in Eastern Europe from 40% in 2014 to more than 60% in 2017.

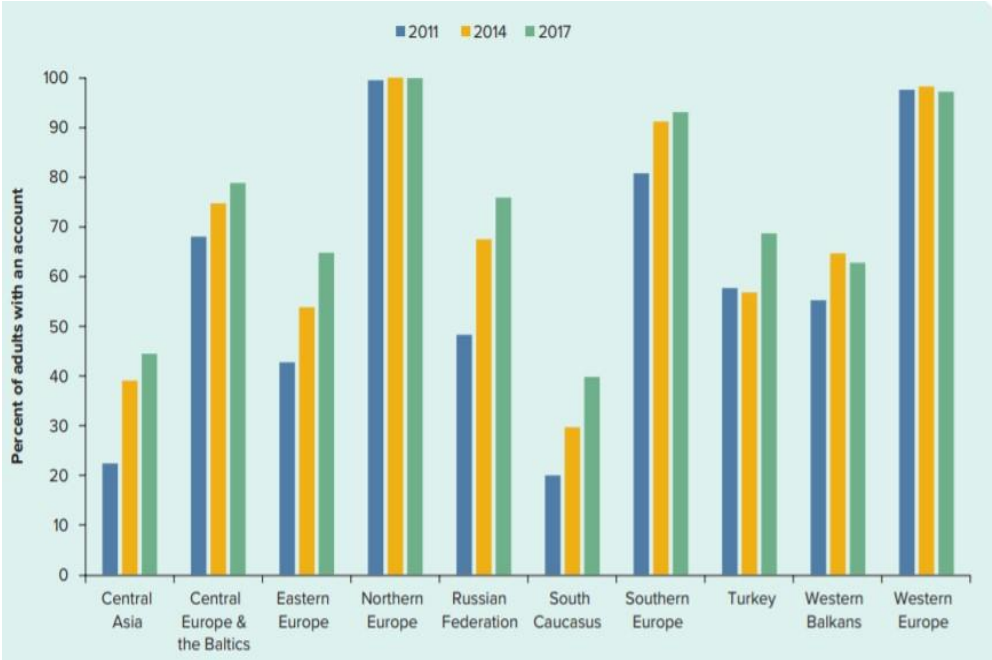

Figure 3: Percent of adults with an account ((Demirguc-Kunt et al. 2018))

The path to financial development can be reached by financial inclusion.[92] According to the Findex data provided by the World Bank (2018), 65.2 million people in Europe and Central Asia are owing a basic financial account. Out of this, only 3.2 million people have a mobile money account. However, more than 80% of the unbanked population do have access to mobile phones.[70,94] If easy, affordable and reliable access to mobile money account is given to the vulnerable people, they could potentially monitor and

have control over their finances. Along with technology, the government and regulators have an important role in achieving financial inclusion in Europe. Digitally converting government payments such as pension and social security could help improve efficiency,

[70] Demirguc-Kunt et al. 2018. [94] World Bank Group 2018.

time management and prevent corruption and fraud. The European Commission along with four leading European financial institutions has introduced the European Union Initiative for Financial Inclusion. The initiative was created to support SMEs and Startups in Europe.[71] When access to basic mobile account is provided, and regions around Europe are interconnected to be able to send and receive transactions, the excluded population might have equal opportunities to expand and send as well as receive payment for their household or small businesses.[72]

While traditional banks historically did not support financial services to individuals with depraved financial history, modern day Fintech support SMEs and startups alike to sustain and fund them. (SMEs) and startups also contribute to the economy by creating job opportunities and implementing innovation models in their business value proposition.[73] From 2002 to 2010, SMEs created up to 0.9 million jobs annually in European Union, which amounted to an 85% increase in the creation of jobs by small and medium scale enterprises.[74] From 2002 to 2010, micro-businesses contributed 2.4% and small size businesses contributed 0.1% to the UK GDP.[75] Fintech supports various digital finance products such as, payment, deposit, lending and investment. Digital innovation such as e-money, mobile wallet, APIs and ledger technologies have made quick, secured and reliable transactions. In addition, data from internet network, mobile phone and transaction helps create useful data for credit proposals. Peer-2-Peer lending and mobile-only banking have also made their path in innovative finance for robust and flexible lending and deposits, capital investment is prompted by automated robochats

[71] Initiative for Financial Inclusion.
[72] The World Bank 2019.
[73] Gupta 2017.
[74] Kok et al. 2011.
[75] Kok et al. 2011.

and investment advice delivery.[76] Digital finance also generates various opportunities such as expanding access and simplifying the usage of financial products and services. Likewise, accessible and innovative products tailored according to people's need can be designed with the aim of globally delivering services to everyone. Mobile network, technology, applications and other mobile based services have served as a tool to deliver financial products to people. While Fintech is considered as a "game-changer" in the finance industry, governmental involvement and regulations should be implemented to support the Fintech and digital finance companies. [77] Globally, digitalizing government payments such as pension payment, social security and public sector wage could reduce the number of unbanked individuals by 100 million.[78] Utilizing mobile phone to make payment and practice other financial would develop and contribute to the growth of the economy.

4. Methodology- Normative scenario planning

This chapter presents the origins of scenario planning, the use of scenario planning as a strategic planning tool and outlines to the scenario building technique.

4.1 The origins of scenario planning

The first scenario planning strategy appeared in the 19th century. The technique was written by Moltke and Clausewitz for the Prussian military strategists.[79], The military has been using scenario planning as a strategy tool even before the academic adoption.

[76] World Bank et al. 2017.
[77] Buckley et al. 2016.
[78] Demirguc-Kunt et al. 2018.
[79] Bradfield et al. 2005 p.797

Scenario planning was used to support forecasting, policy-making and social forecasting

in the military department during the 1950s and is still carried out today.[80] After World War 2, the United Nations military had difficulties in deciding on funding and production of new weapons.[81] The uncertainty and difficulty in decision making led to a demand in the creation and implementation of a reliable model for decision making and strategy planning in uncertain situations. For the purpose of predicting the unforeseeable future, the Civil Defense and strategic planning at the Rand Corporation started to develop scenario planning.[82]

In the context of business, scenario planning helps to predict the future of the business. Since scenario planning forecasts the effectiveness of various trends, it ultimately enhances the decision-making process and helps businesses to take appropriate steps.[83] The first use of scenario planning in business sector can be traced back to the 1970s by the Royal Dutch Schell company. The company did a study to predict the discontinuity of the oil industry. The approach called, "Horizon planning" was highly appreciated due to its accuracy and effectiveness.[84]

4.2 Normative scenario as a planning tool

Scenario planning is divided into normative and descriptive scenario planning. [109] Descriptive scenario planning presents a set of probable scenarios based on current trends. Normative scenario planning, on the other hand, starts with an end goal and lays

[80] Amer et al. 2013 p.24
[81] Bradfield et al. 2005 p.797
[82] Bradfield et al. 2005 p.799
[83] Amer et al. 2013. p.24
[84] Bradfield et al. 2005 p.799-800
[109] Bradfield et al. 2005. [110] Amer et al. 2013.

out the pathways necessary to reach the pre-determined goal.[110] Normative scenario planning as a strategic planning tool was first introduced by a French philosopher named Gaston Berger. He explained that the future could be freely modeled without necessarily

continuing present events.[85] This perspective introduced the concept of normative planning. According to Durand (1972), the French method consists of four essential steps to generate scenarios. Table 2 explains the four concepts for scenario construction according to normative planning.[112]

Concept	Explanation
Base	In-depth analysis and scanning of the present situation
External context	Social, economic, political, diplomatic, national, international surroundings
Progression	Historical simulation from the base and constraints of the external context
Image of future	Need for establishing cross-section representing reality

Table 2: Concepts of normative scenario construction (own representation based on (Durand 1972))

Normative scenarios create a goal or image of the future. This helps a business to take explicit actions and serve as a guiding vision to reach the determined goal.[86,87] In his book, "Creating Better Futures: Scenario Planning as a Tool for a Better Tomorrow", James A. Ogilvy (2002) differentiates normative scenario planning from normal scenario planning as the former analyzing and designating what companies "*ought to*" do rather than the latter designating the average of "*what is*".[88] Normative scenario planning, also known as "backcasting", traces the trends and tendencies that will ultimately lead to the pre-determined goal. Normative scenario planning assists in

[85] Amer et al. 2013 p.7-31 [112] Durand 1972.

[86] Lyons et al. 2008 p.184-196

[87] Coates 2000.

[88] Slaughter 2003.

developing strategies to meet a pre-specified target. In the paper, normative planning is adopted as a scenario planning tool to meet the pre-specified end goal of financial inclusion through controllable adjustments and researches on current trends in Fintech and digital finance.

4.3 The scenario building technique

The scenario building technique creates predictions of the future by planning long term in highly uncertain environment. Various tools can be used to determine the technique and get results. INKA 4 is a scenario building software developed by Geschka & Partner Unternehmensberatung GmbH, that develops scenarios by analyzing and calculating integrated algorithm, consistency matrix and descriptor probability. A set of areas of influence is determined consisting of various descriptors. The descriptors are polarized based on alternative assumptions. The in-depth analysis conducted in INKA feeds interdependencies to the software to give asserted and dependable results. [89] The scenario planning technique by Schwarz-Geschka et. al. 2012 is presented in the following figure 4.[117]

[89] Schwarz-Geschka et al. 2012. [117] Joshi et al. 2019.

Figure 4:Scenario Planning technique (Schwarz-Geschka et al. 2012)

1. **Structuring and defining the topic:** Initially, the topic and its definition is presented. The scope of the topic along with structure, parameters and current problems are described.

2. **Identifying and structuring areas of influence:** The areas of influence with an impact on the topic is determined. The influencing factor are calculated according to their impact and determined as descriptors in the next step.

3. **Formulation of descriptors and developments of assumptions:** The influencing factors are divided into descriptive parameters (descriptors) according to their characteristics. They must include all possible factors influencing the topic, the past

and current trends, and capture future developments. Assumptions for the scenario target year is made according to forecasts, academic papers and expert knowledge.

4. **Formation and selection of alternative assumptions:** Alternative assumptions or specifications are selected and categorized. The areas of influence, descriptors and specifications are entered in INKA and it calculates the characteristics of all alternative descriptors. Then, crosslinking between all descriptors is estimated through a consistency matrix. Mutually dependent, unrelated, or mutually exclusive specifications are determined.

5. **Development and interpretation of selected impact scenarios:** The comparison between each specification with one another gives an interconnected result from the present to the targeted scenario year.

6. **Introduction and impact analysis of unexpected disruptive events:** Unexpected events are analyzed. Negative events such as natural calamities and positive events such as technological innovation is examined.

7. **Writing the topic scenarios resp. deducting consequences for the task:** Future visions and scenarios are determined by the software. They are graphically presented. Thus, suggestions for future actions can be taken out.

8. **Conceptualizing of measurements and plans:** Conclusively, guidelines for future actions is derived from strategic planning.[90,91,92]

[90] Schwarz-Geschka et al. 2012.
[91] Geschka et al. 2017.
[92] Joshi et al. 2019.

4.4 Areas of Influence

The scenario planning project in the thesis aims to study how financial inclusion can be attained in the Fintech industry by 2030. A time frame of 10 years was taken according to the SDG agenda of 2030. Moreover, various external factors that leads Fintech towards financial inclusion were studied. To understand the general overview and trends in digital financial sector, extensive literature research on the rate of advancement in technology, market, economy and regulations concerning financial inclusion was performed. European cases were studied but the UK was selected as the target market. The UK is considered amongst the fastest growing countries in digital finance and Fintech. A study done by Ankenbrand et. al. (2018), established the UK amongst the top five Fintech hubs around the world. [93] The study analyzed factors such as entrepreneurship and innovation, as well as external dimensions such as technological, political, economic and social factors. However, according to the financial inclusion commission, 1.5 million people are still unbanked in the UK, and even more are underbanked without utilizing their bank account for any financial purposes.[94] While the root cause of individuals being unbanked in developing countries is related to poverty, lack of awareness, gender gap and lack of digital tools such as mobile or

internet, some of the major reasons for households in the UK being unbanked are due to poor credit history, lack of trust in the bank, lack of facilities provided by the banks such as language options, and avoiding bank costs and fees. Study of the UK market and extensive research on the digital finance industry served to collect secondary data and information from various sources. EBSCO, HFU e-library and Google Scholar were used to research scientific papers and gather data collection. Based on the literature

[93] Ankenbrand et al. 2019.
[94] Initiative for Financial Inclusion.

review, the following areas of influence were identified: Market, Technology, Economic and Regulatory. They are illustrated in table 3 and a detailed explanation is given below.

	Market	Technology	Social	Regulatory
Opportunity	Reduce cost of the product and transaction cost Improves quality of the product Helps in increasing choices and flexibility to customer	Implication and accessibility to the excluded population through simple mobile phone and internet service Improves access to safe transaction accounts and encourage their frequent use Enhances user experience and awareness Lower market entry barriers for new startups	Accelerates growth and promotes economic development Connects individual and businesses globally and attracts global market players Improves credit availability Increases productivity due to financial capabilities exposure	Overall economic development Access to financial services for all individuals Reduced cost for the governmental bodies Online and mobile payment for services such as social security and pension distribution which reduces time and cost constraints
Challenges	Low levels of formal financial services Lower income and financial literacy amongst the excluded population Underdeveloped technology and venture capital ecosystems Weak infrastructure	Risks in terms of operational and cyber resilience Protection of customer funds, data protection and privacy, Digital exclusion and market concentration	Difficulty in providing a platform for cross-disciplinary collaboration between banks, Fintechs, startups, mobile network companies and regulatory bodies	Difficulty in ensuring fraud prevention and mitigating regulatory risks Difficulty to provide policies that serve in favor of traditional financial institutions as well as the excluded population Difficulty to develop public-private partnership for effective government policies and financial institutions

Table 3: Opportunities and challenges for areas of influence (own representation from (Berg et al. 2020; Arner et al. 2017))

4.4.1 Market Analysis

Various factors need to be considered when discussing the implementation of proper financial inclusion. While providing a platform for neo-banks to enter the market without hampering the traditional banks, financial and technological aspects need to be addressed along with the implementation of appropriate regulations. [95] Likewise,

[95] Costa and Ehrbeck 2015. [124] Matthews 2019.

governmental policies promoting innovation and providing both security and data protection for the consumers go hand in hand with the accessibility of financial tools and market incentives for the SMEs.[124] While studying the demand and supply for the occurrence of financial exclusion in the market, the main reasons for financial exclusion come down to poverty, lack of accessibility, awareness, and low income on the demand side. Likewise, lack of bank branches in the rural areas, unwillingness to serve the vulnerable, bank timings, language, unsuitable products, abundance of documentation and paperwork are some examples on the supply side that make individuals choose illegal and unsafe procedures to make their financial transactions.[96] Figure 5 shows how capital market can embrace various notions to address inclusion and achieve it. Institutional coordination, access to basic as well as auxiliary financial services on digital platforms and economic stability of the country all play a big role while addressing inclusion in the economy. D_1, D_2 and D_3 portrays the parameters for the market to achieve financial inclusion. S_1 and S_2 are projections for each descriptor and has an assigned probability (for further information, refer to appendix in chapter 10.1).

[96] Costa and Ehrbeck 2015.

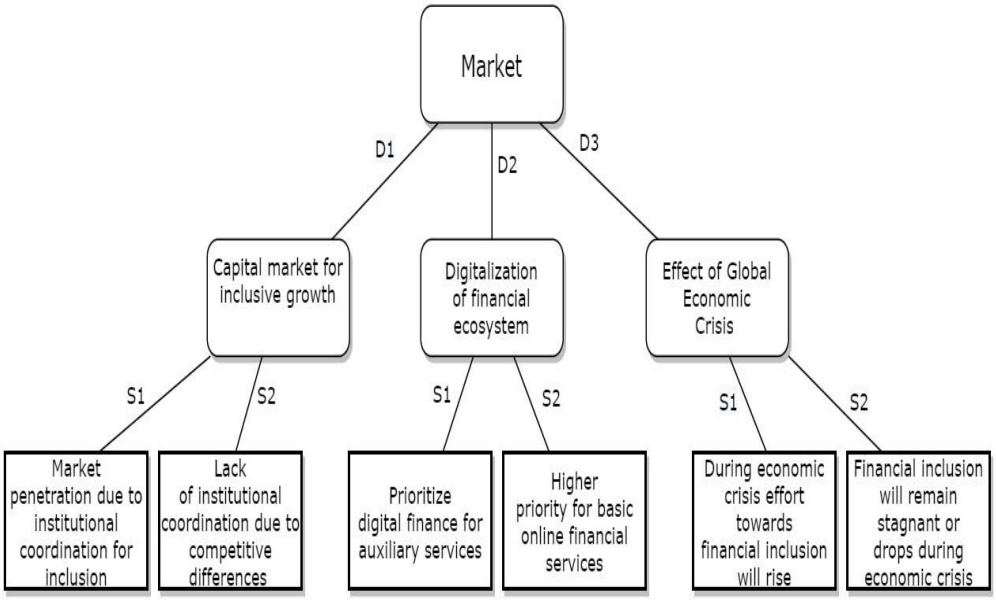

Figure 5: Market analysis for financial inclusion (own representation based on research)

4.4.2 Technological Analysis

Traditional banks have historically offered very little services to the financially excluded people. This is mainly due to their low credit score, which makes distribution costs and information cost for traditional financial service models too high[97]. People living in extreme poverty, in rural areas, immigrants and vulnerable people such as women, disabled people and older generation have little or no access to any financial products such as savings, credit and payment, as they live on the bottom-of-the-pyramid. Technology has recently disrupted the market by improving connectivity, reachability and enabling real-time transactions.[98] In the financial world, technology can boost the accessibility, and help in designing products fitting the needs of the excluded individuals.[99] Figure 6 shows the potential descriptors (D_1, D_2, D_3) that are serving to help attain inclusion in the UK by 2030. Specification (S_1, S_2) determines the plausible

[97] Costa and Ehrbeck 2015 p.54-56
[98] Varghese and Viswanathan 2018.
[99] Varghese and Viswanathan 2018.

situations that could occur to the attainment of financial inclusion (for further information, refer to appendix in chapter 10.1).

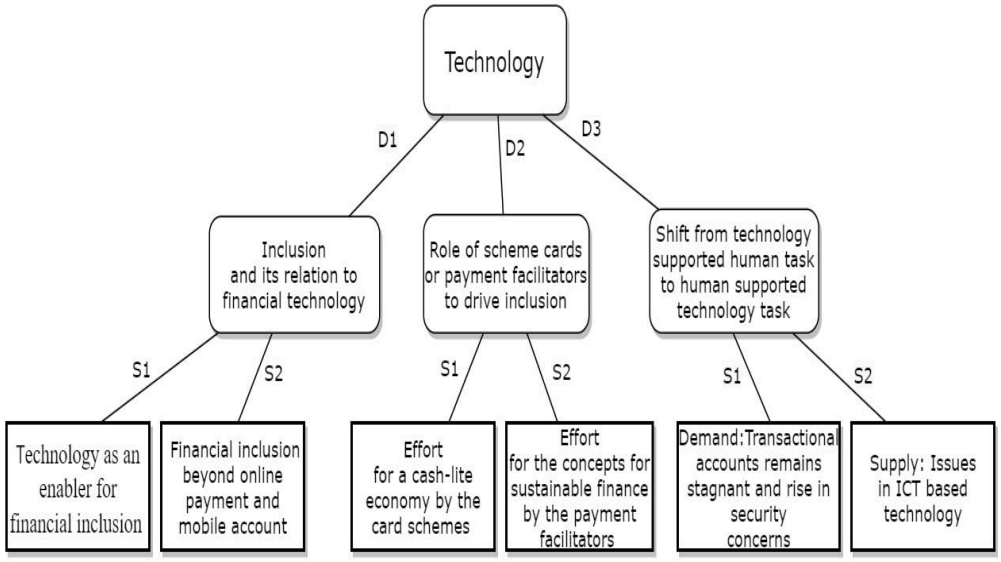

Figure 6: Technological analysis for financial inclusion (own representation based on research)

4.4.3 Social Analysis

It has been established that access to financial service can help reduce cost, improve financial stability and general standard of living of the poor and vulnerable.[100] Likewise, financial education helps individuals to make better financial choices and choose products according to their needs. It also helps them to avoid hidden costs and extra fees on products.[101] When affordable and responsible banking is provided to the unbanked,

[100] Damodaran 2013.
[101] Varghese and Viswanathan 2018. [131]
Baptiste 2019.

they can trade, save, make transactions and invest within the comfort of their home.[131]Social acceptance of financial inclusion is achieved by evading discrimination

from the banks to serve the excluded, providing cost-effective affordable financial products tailored according to the need of the excluded, strengthening credit delivery and products to be tailored to serve the general unbanked population as well.[102,133] Financial institutions and Fintech need to collaborate to close this gap in the market. However, since incumbents have been restricting access to the excluded population to utilize their financial products, the regulations have revolved around this policy. Fintech and neo-banks might have to face this challenge because the registration and transaction process might get complicated at the consumers end. A plausible solution provided by Singh et. al. 2014, recommends the tripartite arrangement between banks, post offices and mobile operators. Using the infrastructures provided by the post office, banks and mobile phone operators can recruit staff members in the post office to help individuals on financial system and most importantly financial inclusion.[103] Figure 7 shows three descriptors along with their stipulations that affect societal constraints, which need to be considered while attaining financial inclusion. D_1, D_2 and D_3 portrays the social

[102] Costa and Ehrbeck 2015.
[133] Brown and Graf 2013.

[103] Singh et al. 2014.

parameters whereas S_1 and S_2 are projections for each descriptor with an assigned probability (for further information, refer to appendix in chapter 10.1).

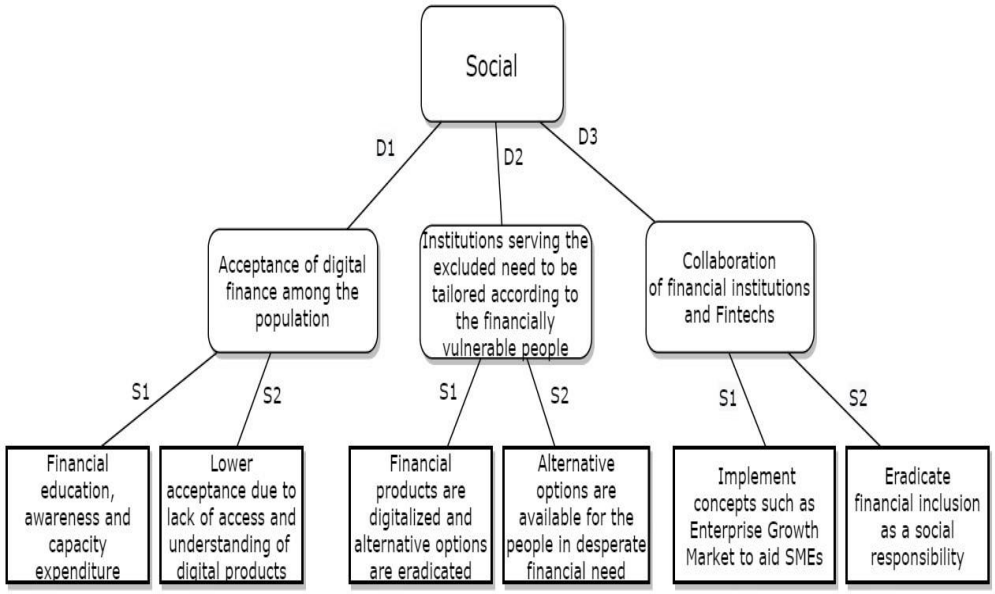

Figure 7: Social analysis for financial inclusion (own representation based on research)

4.4.4 Regulatory Analysis

The crisis to mitigate the risk of increasing international financial interlinkages triggered the first major regulatory focus on Fintech in 1970.[104] Even with the advancement of digitalization and technology in recent years, the effort and investment of various businesses are still difficult to scale if the government support is non-existing.[105] Businesses, especially small scaled businesses and uprising Fintech need a good market entry policy that governs their regulations and benefits them to serve the market. The government should prioritize its involvement of regulations and policies that benefit the new Fintech and startups entering the market to attend the underserved population. Likewise, government could provide a platform to prioritize partnerships with various organizations responsible to deliver the financial products. Mobile companies, network corporation, payment facilitators, banks, neo-banks and Fintech could all serve the market on a single connecting platform.[137] An example of market penetration with the

support of the government is through mobile money.[106] With the support of mobile network operators, local banks and government partnership, mobile account can be used to transfer funds to vulnerable people by the government which saves time and energy for both parties. Although more than half of the population are using mobile phones, only 4.4% of the population had access to mobile or online banking account.[107] This creates a huge market gap in serving the unbanked with financial services and products.

Even though governmental intention might be promoting businesses to serve the underserved, it can have its side effects on other areas. Schemes such as e-KYC can be beneficial for faster and flexible identification. However, this might be a problem for people with unclear legal status or incomplete identification documents. On the other

[104] Demertzis et al. 2018.
[105] Costa and Ehrbeck 2015.
[137] Agarwal et al. 2009.
[106] Singh et al. 2014.
[107] World Bank Group 2018.

hand, regulation protecting the incumbents and the neo-banks might make it difficult for market entry and survival. Various laws and regulations could hinder the institutions from keeping up with the protocols due to the differences in their business model. Figure 8 shows the potential descriptors (D_1, D_2, D_3) leading regulatory bodies to attain inclusion in the UK by 2030. Specification (S_1, S_2) determines the projections for the attainment of financial inclusion (for further information, refer to appendix in chapter 10.1).

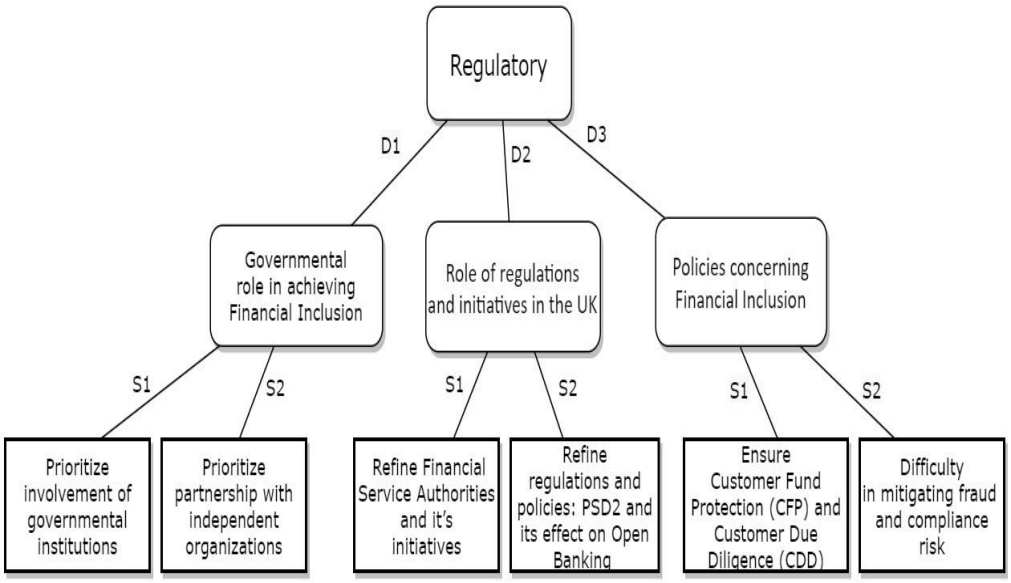

Figure 8: Regulatory analysis for financial inclusion (own representation based on research)

4.5 Process Outline

The normative scenario planning was carried out on the software INKA 4.0. A time scale of 10 years was taken according to the Sustainable Development Goal agenda (SDG 2030). The cloud version of the software was used to support the study. The software takes in areas of influence determining the market, technological, social and regulatory impact on Fintech and its effect on the UK Fintech market. The areas of influence consist of various descriptors as the parameters that project trends that are likely to happen. These descriptors are external influential factors. Specifications or projections are even more specified situations that are most likely to occur with the descriptors. INKA 4.0 allows up to five projections but three are recommended for accurate calculations. Probability for each projection is determined according to the scientific literature and personal judgment. The projections in total must add up to 100%.[108] The descriptors assessment in the consistency matrix and the assignment of values for specifications were based on the judgment of the researcher according to the extensive literature review.

12 descriptors were selected for the calculation of the scenarios. The specifications within each descriptor were juxtaposed. They were either polarized, dependable, contrary, or unrelated depending upon extensive literature review. Figure 9 shows the scale and belonging on the specifications to one another. A consistency matrix determining the relationship of each specifications to one another was formulated in the software. Figure 10 shows the formulation of the consistency matrix. It is a crucial part of the process to determine the results. The software produced five scenarios with the provided descriptors and specifications. The sum of consistency for each scenario

[108] Geschka et al. 2017.

indicates the general quality of the produced scenarios. The consistency sum is based on the quality of descriptors and frequency of their use.

Scale	Meaning
+3	belonging necessarily together, mutually dependent
+2	supporting each other
+1	fits into the same climate
0	unrelated (coexistence possible)
-1	fits badly together
-2	contradictory
-3	mutually exclusive

Figure 9: Scale and meanings for consistency matrix ((Schwarz-Geschka et al. 2012)

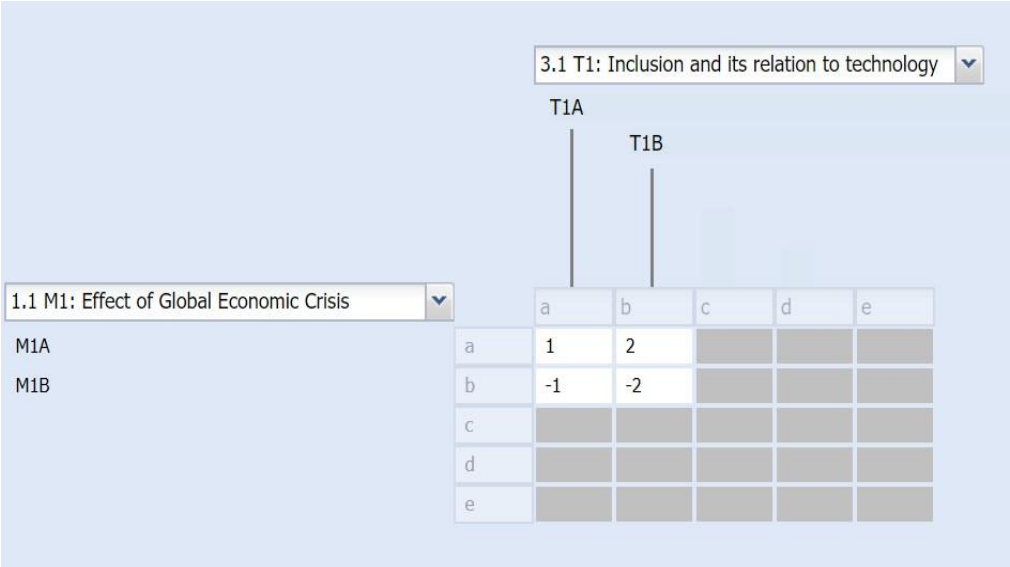

Figure 10: Example of consistency matrix analysis

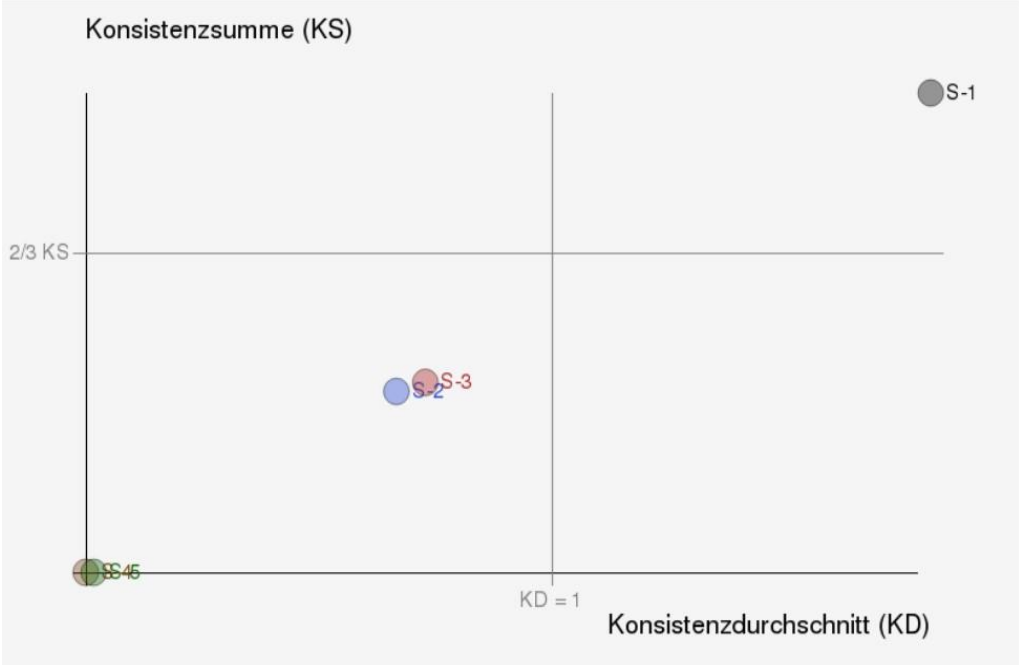

Figure 11: Scenario portfolio

Figure 11 illustrates the ranking of all scenarios. Scenario (S-1) is the most likely scenario to occupy the first position and has the first rank *(R-1).* As Scenario 2 (S-2) and Scenario 3 (S-3) are very close to each other, they are merged to form the second most likely scenario *(R-2),* and it is ranked second. Although Scenario 4 (S-4) and Scenario 5 (S-5) seem to be very close to each other, their probability parameters differ. S-4 has a probability parameter of 46 and S-5 has a probability parameter of 49. Thus, Scenario 5 (S-5) becomes the third most likely scenario *(R-3).* A detailed description of the three selected scenarios is given in the next chapter.

5. Results

5.1 Scenario R-1 (Rank 1)

The future is inclusive!

The selected scenario R-1 has a consistency sum of 83, making it the most likely scenario to occur in 2030. The scenario has a consistency average of 1.41 and a probability parameter of 59.

The selected scenario directs towards a bright future for financial inclusion. In this scenario, inclusion will be implemented with the provision of social, economic, regulatory and technological parameters. Although inclusion was given little or no attention in past times of economic crisis, this is most likely to be different in the future. During a global crisis, inclusion will rise and companies, as well as governmental institutions, will be likely to offer digitalized cashless products to fulfill the individual's needs without sacrificing time, money and energy. Giving the global population access to financial products will help in decreasing the risk of extreme crisis. Financial inclusion will allow households and businesses to recover from a crisis by providing credit facilities and validating regulations according to the economic needs. Higher priority for basic online banking services will be given. Since the inclusion is a pioneer in the financial industry, the next ten years will focus on providing the excluded with basic financial needs such as mobile money account rather than prioritizing advancement of auxiliary services. There will be market penetration due to institutionalized coordination for inclusion. In this scenario, various industry heads will come together to form a financially inclusive community. Mobile and network companies, banks, Fintech and regulators will be provided a platform to work together for the cause of financial service and product accessible to all. Concepts such as Enterprise Growth Market to aid the SMEs will be applied in developed countries such as the UK. Frugal innovation from developing countries will be revered to the OECD countries where the problem of exclusion is still existent. Perhaps the most crucial factor for inclusion, financial education and awareness, will be integrated academically and initiated in school curriculums. The financial products will be digitalized, and the institutions will be tailored according to the financially vulnerable people because alternative financing such as loan sharks and hawala money laundering are illegalized

and strictly monitored. Technology will become the enabler of financial inclusion. As the trend continues, technology will provide easy access to people's needs, make identification faster, easier and more convenient regardless of the geographical, social, or wealth status of the applicant. Major players of scheme cards such as Visa and Mastercard will continue supporting cashless society and digital payments. However, the shift from human-oriented tasks to technology-driven tasks will generate issues on the supply side. ICT based technology will be reengineered and standardized to fit the demands and processing of traditional banks. During reengineering, the needs of the unbanked might not be taken into consideration. Even with advancements in digital technology, technical errors are expected due to the increased use of digital products such as POS terminals and ATMs. Governmental support will be consistent in terms of regulations and policies. In the next ten years, governmental bodies will focus on eradicating exclusion rather than participating in partnerships with independent organizations. However, once the base for coordination and financial support for the vulnerable is set, government might partner with independent organizations. Importance of implementing regulations such as the recent PSD2 change will increase. Policies concerning the security and protection of funds and small businesses will be focused on, and APIs will be constantly updated to compete with fraud and compliance risks. The future will look bright for financial inclusion!

5.2 Scenario R-2 (Rank 2)

Financial Inclusion: A friend or foe for capitalism?

Rank 2 is named R-2 and comprises of two scenarios. S-3 and S-2 have consistency sums of 51 and 50 respectively. Nevertheless, the descriptors are almost complimenting one another. The outcome in scenario S-3 and S-2 are almost identical. As a result, they have been merged as mentioned earlier. The only difference in the descriptor projection occurs in its market and social aspects. It is mentioned in detail in the discussion below.

According to the selected scenario, although a higher priority will be addressed towards inclusion, it might take some additional effort for capitalism to integrate inclusive finance. Digital finance will be prioritized, and inclusion will be given importance in situations such as economic crisis and recession. Higher priority will be given to basic banking services rather than auxiliary financial services for the next ten years. Adaptation to digital finance and knowledge on financial accounts and mobile banking amongst the financially excluded will be implemented. However, rather than penetrating the market by coordinating and partnership with major players in the financial industry, the presented scenario assumes that competitive differences and alteration in business models between traditional and neo-banks might make institutional coordination difficult. Large financial bodies might deny partnerships with SMEs. This might be due to various reasons such as the difference in culture and concept of traditional banks and financial institutions. In this scenario, the traditional banks will not have policies, products and services targeted specifically towards the financially excluded population. Credit facilities for example will only be provided to financially stable people with strong credit history. Conditions such as these will require fundamental policy and operational changes which the traditional banks and institutions might wish to avoid. Since the image of financial inclusion is preached as corporate social responsibility (CSR) with no return on investment (ROI), the capitalist market would need to consider financial inclusion as a profitable business rather than a social responsibility with limited or no outcome. Due to the institutional differences, institutions and financial system might eradicate financial inclusion as a social responsibility. The government plays a vital role in implementing inclusion in the capitalistic market. Various schemes and financial facilities for the excluded population needs to be supported by the government. Along with partnership and support, policymakers and regulators need to monitor big businesses and traditional financial institutors to integrate financial inclusion into the business model as well as into the financial products. Moreover, when the market gap is recognized in the capitalistic society, businesses in collaboration with regulators and government need to partner with the excluded population. Established companies and

banks need to authorize loans to small businesses, collaborate on comparable products and services, support small-size and medium-size companies and their business model and stop creating heavy barriers for the market entry. For instance, with access to digital financial products, no barriers to market entry and limited authorization restrictions, the excluded population and vulnerable SMEs and Fintech will be established and grow internationally to serve the poor and excluded.

5.3 Scenario R-3 (Rank 3)

Beyond digital inclusion: Financial capability leads to development.

The selected scenario S-5 has a consistency sum of 30, making it the third most likely scenario and is named R-3. The scenario supports financial capability along with an inclusive society for overall economic and financial development.

Financial inclusion will be given priority during economic crisis. Digital goods and services will account for recovery during financial crisis along with governmental involvement for services such as low interest, better credit facilities, immediate funds for households and SMEs for innovation and growth. Basic financial services will be prioritized over auxiliary services. Approaching the unbanked with basic financial account for savings and transactions will be given more importance than other valueadded facilities. Financial products will be digitalized and alternative options that hamper the wellbeing of the individuals and the economy will be eradicated. Technology will be enabled as a means for financial inclusion through efforts from corporate society, financial institutions as well as the government. The new players in the market will leverage innovation and technology to a new level that increases access to financial products while decreasing cost and time constraints. Licensed payment facilitators will collaborate with banks and governmental institutions for contributing towards attaining inclusion. Government will partner with various institutions for prosperity and economic development. However, even if players in the financial industry participate with the

support of government, financial inclusion is not possible without the acceptance of its products and services by the commoners. This might occur in various aspects. When proper education and awareness is not provided to the vulnerable population, households and small businesses could still be reluctant to get their financial services from unauthorized illegal sources. The people might prefer alternative sources due to complications in identification (e-KYC) complications, various legal obligations and strict regulations such as omittance of loan for individuals with low credit score which were originally made for fraud prevention. Above all, when there is no interest by the consumers to change their financial practices, little can be done from the industrial and governmental sector. Financial capability is required to implement digital financial offerings. Due to a low demand and need analysis from the vulnerable population, the overall concept of financial inclusion might be hampered. Thus, more than the supply of products and services for inclusion, the demand for inclusion needs to be addressed and proper financial education needs to be introduced to individuals to eradicate the risk of fraud and prevent unrecognized financial opportunities.

6. Discussion of Results

Three scenarios are selected as final amongst the five obtained scenarios. Amongst them, Scenario 3 and 2 were combined as R-2 since the results were similar. The final selected scenarios represent the diversified possibilities on how financial inclusion can be attained in the digital finance sector by the year 2030. The scenarios vary from each other in terms of their technological, regulatory, market and social advancements. The differences between obtained scenarios were relatively small (Appendix 10.3). However, the main differences were identified in the regulatory, market and social aspects.

Concerning the regulatory aspects, R-1 and R-2 differ fundamentally from the scenario ranked third, R-3. While the scenarios ranked first and second incline towards fraud

prevention and higher security concerns for both individuals as well as companies, the scenario ranked third suggests that it might be difficult to mitigate risk of fraud due to digitalization being relatively new in the finance industry. Thus, very few preventive measures for concerns such as identity theft, phishing and online scam exist. Another key aspect for differentiating between the scenarios is the collaboration of financial institutions and Fintech. While there might be market penetration due to coordination and partnership in scenario ranked first (R-1), the capitalistic aspect of profit maximization might eradicate the entire ideology of financial inclusion as a social responsibility in the scenarios ranked second (R-2). Likewise, due to lack of both financial literacy and financial capability, less engagement of consumers might demotivate institutions to collaborate with Fintech, as suggested in the third ranked scenario (R-3). The customers might themselves be reluctant to try out digitalized financial products and services due to their vulnerability, lack of financial education and extensive rules and regulations, as suggested in the third ranked scenario (R-3). The scenario (S-4) with the consistency sum of 30 was not considered for the result although the consistency sum equates to that of S-5 (R-3). This is due to the nature of the result obtained in S-4. There were no major differences between S-4 and both S-2 and S-3, besides one descriptor respectively (M3 and S1, see chapter 10.3 for more information). Further, S-4 yielded a significantly lower consistency sum compared to S-2 and S-3. Thus, the researcher chose not to perform an in-depth analysis on S-4. While S-5 showed an equally low consistency sum as S-4, it showed large differences in key areas compared to both S-2 and S-3 and was therefore selected for further analysis.

The results provide considerable insights into the steps that need to be taken to attain inclusion. They also provide a spectrum of various plausible future projections. Due to the avid use of the software, current information and literature review, the findings of this research project can be viewed as valid estimations.

7. Summary

The thesis aims to understand how financial inclusion can be achieved in the UK by the year 2030. It provides directives towards investigating possible scenarios of how inclusion can be achieved. Due to the nature of the thesis, a prominent target of achievement of financial inclusion had already been established. While doing so, it also underlines the various steps that must be considered in order to implement financial inclusion, digital awareness, financial capability and development amongst the vulnerable and excluded population by the year 2030. To examine and identify the drivers of inclusion, four areas of influence were studied. Technological, market, social, and technological aspects and their relation to the attainment of financial inclusion were extensively researched. Based on a diligent literature review, a methodology was set to calculate the areas of influence along with its various descriptors and specifications. After the descriptive parameters were set along with two projections each for every descriptor, the scenario planning technique was used to generate scenarios reliable for inclusive finance. Scenario planning software INKA 4 was used to calculate the consistency matrix and probability of each projection to the other to find the relation and likeliness of occurrence. A total of twelve descriptors with twenty-four projections were selected and constructed. The relationships of each descriptor with the other were assessed and incorporated into the consistency matrix. The software developed five plausible scenarios out of which four were selected for scenario planning calculation. Two scenarios were merged as they had large overall similarities. The three most credible scenarios were ranked according to their consistency sum. The final scenarios, which are based on the developed descriptors and their respective projections, ultimately aim to outline the answer to the research question on how financial inclusion can be attained in the UK by 2030. With the collaboration of technology, regulatory support, government-market partnership and financial education, financial exclusion can be achieved in the upcoming ten years.

Conclusively, the thesis has produced three final scenarios on how financial inclusion is possible to be achieved. While the scenario ranked first (R-1) concentrates on key players from the financial institutions collaborating with microfinances and Fintech, the scenario ranked second (R-2) concentrates on government and regulatory bodies collaborating and promoting a free market for SMEs to thrive. This scenario also suggests API and ICT to works towards fraud prevention and security management, and the capitalistic market to move towards closing the gap between the rich and the poor. The scenario ranked third (R-3) suggests that when proper financial education is provided, financial capability of the consumer will be utilized which will ultimately lead towards financial inclusion.

8. Conclusion

The results indicate three plausible scenarios to consider while attaining financial inclusion. The research question put forward at the beginning of the paper, "How will the rate of advancement in technology, environment, economy and politics affect financial inclusion in the Fintech industry? How can financial inclusion be attained in the European Fintech sector by 2030?", studies the various technological, market, social and regulatory aspects for achieving financial inclusion. The software narrowed it down to three possible scenarios on how the way towards inclusion could look like. The scenario ranked first (R-1) builds the future of inclusion with a collaboration and cooperation of important parties such as banks, government, network mobile companies and consumers. When raising financial awareness and literacy are prioritized, vulnerable people will be able to make efficient choices. ICT based issues will arise, but risk and fraud will be mitigated by advanced technology. The scenario ranked second (R-2) depicts a path focused on the supply side of inclusion. It portrays a scenario where financial inclusion can be achieved when the capitalistic market collaborates with the government to serve the underserved. However, additional effort would be required for inclusive finance to be integrated in the market. For instance, government should open

the market to both traditional and new players. Similarly, collaboration of regulatory bodies and license payment facilitators supporting Fintech and SMEs could play a vital role in implementing inclusion. Policymakers and regulators need to monitor big businesses and traditional financial institutions to integrate financial inclusion. They need to realize the market potential at the bottom of the pyramid. The scenario ranked third (R-3) profoundly supports financial education, digital literacy, awareness of financial tools and products as well as willingness on utilizing their financial capabilities. This along with an inclusive society will bring overall economic and financial development.

The topic of financial inclusion will remain relevant in the next ten years. Although there will be collaboration between traditional and neo-banks, competition will still exist. To survive in this competitive market, the government should play a vital role in allowing market entry to the new players and ease regulations that would give an unfair advantage to traditional big banks and financial institutions. Further, Fintech and businesses proving products need to tailor their services according to the need of the vulnerable people for them to accept the new technological tools. The demand for digital finance will be leveraged from strong financial knowledge to the vulnerable people and should be implemented in school curriculums for a sustainable future.

In conclusion, the results depict different scenarios on how financial inclusion can be achieved in the UK by 2030. Thorough analysis of these scenarios and assessment of their differences in key aspects such as financial literacy, ecosystem partnership, digitalization of payment and other financial products, free information on products and services, specified financial products designed to attain peoples need, government support and regulatory sustenance could show that there are multiple ways to achieve the given goal.

9. Limitations

The limitations regarding the topic of financial inclusion are discussed below. Further, the limitation with the software and further suggestions are given.

Implementing financial inclusion offers many benefits but faces difficulties as well. Financial inclusion corresponds to all the aspects connected to achieving inclusion such as education, access to internet and digital products, financial services tailored to customer's need and healthier regulatory practices. Although 93 percent of the adult population in developed countries have access to mobile phones, the number is lower in developing countries with only 79 percent of the adult population having access to a mobile phone.[109] The Findex data (2018) also suggests that the majority of the people having mobile phones are men with a gender gap of 10 percent.[142] Network issues, slow internet speed and connectivity problems in rural areas can also contribute to financial exclusion. There will be no inclusive economy while the vulnerable people do not have access to products and services that help them challenge exclusion. Since Fintech companies have only recently entered the market, there might be hesitation from the population to indulge in the applications and websites due to lack of trust and complication in terms and conditions. Some Fintech still charge hidden fees and services fees which might force the vulnerable population to switch back to unauthorized and high risk "middlemen". The field of financial technology has only been researched and implemented only for few years. Furthermore, a black swan event (i.e. a completely unexpected and unpredictable turn of events causing irreversible disruption) is per definition always possible, especially in such an ever-changing and fast-growing field.[143,110,111]

[109] Demirguc-Kunt et al. 2018. p. 86
[142] Demirguc-Kunt et al. 2018 p.86
[143] Ketterer 2017.
[110] Aijaz et al. 2017 p.1030-1039
[111] Malady 2016 p.389-401

The results obtained from the software INKA have some limitations as well. It is plausible that these limitations could influence the obtained results. Probabilities were given according to the secondary research and the consistency matrix was formed out of the author's judgment. Firstly, due to the nature of the thesis, which used normative scenario planning, the future end-goal of financial inclusion taking place in the UK by the year 2030 was predetermined as a starting point. If this assumption is proven to be false, then the predicted scenarios leading up to this goal cannot be true either.

Secondly, two scenarios with different consistency sum were merged into one due to the similar nature of the descriptors. This might have altered the results of the scenario

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ranked second (R-3). It is important to understand that the developed scenarios for the year 2030 cannot be considered a precise prediction of the future.

Although there are limitations, the results provide an in-depth analysis of factors influencing financial inclusion. Several courses of action can be derived from this thesis on how the UK along with its regulators, government and financial institutions can shift towards a path of inclusive finance and ultimately towards prosperity and economic development for all.

10. Appendix

10.1 List of final descriptors

Market Analysis

Descriptor Name: Capital market for inclusive growth

Area of Influence: Market

Current Situation: Although capital market might not be directly proportionate to an inclusive market, it is nevertheless attainable. Capital market promotes innovation on new products as well as deliver services according to the consumers need. Tailoring this with equal wealth distribution and availability of financial products to the entire population, financial inclusion can support a rational capital market. Awareness, education on financial products, rational investment and better segmentation of credit facilities will help the investors and borrowers will achieve reliable return. The market needs to strategize the distribution of wealth to attain a sustainable finance.

Specification A:

-**Name:** Market penetration due to institutional coordination for inclusion

-**Description:** Extensive oppression and competition exist in the capitalistic economy. Capital market institutions and organizations need to work together to cross-sell and integrate using each other's innovative reference to serve the community. To achieve inclusion in capitalism, the market needs to view financial inclusion not as a burden or a corporate responsibility, but as a benefit for the businesses and ultimately for the economy. If companies that support inclusion work together with traditional financial institutions such as banks, post offices and other agents, the possibility of equal capital distribution, counseling and distribution of financial services will rise.

- **Reason:** Capital market needs to invest heavily on small and medium scale enterprises. SMEs are the backbone for the economy as it funds the investment in market rather than investing in frozen assets with low or no return. SMEs should be traded in the stock market. Heavy investment in SMEs with better credit facilities should be facilitated by the financial institutions. For this to occur, SMEs with innovation and product knowledge should work together with traditional banks that has better capitalization, asset management and investment influence. The market can penetrate better when cross-selling amongst banks, brokers, traditional institutions, Fintech, traders, and governmental organizations is possible. This creates better investment, participation and coordination amongst the corporations and provides a single platform to serve the economy. Substantial flow of finances and awareness on investment rather than freezing asset creates a stagnation for the economy. Instead of savings being deposit into fixed accounts, the market can convert it towards investment and capital products. This creates a habit of investment for the poor households to participate in the capital market and invest in both personal as well as economic growth.

- **Probability:** 80% **Specification B:**

- **Name:** Lack of institutional coordination due to competitive differences

- **Description:** Large financial bodies are often denying partnerships with SMEs to support financially excluded population. This occurs due to the image of financial inclusion being preached as a corporate social responsibility with little or no ROI. The market needs to consider financial inclusion as a profitable business rather than a social responsibility with limited or no outcome.

- **Reason:** The economy should invest into Fintech and SMEs directed towards money transfers, online real time payment apps, and social benefit apps as they drive the future of payment. Meanwhile, it should not be forgotten that these services are required not only for the financially included population with knowledge on finance and an active

bank account, but also for those who are unbanked and unaware of their financial capabilities. There is a huge market potential for the excluded population in the market. They need access to basic financial products such as saving and payment, but do not have proper knowledge or access. Traditional banks on the other hand do not want to invest in SMEs and Fintech actively working for inclusion due to less ROI. Another reason traditional bank does not coordinate with neo-banks and Fintech is due to competitive differences and difference in business model. However, there is an untapped market for people at the BOP, who do not get access to financial products. With a business model providing user-friendly and simplified financial products, the untouched market can be penetrated to provide a better, faster and reliable service. According to a 2019 Statista report, only 5.1% of the total population in UK invested in stock market. The saving rate of households in UK was 6.2% in 2019, most of which is converted in frozen assets or fixed accounts. There is a big prospect of channeling these capitals into investment in the market. Cooperation between traditional and neo-banks can lead to innovative partnership with capital to provide access for the vulnerable individuals to invest in the economy.

-**Probability:** 20% **References:**

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Descriptor Name: Digitalization of financial ecosystem

Area of Influence: Market

Current Situation: The initial step towards financial inclusion as discussed above is to provide access of basic financial products to the unbanked, excluded and unreached population. Alliance for Financial Inclusion (AFI) is an international policy maker specializing in financial inclusion for the vulnerable, poor and the unbanked. According to AFI, companies need to provide accessible products and services to. Meanwhile, regulatory bodies must address the need for financial exclusion by providing better access to the unbanked through awareness programs, helpful products and inclusive policies throughout the world. Financial products, from basic bank accounts to auxiliary services offering deposits, such as lending and transfer, insurance, remittance and trading has been accessible to many parts of the world, mainly focusing on the emerging and developing countries. Nevertheless, developed countries such as the UK still face difficulty to access convenience and low-cost products for making payment, saving, investing, insurance, pension, remittance or trading. This drawback in the financial ecosystem is addressed by the Institute for Financial Inclusion. Although statistics such as the Findex data conducted by the World Bank shows that 96.4% of the total UK population have a financial institution account, there are nevertheless 1.3 million unbanked population with no access to mobile banking or online financial account in the UK.

Specification A:

- **Name:** Prioritizing digital financial services for auxiliary financial services

- **Description:** Numerous households depend on remittance being sent back home by their family members. Similarly, vulnerable part of the population does not have an insurance plan or pension scheme for their old age or during emergencies. Many unbanked family's needs to have a reliable source to receive money directly to online banking so that they can track the transaction and get notifications. These auxiliary services such as insurance, pension funds and remittance need to be prioritized for digitalization. Regulatory and insurance products have already started to use technology for providing services to the customers. The use of regtech and insurtech is becoming more popular. When secondary services such as remittance and pension funds are digitalized, other basic financial services such as savings and credit will follow the use of technology for better, faster and robust products.

- **Reason:** Auxiliary services are secondary financial products that serve the customers besides the primary products such as saving, payment and investment. Remittance, insurance and pension funds are also services that banks provide. Amongst these products, remittance in the past years have gained popularity due to globalization and international employment. Due to digitalization, we can send money to any part of the world at real time. Most of today's population live abroad as expats or migrants. They send money back to their families while working abroad. Most of these transactions are done by 3rd parties or through family members traveling back home. However, majority of the population are still lacking the basic tools and knowledge for online and mobile banking. Findex data concludes that 16% of the 260million unbanked people in developing countries are still using over the counter (OTC) services for receiving and sending money internationally. These OTC services such as Western Union are comparatively better than cash remit. Nevertheless, the hassle can be reduced by account ownership. According to the Institute for Public Policy Research, 5.5 million of the British population were living abroad in 2006. Using mobile or online device to

send back remittance to their family and friends is more efficient than OCT or cash remit. For the remittance service to flourish towards the unbanked and financially excluded, government and regulatory bodies from various countries should join forces and enable legal and political guidelines to the financially excluded population. Regulators on the other hand can ensure the safety and security of the transaction and increase encouragement on digital remittance for migrant workers.

- **Probability:** 45% **Specification B:**

- **Name:** Higher priority for basic online banking services

- **Description:** The excluded population with no payment accounts are denied access to house ownership, credits or online discounted cost. Before approaching the secondary financial needs of the people, institutions should consider first providing the unbanked with a basic financial account for saving and payment. This problem will be solved by the adaptation and knowledge of online accounts and mobile banking amongst the financially excluded.

- **Reason:** The connection between the incumbents and the new generation is slowly degrading as the new generation has become technologically digitalized. According to the 2015 Ernst and Young Fintech adaptation index, money transfer and payments take the highest scope with 50% of the online platform being used for payments and transfers. Besides, cryptocurrency, bitcoin, regtech and other Fintech trends have digitalized the value of monetary transactions into reliable, convenient and secure ways. Individuals are looking towards a protected and quicker method to lend, transfer and save their finance for the future to avoid uncertainties. During these situations, online access to their transactions becomes the most reliable and attainable source for the underserved. According to a study conducted by the Center for Financial Inclusion UK, the sample population who received their social benefits online rather than in the traditional manner resulted in saving a total of 20 hours in commute and wait time. Thus, before

the auxiliary services, the unbanked need to familiarize themselves into the digitalization of financial goods. Digitalizing basic banking transactions will enhance economic empowerment and productivity.

-**Probability:** 55% **References:**

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Descriptor Name: Effect of Global Economic Crisis

Area of Influence: Market

Current Situation: A global economic crisis occurs due to various reason. Some of the past crisis resulted in a great imbalance between demand and supply in the market. An example of economic crisis is the great recession of 2007-2008 affecting the entire world. The UK was predominantly hit with many of banking institutions being nationalized and big institutions forced to raising or selling their capital shares. Banks reduced credit offering and real estate market crashed. Nevertheless, entrepreneurs saw an opportunity to utilize the digitalization of financial industry amidst the great fall for upbringing a transparent, user friendly and reliable form of banking.

Specification A:

-**Name:** During economic crisis effort towards financial inclusion will rise

-**Description:** Giving the global population access to the financial products is attainable even when the economy suffers from financial crisis.

-**Reason:** Some reasons for an economy to collapse or shift towards recession are due to a calamity or global pandemic. Banking, payment, financial management, capital raising, deposits and lending are all needed more than ever during a crisis. Crisis causes disruption in market discipline, regulation, and supervision. Thus, new policies and governmental regulations need to be established. Financial inclusion also accounts for individual households and SMEs to recover from the crisis and most importantly get back access and visibility to their basic financial needs. The most important measure is to collaborate with the government to serve the businesses and households that have been particularly affected during the crisis and offer them banking facilities such as low interest credit or digital banking products. In this manner, any crisis can be an opportunity to accelerate innovation and drive economic growth.

-**Probability:** 40% **Specification B:**

-**Name:** Financial inclusion will remain stagnant or fall during the crisis

-**Description:** Financial inclusion is disrupted by the economic condition of the world as it is not the topmost priority for the government during a crisis. Economic crisis brings disturbance to the financial market. Unemployment rises and cost of goods increases.

This effect causes further gap between the unbanked population and financial inclusion.

-**Reason:** Associations promoting financial inclusion such as microfinance institutions are not the uttermost priority when it comes to a global economic crisis. Savings, emergency loans and grants and loans are required for businesses that contribute the most to the economy. In the UK where 1.3 million of its population are still unbanked, these uncertainties lead households and businesses to borrow at high interest from their friends and family to keep their financial activities alive. They borrow at high interest rate with very little or almost no income generated. It becomes a huge challenge to attain the financial inclusion target as most people are further pushed towards financial exclusion. Perhaps during this time, the attainment of a global financial inclusion is not the uttermost target for the population as well as the government.

-**Probability:** 60% **References:**

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Technological Analysis

Descriptor Name: Inclusion and its relation to financial technology

Area of Influence:
Technology

Current Situation: Billions of people around the world are denied access to financial products and services. Deprived of payments and commercial activities, individuals do not have access to digital accounts. Thus, many spend enormous amount of time to deposit or withdraw cash due to reasons such as commute time, expenses, queue and errors. Likewise, credit and insurance are often done from alternative accounts and third parties that are not always trustworthy. Amidst these circumstances, Fintech are rising with a mission to provide financial facilities to the entire population. They are equally trying to maintain their funding and financial relationship with investors. Fintech needs support from the government and the traditional financial institutions as well as payment facilitators and card schemes to set their value proposition of proper integration and of open banking to the customers.

Specification A:

-**Name:** Technology as an enabler for financial inclusion

-**Description:** Today, young adults and tech professionals are dependent towards technology for their financial activities. One of the main reasons is due to its real time transfer, flexibility, reduced hassle and less time consumption. But the main reason for payment to be digitalized is due to its availability. While financial technology provides

easy access to people's financial needs, it also makes transactions easier due to its convenience. These new players are leveraging on application that make financing practical and automated. It increases access to the payment processes while decreasing cost both to the companies as well as the customers. Insurance on the other hand, have progressed a lot due of technology.

Insurance has turned into insurtech, by using technology in the current insurance models. The combination of regtech, IoT and machine learning understand patterns and learn about the usage of insured goods and offer the best possible pricing for these goods. Additionally, big data and data analytics store abundance of information on risk analysis and tailor the insurance products accordingly. The description below mentions how some Fintech foresee the future of technology in finance and enabling digitalization to achieve financial inclusion amongst the population, and work towards a digitalized future.

-**Reason:**

Digital payment: The UK has a large platform for digital payment. The payment ecosystem offers many upcoming startups tackling the issue of financial inclusion as the market entry is relaxed. Fintech startups like *Monese* provide complete banking services including withdrawal, deposit, payment and local as well as international money transfer, all within seconds in the comfort of the mobile phone. The startup does not run a credit check towards its customers as well as limits its time on account registration and e-KYC for its customers.

Insurance: Companies like *BIMA* work to provide insurance in emerging market at affordable costs. They partner with various local distribution partners such as mobile operators, financial institutions and banks. The UK particularly does not have a fintech addressed towards life insurance and reinsurance that has received recognition. Although startups like *Laka* and *Deemly* are gaining popularity, they focus on asset

insurance for the time being. This creates an opportunity to collaborate with big insurance companies to fill the gap between insurance and technology.

-**Probability:** 60% **Specification B:**

-**Name:** Financial inclusion beyond online payment and mobile account

-**Description:** Digitalization has helped small businesses and households to access saving accounts which was previously hindered due to the lack of financially exclusion. It has also been easier for the Fintech to onboard its customers and automate the data and other necessary information. While opening a financial account, identification requirements such as KYC has been digitalized and automated for better accessibility of savings and investment products. Similarly, transparency, customer rights and data protection has been updated due to digitalization. Fintech are using data and IoT to analyze the creditworthiness of a business or household without running a background check on the credit score of the individual. Consenting digital credit has saved time for the application of loan and fraud prevention has been rationalized at the same time. However, critics argue that technology is not the only aspect towards attaining financial inclusion.

-**Reason:**

Although digitalization leads a path towards inclusion for the vulnerable, there are other factors that have equal importance when it comes to financial inclusion for the excluded population. Even before technology is utilized, companies and institutions working towards attaining financial inclusion must understand the concept of financial capabilities. People need to understand and evaluate their finances before tackling into technology for saving and payment of goods and services. People need to be able to manage their money well and maximize the use of financial services available in the market; by both digital and traditional methods. It is important to understand the consumers attitude towards financing, budgeting, saving and investing. The first step towards attaining and maintaining financial capability is awareness of financial products

in the market and educating the people on the financial services. Savings, pension and debt guidance and advice is provided by the UK government HM Treasury's Single Financial Guidance Body (SFGB). The SFGB collaborates with governmental bodies such as the Money Advice Service (MAS), The Pensions Advisory Service (TPAS) and Pension Wise to provide financial advice to the ones in need. The UK government has planned to tackle the problem further by providing a space for these lenders to take control of their finances and provide advice to mitigate them out of the debt.

-**Probability:** 40% **References:**

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Descriptor Name: Role of scheme cards and payment facilitators

Area of Influence: Technology

Current Situation: With the government, economy and independent organizations trying to achieve financial inclusion, the card schemes and payment facilitators should equally contribute in the process. Card schemes such as Mastercard and VISA have been actively participating in projects and initiations to tackle the problem of financial inclusion. Mastercard claims the major issues while solving the problem of exclusion occurs when most organizations do not try to understand inclusion with its specificities. Card schemes and payment facilitators need to address the minor but complex situations and start from a bottom up approach. Payment facilitators with a banking license can partner with the government to provide government disbursement card to the consumers. Since card schemes have the authority to distribute license, they can also collaborate with Fintech and payment facilitator companies to push the government regulations towards digitalization of wage, pension funds, prepaid cards and e-wallet. Furthermore, partnership with mobile networks, local SMEs and microfinance will address the financial problem on the local community.

Specification A:

-**Name:** Effort for a cash-lite economy by the card schemes

-**Description:** Card schemes allow financial institutions and Fintech to become a member and achieve debit and credit card license. They are payment network linked to various payment card. The card provider needs to be a member of the card scheme to obtain license for distributing bank cards. This allows the card provider to issue and acquire card operations from the merchant and the cardholder. Most common card schemes are Visa, Mastercard, Maestro and American Express. Besides introducing private projects to educate and facilitate inclusion, they can build a bridge between Fintech and the financially vulnerable.

-**Reason:** Initiatives from leading card schemes such as Mastercard and Visa have lowered the gap between financially excluded people and the products and services that

could potentially help to foster a better financial health. One such initiative by Mastercard is the Mastercard Center for Inclusive Growth. It commits on connecting financially excluded people worldwide and giving them a platform to have access to financial products. Mastercard is initiating the project via utilizing their digital payment technology rather than portraying it as corporate social responsibility. They are collaborating with public and private sectors, government and non-governmental organizations. Mastercard has tackled this situation by initiating projects to digitizing the payment process and providing a digital marketspace for farmers in agricultural sector. The card scheme also provides data and financial platform to the small scale and wholesale traders. This helps them to secure their earnings and make informed decisionmaking while being connected to other local and global marketplace digitally.

Visa on the other hand, is taking initiative to tackle financial inclusion through empowering SMEs, advocating financial education as well as partnering with financial institutions and Fintech. Visa offers virtual Visa prepaid debit cards and fund Fintech that are embarking on the issue of financial inclusion. Similarly, disbursement of wages and product innovation are forming alliance globally to train and shares technical payment and policy insights. Visa has also aligned with external organizations such as Center for Financial Inclusion and Citi Group to provide access to the payment, credit tools, insurance and savings tools for all the vulnerable individuals of the society.

-**Probability:** 65% **Specification B:**

-**Name:** Effort for the concept for sustainable finance by the payment facilitators

-**Description:** Most of the financially excluded people are not allowed in the financial circle due to reasons such as poverty, geographically unreachable, ignorance, cultural and societal differences, gender differences, poverty, lack of access to financial knowledge, old age or disability. Although card schemes have been initiating projects to challenge the problem of exclusion, it is only a single part in the entire digital payment process. Payment facilitators companies are the link between card schemes,

banks and government policy makers. They can work together to bring upon an attractive yet simple model targeting the excluded population in collaboration with the abovementioned entities.

- **Reason:** Socializing the financial products is a good way to start implementing inclusion for payment facilitator companies. An example of direct transaction achieved by consumers without a having a financial institution present is Peer 2 Peer (P2P) lending. P2P has become popular in the past few years as it allows lending and funding without having any financial entities present in real time. Fintech can advertise this product digitally amongst the excluded population. In addition to making the products and services attractive to the excluded population, facilitators and institutions need to focus on problem solving of the people and their products should include necessary factors that are beneficial to the vulnerable part of the society. Fintech providing financial advisory elevates the understanding of finances. Likewise, partnering with the government for products such as government pension disbursement card, as well as investing on SMEs and Fintech for financial inclusion will help confront the exclusion problem. The use of blockchain can help to streamline data, manage it and check transactions much faster and effectively. Lastly, biometrics has digitalized the world of identity keeping. While opening financial accounts, many companies are providing facilities to digitalized identification processing such as iris recognition and self-portraits. Payment facilitator companies such as *Ingenico* has initiated inclusion supportive products such as supporting the mobile money services and offering the agents-enrolled individuals a full financial portfolio such as account management, credits, savings and insurances. They also offer services through agents to securely make terminal transaction until the people are confident enough to use it on their own.

- **Probability:** 35% **References:**

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Descriptor Name: Shift from technology supported human tasks to human supported technology-driven tasks

Area of Influence: Technology

Current Situation: Technology driven products such a mobile money or virtual currency lack the trust of individuals. Although they are slowly being accepted amongst the new generation, the uninformed and unbanked population still depend upon the traditional methods of banking since they question the security and reliability of digital products. It took humans several years to integrate technology driven products in our financial activities. ATMs and online banking website have recently replaced checks

and several visits to the bank. Nevertheless, shifting to complete human driven technology with less personal interaction might not be preferred by all; especially the people who have little or no information on digital financial goods.

Specification A:

- **Name:** The demand side: Transactional accounts remains stagnant and security concerns will rise

- **Description:** Security regarding information technology revolving around financial products is extremely important. Especially when the institutions target the vulnerable population, companies must understand the cost and importance of security and data protection for the unbanked. Since the Fintech industry is comparatively new, there might be immense amount of criticism and loss of trust for the industry.
- **Reason:** High security measurements are required to secure the financial transactions. Nevertheless, security measures such as second factor authentication, PIN requirement, TAN requirement and SMS alerts are additional hassle to the already deprived and vulnerable individuals. This may cause the customer to drop out of the product. Furthermore, even though Fintech and startup firms have accelerated their model to fit the needs of individuals without any hassle and maximum security, there is no confirmation that the individuals and companies will actively utilize the bank account. Opening a basic online baking account is only the initial step. Running the account, understand security concerns and responsibilities as a customer, understanding various functions of the account and actively utilizing the account needs participation and willingness from the people.

- **Probability:** 40% **Specification B:**

- **Name:** The supply side: Issues in ICT based technology

- **Description:** Information and communication technology (ICT) based model combines the utilization of telecommunication, digitalization of the electronic portable devices and software as well as cloud storage. Digital products and information software play a big part in the usage of ICT in finance. Since traditional financing does not focus on the excluded and unbanked, the modern business processes will be reengineered for standardization. When ICT based technology is provided, other additional issues such as value-added technology (online payment of utilities and communication bills) and improving customer service needs to be mentioned.

- **Reason:** There is a high possibility of technical problems arising due to the usage of ICT based system. Although the transactions will be better, faster and more flexible in real time payment, technical problems during transactions are inevitable. POS terminals might report bug and stop working, ATM card might not function, and online transactions might get disturbed due to faulty internet connection. To solve these issues, there are not enough technical providers or ICT facilitators present for immediate customer service of the banks and company branches in rural areas. Furthermore, the technical support might not be helpful due to language barrier or lack of communication facility on both the customer's as well as the company's side. Although ICT based financial products will ease the future for the unbanked, it will be difficult to avoid the technical issues that will ultimately hinder the confidence in digital financial goods.

- **Probability:** 60% **References:**

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Social Analysis

Descriptor Name: Acceptance of digital finance amongst the population
Area of Influence: Social

Current Situation: Although technology is serving to tailor the need of the financially vulnerable, the society first needs to accept and integrate digitalized financial products in a reliable and accessible manner. Since most of the financially excluded population are either living in poverty, discriminated by gender roles, disabled or are socially excluded, it keeps the vulnerable people of the society from understanding discrimination. For e.g. the vulnerable people are unaware that they are usually being charged more than other customers as they do not have experience or knowledge.

Specification A:

-**Name:** Financial education, awareness and capacity expenditure

-**Description:** Young adults are shaping the future. They also utilize most of the digital platforms, social media and other online services. Educating them from young age on finances, savings and expenditure can shape them to integrate banking and manage financial activities into their lives from young age.

- **Reason:** To achieve sustainable finance, the future generation needs to have sincere interest, financial skills and economic knowledge. This helps them from a young age to save, invest, avoid high cost products and be attentive of insurance, credit and investment. The Metropolitan Borough of Gateshead, England linked personal development of a person to financial education. It stated that financial capability is rooted into understanding what an individual is deprived of. Financial capability is achieved when individuals are taught from a younger age about their financial responsibilities and choices. In England, financial education was integrated into secondary level of schooling since 2014. Nevertheless, there is no integration of financial education in primary level. The UK Parliament states that financial education in the curriculum still does not apply to two thirds of all the state secondary schools in England.
- **Probability:** 55% **Specification B:**

- **Name:** Lower acceptance due to lack of access and knowledge of digital products

- **Description:** Along with Fintech serving the financially challenged, education and awareness of financial products being available in the market is crucial for economic development amongst the excluded population. Inclusion should also integrate education and market transparency for avoiding unwanted risk. Understanding the business model, being transparent and avoiding mishaps such as market manipulation or abuse is crucial for the upcoming Fintech if they want to reach the untapped excluded market. Nevertheless, excluded population still might be reluctant to digital products due to lack of education, unwillingness and complexity of the products.

- **Reason:**

In the UK, the population who are determined outside the acceptable risk tolerance level by the traditional institutions are financially excluded. This process of market segmentation lead to information exclusion. These people lack knowledge on financial

products, let alone digital financial technology. For inclusion to occur, people need to view Fintech offerings as an affordable tool to better their standard of living and monetary habits. Most of the financially vulnerable people are poor, minorities, uneducated, aloof of financial trends and unaware of the products tailored to suit their needs. Fintech need to come up with a strong value proposition that attract this niche market to avoid complications and unfamiliarity towards technology. When microfinances, SMEs and startups design business model to integrate digitalization, they need to look out for improvement in a layout that is adjustable to this population. Similarly, Fintech should emphasis on greater transparency and actively try to increase cybersecurity via regulations, communication and aid to the under confidentiality and data protection.

-**Probability:** 45% **References:**

- Barnard, Benjamin; Grič, Jos Henson (2020): FinTech for All. Available online at https://policyexchange.org.uk/wp-content/uploads/Fintech-for-All.pdf.
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https://publications.parliament.uk/pa/ld201617/ldselect/ldfinexcl/132/13208.htm#_idTextAnchor040.

Descriptor Name: Institutions need to be tailored according to the financially vulnerable people

Area of Influence: Social

Current Situation: The most important dimensions of financial inclusion are education, robust and innovative digital products for bank account ownership, credit, savings, payments, insurance and technological access to the excluded. Amongst these dimensions, many of them have been digitalized and tailored to the markets need with security concerns and involvement of bookkeeping, data storage and regulatory amenities. However, alternative options of savings and credit still hinder the progress of sustainable finance.

Specification A:

-**Name:** Financial products are digitalized, and alternative options are eradicated

-**Description:** Two financial products that could have a head start in understanding the niche vulnerable market and serving the needs of this market is saving and credit. Fintech needs to target these services and tailor the business model to fulfill the requirements of the population that are not eligible to bank.

-**Reason:** Moody's published a study in collaboration with Visa regarding the global impact of digital and electronic payment facilities. It was estimated that digital payment added €983 billion (0.8% of total GDP) in emerging market economic growth every 5 years. The upcoming digital technologies used in finance are expected to solve the problem of financial inclusion to certain aspect. For e.g. automated lending process in

financial companies can help prevent bias and find pattern to understand fraud and prevention better. Although the percentage of people saving are growing every year, the vulnerable and the youths still fall behind. Only 27% of the total individuals in the UK with no graduate degree are reported to be saving their income. The people need to understand the importance of escaping from illicit financial flows. Alternative financing is still practiced today, not only in developing countries but also in a developed economy such as the UK. While some alternative financing might be harmless in terms of fraud, it is still not authorized and usually takes a long process and trust on close friends and family members. Other unsafe financing activities such as money laundering, false loan, foreign bank complicity, loan sharks and concealing of information in insurance policies are illegal. They evade taxes and feed unto the vulnerability of the excluded population. This is extremely relevant to the unbanked mostly due to lack of awareness of products to serve their needs, and lack of substitutes.

-**Probability:** 60% **Specification B:**

-**Name:** Alternative options are available for the people in desperate credit need

-**Description:** Amidst various sources of financial products available in the market, a lot of mainstream source of credit and saving are available to the public to serve the need of those who are not aided by the mainstream market. These products do target the excluded population who are deprived of financial needs. Nevertheless, the business model does not necessarily have digital reachability and focus on financial sustainability on the long run.

Reason: Digitalization of financial products maintain and regulate financial flows. Nevertheless, for the unbanked, alternative options will remain attractive due to lesser complexity, familiarity and trust due to involvement of close friends and family. The market might have a difficulty shifting to digitalized payment since there are alterative options available. Shop accounts, mail order accounts, rental purchase outlets and pawn

brokers are most common amongst the financially excluded people. However, problems such as higher interest rate, comparatively expensive products and extra fees come as an attachment with these alternative credits and borrowing options. Another major problem arises due to its illegality. Money lenders such as loan sharks target vulnerable parts of society and the return is based on illegal activities such as threats and even violence.

-**Probability:** 40% **References:**

- Demirguc-Kunt, Asli; Klapper, Leora; Singer, Dorothe; Ansar, Saniya; Hess, Jake (2018): The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution: The World Bank.
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Descriptor Name: Collaboration of financial institutions and Fintech

Area of Influence: Social

Current Situation: There is abundance of capital flowing in the market. Most of these funds are generated and stored by the traditional banks that have invested and bearded assets in terms of infrastructure and capital for many years. Capital market needs to shift its focus towards investment in startups. This helps them to identify and understand the need of the market that has been unbanked and vulnerable, since these traditional banks

usually reject applications coming from the excluded people due to low credit score, low financial capability or personal identification issues.

Specification A:

-**Name:** Implementing concepts such as Enterprise Growth Market to aid the SMEs

-**Description:** An example of support towards the SMEs aiding to promote financial inclusion can be taken from Tanzanian economic depiction. Tanzania introduced the concept of Enterprise Growth Market (EGM). EGM aids the small and medium scale enterprises to generate fund in the capital market. The fund generation will ultimately lead towards investment in innovative progress of various SMEs an ultimately to the growth of economy. Initiates such as EGM needs to be addressed by traditional financial institutions and implemented by the market in UK to help SMEs and startup that target financial inclusion.

-**Reason:** Fintech and startups serving the excluded people need capital for surviving. Various prominent traditional banks have been operating in the financial sector for years and have abundance of capital to invest in the market. These banks can provide the SMEs with investment to innovate and achieve the need analysis to serve the poor and unbanked. The capital market needs to bridge the old with the current. The capital market can provide multiple financial products available to the ones in need by contributing directly through integrating the new products into their services. Likewise, identifying the innovative Fintech and investing on it can benefit them to penetrate the excluded market segment.

-**Probability:** 80% **Specification B:**

-**Name:** Eradicate financial inclusion as a social responsibility

-**Description:** With a compelling value proposition, SMEs are driving the market today to lead the future of finance. There is an immense potential for the SMEs and Fintech

to drive the future of finance. Nevertheless, this is not possible if traditional institutions do not join hands and collaborate to contribute in serving the need of the financially excluded. Rather than associating financial inclusion as a corporate social responsibility, companies, government and financial institutions must become a pioneer towards inclusion. The market must not forget that technology first reaches the inclusive and young people from the developed areas. Excluded population such as women, elderly, financially vulnerable, disabled and geographically unreached market might not have the gadgets or the knowledge on operating digital platform for their financial needs. Rather than only serving the inclusive population, inclusion needs to be integrated into every platform towards financial development and financial products need to be served equally to the resilient and the vulnerable.

- **Reason:** Based on the 2017 Findex report, 69% of adults own an official financial account. There is substantial growth on the usage of Fintech due to the awareness, innovativeness, simplicity and reliability. Nevertheless, these qualities are still difficult to integrate in the excluded and vulnerable part of the community. For e.g. financial accounts such as prepaid mobile account and digital post office account requires official identification documents for claiming social benefit and transferring funds which becomes a great hassle for individuals in desperate need of financial products. When institutions refuse to accept inclusion as a part of their value and business model, digitalization and produce development to serve the poor is unfeasible. Cooperation need to integrate financial inclusion into business, but not as a social responsibility or social service. Providing access to financial accounts needs to be the end goal for banks, institutions and government alike. When inclusion is accepted and unified, entrepreneurs can reach out to a global platform which previously used to be available only to the capital market. Similarly, households can have real time transactions, save time on the commute to bank, withdraw and deposit their cash and check balance whenever possible.

-**Probability:** 20%

References:

- Demirguc-Kunt, Asli; Klapper, Leora; Singer, Dorothe; Ansar, Saniya; Hess, Jake (2018): The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution: The World Bank.
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Regulatory Analysis

Descriptor Name: Government's role in achieving financial inclusion

Area of Influence: Regulatory

Current Situation: Along with the growing interest in Fintech and financial inclusion, the question of policy and regulations will arise. Initially, if the impact of these policy changes is higher on traditional banks, this will be challenging, and the impact might rebound towards small businesses. When regulations are adopted according to the current digital and technological changes, the European Union must consider the limitations of country-based policy or union-based policy. The EU regulations also need

to be collateral for every country involved. Along with regulatory changes, financial stability should also be considered as a risk factor.

Specification A:

-**Name:** Prioritize involvement of governmental institutions

-**Description:** The UK has initiated various steps to tackle the problem of financial inclusion. Her Majesty's Treasury (HMT) is affiliated to the economic and finance ministry of UK and is working for setting the path for UK's financial policy. Along with HMT, Economic Secretary to the Treasury and the Minister for Pensions and Financial Inclusion collaborate to discuss policies and analyze the challenges and problems of exclusion faced by the UK population. These collaborations of various governmental bodies will support regulations, policies, initiative and help drive inclusion forward.

-**Reason:** Since the launch of HMT Financial Inclusion Policy forum, there has been progress from the governmental aspect towards achieving inclusion. HMT has issued various reports addressing inclusion. Furthermore, the UK's budget for 2018 formulated packages for affordable credit to serve vulnerable individuals in its budget. Other initiations such as *fair4allfiancne* has also been established by the UK government to support people's financial wellbeing. The motive is to distribute dormant assets funding to the citizens of the UK. Likewise, various platforms have been established to advocate affordable lending, insurance, digitalize social security, open banking, data sharing and protection.

Her Majesty's Treasury till date has made impressive progress on its mission. In 1998, HMT introduced Policy Action Team 14 (PAT 14) targeting the issues concerning financial inclusion. HMT aims to keep uplifting inclusion through its numerous channels. It focuses on promoting basic financial products such as savings, and match incentives through savings gateway for the financially vulnerable people. Likewise, it aims to

continue improving consumer credit protection according to its Consumer Credit Act 2006. With these initiatives, funds should be properly utilized, and actions should be implemented. In 2004, £120 million was separated by the government in association with the HM treasury to eradicated Financial Exclusion. This fund needs to be utilized by the specified governmental task force. On the other hand, the UK Financial Conduct Authority (FCA) has also tackled with the problem of exclusion. Supporting innovation for startups and supporting international cooperation agreements for UK Fintech with various developed nations, the FCA needs to support businesses to innovated and serve without going through the extreme regulatory hassles.

-**Probability:** 70% **Specification B:**

-**Name:** Prioritize partnership with independent organization

-**Description:** Another aspect of the governmental involvement in inclusion is via partnership with active foundations and organizations working for financial inclusion and stability. Various banks invest on partnering with government to provide bank license to Fintech. It provides them with the act of security and national supervision. As a major aspect of Fintech is its accessibility to the excluded population, internet and smartphones play an important part in fulfilling the aspect. Governmental organizations need to collaborate with players in the financial industry such as telecommunication companies to provide data and resources to the people in need**.** Decentralized data needs to be available to all with the consent of consumers. This can be filtered and well targeted by outsourcing the task to various Fintech working actively on Bigdata and cloud computing. Storage of tremendous accounts of records and massive data might be safe from fraud risk with the active involvement from the government.

-**Reason:** The government needs to enforce policies and initiatives and partner with various organizations to eradicate financial exclusion. When all the institutions are bundled and regulated by the government via partnerships, collaborations and monitoring, activities such as saving schemes, government pension plans, financial

planning comparison tools and low internet credit unions will flourish. An existing example of governmental partnership is with the Financial Inclusion Commission (FIC). Although the government is not actively involved in the activities from FIC, national regulators are members of the organization has introduced the financial inclusion taskforce to spread financial awareness and influence policymakers and regulators for a fair finance society. Various governmental bodies have come together along with the taskforce to tackle inclusion problems, but not many are able to build a path for clear leadership and coordination. Similarly, the government has been initiating partnerships with various companies and institutions to serve for inclusion. However more comprehensive partnership needs to be formed. These partnerships will bring together various aspects of finance and banking such as businesses, financial institutions, mobile service providers and SMEs, and provide them with a platform to collaborate and innovate. When organizations and individuals work together, the issue of exclusion can be solved faster and in a sustainable manner. By providing platform, the government can also allocate individuals in need with organizations working for financial advices, loan experts and financial capability projects.

-**Probability:** 30% **References:**

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Descriptor Name: Role of regulations and initiatives in the UK

Area of Influence: Regulatory

Current Situation: European financial authorities collaborate to form regulatory initiatives in the Fintech sector. Amongst others, the European Commission, European Parliament and banks are united to discuss the benefit of innovation in finance. This formulates a hurdle to the governmental and regulatory bodies as they do not want to disturb the traditional financial processes that run the economy. Amongst other nations in Europe, UK holds the most forward direction towards accepting technology and stability in finance while maintaining its economic flow. In 2017, the European Commission addressed topics that needed to be analyzed for a sustainable and secured future in Fintech. Some important points revolved around the use of technology and its security. It states that the use of technology should not affect any policies while designing complex financial products. Services offered by the financial institution should be technology neutral regarding regulations. Fintech companies also need to be transparent to both businesses and consumers.

Specification A:

-**Name:** Refine Financial Service Authorities and its initiatives

- **Description:** The most important role for inclusion put forward by the Financial Service Authority is the Financial Services and Market Act (FSA). It can be categorized into three sectors. The FSA helps households and businesses achieve fair financial deals, improves capability of the business and does this in a fair market for both merchants and consumers. FSA also plays an important part in the regulations regarding financial inclusion. From regulating credit unions and third-party lenders to implementing inclusive strategies in the Financial Services and Market Act, FSA promotes strategies to help the economy to be more inclusive. Initiatives as the FSA needs to be refined to meet the needs of the ever growing financially excluded population.

- **Reason:** Although the FSA recognizes the financial vulnerability of the people, it still needs to work on prioritizing the financial excluded population and indulge inclusivity in all its projects. According to the House of Commons Treasury Committee's report from 2007, an in-depth understanding of financial exclusion and extensive research should be done to direct FSA's focus on specific targeted area of inclusion. For instance, FSA should work on estimating the benefit of financial inclusion in relation to its regulatory activities. Likewise, while implementing inclusion on its regulatory policies, it should not eradicate any players from the free market. Rather it should create a space which is fair and equal for all. While strengthening the policies, FSA might be reducing the probabilities of receiving a financial service to the vulnerable part of population. For instance, individuals with low credit scores have difficulty while applying for loan, mainly due to strict regulations and bank policy set by these authorities. While betting a safe ground for debtors to be able to receive loans, protection of monetary assets via strict law against fraud and digital thief should be considered by the FSA. The FSA also needs to refine its policy towards prioritizing fair treat for all merchants and consumers.
- **Probability:** 50% **Specification B:**

- **Name:** Importance of regulations: PSD2 and its effect on Open Banking

-

Description: Payment Service Directive**,** also known as PSD, regulates all the payment facilitators and services in the European region. It was introduced by the European Commission to provide security and encourage traditional banks as well as neo-banks to participate comprehensively as a union in the financial market. It was revised as Payment Service Directive-2 in 2015 and reinforced in 2018 with better and reliable regulations; heavily revolving around the digitalization of financial services and mobile banking. These regulations need to be revised constantly to fit the trend and upgrade throughout time.

-**Reason:** One of the major updates on the payment service directive is the proper usage and storage of customer data. While requiring strong online identity checks, PSD2 reduces the monopoly of the banks to access customers data and distribute it to the merchants. This will help merchants accept payments quicker without redirecting to mediators, thus reducing the transaction cost for the merchants. The idea is known as open banking. It provides opportunities for SMEs and thriving Fintech to better target the market and open pathways for others to enter and compete the market. The banks still have access to total control of the data and consumers still need to consent the merchant to access their data. In the UK, banks are already obliged to let their customers share information with companies according to their will. As beneficial this is for businesses and merchants, this also opens opportunities for traditional banks to be more innovative. The providers need to set policies in case of data privacy for sharing personal information in case of risk. They also need to sign contractual agreement with the consent of the customers to share their data due to strong privacy law set by regulators.

-**Probability:** 50%

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Descriptor Name: Policies concerning Financial Inclusion

Area of Influence:
Regulatory

Current Situation: While financial institutions are developing digitally, fraud and identity theft has been increasing as data is being stolen and accounts are being hacked. Fintech and neo-banks constantly explore and initiate the use of state-of-the-art technology to mitigate risk and prevent fraud in their customers account.

Specification A:

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-**Name:** Ensure customer fund protection (CFP) and Customer Due Diligence (CDD) for fraud prevention

Description: An integral part of understanding and delivering the needs of the customer is ensuring the protection of the customers savings and investment. Most of the excluded population have their asset saved into these financial accounts. By ensuring customer fund protection, institutions not only ensure trust on its customers but can also prevent fraud and thief. With e-money and mobile banking accessible to the general population, customer fund protection risk is inevitable. Thus, the regulators need to ensure and set standards for e-wallets, online banking as well as e-money institutions to prevent risk of digital fraud and data theft.

-**Reason:** While Bigdata and IoT is being addressed in the financial market, issues regarding data protection, surveillance and controlling of the data is also being deliberated. The responsible authorities need to update and execute the fund protection of the customer without disturbing the daily business transaction of the merchants. They need to generate prominent policies without making it difficult for new entrepreneurs for market entry. Likewise, they should not hamper accessibility for customers towards a new financial account. Fraud prevention Act from both regulators and financial companies need to be insured. Risk management can build internal control and protect the merchants as well as the customers. Compliance control also plays a big part in mitigating fraud risk. Customer feedback also plays an important part for decision making and creating need analysis. When these actions are implemented, CDD could take a big part in mitigating risk and providing trust to the merchants as well as the customers. Along with CDD, companies need to constantly update their API for policies regarding activities such as e-KYC and anti-money laundering.

-**Probability:** 65% **Specification B:**

-**Name:** Difficulty in mitigating fraud and compliance risk

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Description: With a network of relationship, online marketplace is formed where merchants and buyers can openly access products and services globally. However, this also brings risk factors to the assets of investors and customers alike. As the digitalization of financial products is comparatively new in the market, proper API and ICT security is not established. Moreover, regulations are not implied since the regulators and policy makers need to balance between the innovation and high cost of production and maintenance of the software due to modern technology.

-**Reason:** A survey conducted by KPMG stated that Bigdata and open banking are significantly a risk to the traditional as well as neo-banks. Hackers and scammers constantly manipulate consumers and evade the bank's control over its accounts. The most common fraud effecting the customers are identity theft, phishing, false promotion, online scamming for personal identification number (PIN), network down time for hackers to transfer funds and overcharging transactions. The most common fraud activities affecting the merchants are unauthorized use of agent's account and PINs and scams concerning float account. The customers themselves are a big risk of committing fraud to the merchants by providing fake identification or currency.

It is difficult for companies to "prevent" fraud as usually fraud is realized only after it has occurred. Thus, prevention mostly means proper authentication and policy making. Another issue towards mitigating risk of fraud is identity verification. With Fintech moving towards digital KYC, the data can be easily accessed by hackers. The merchants on the other hand want rapid growth of customers. They want the companies to progress, capture as much market as possible and indulge customers as much as possible. However, the data being used and store by the merchants are available to local data vendors. In the process of identifying, verifying and processing data, as well as investing and building an API for all the data, extensive amount of time is needed. The data also needs to be safe and secured within the system. Although Bigdata and mobile identity

verification is flourishing, it might take some time to eradicate the fraud and laundering completely due to time and technology constraints.

Probability: 35%

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10.2 Consistency matrix

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		1.1		1.2		1.3		2.1		2.2		2.3		3.1		3.2		3.3		4.1		4.2		4.3	
		a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
1.1 M1: Effect of Global Economic Cr...	a M1A			-1	1	1	-1	2	-2	-1	2	3	0	1	2	0	1	0	0	1	0	0	0	1	1
	b M1B			-1	-1	-1	1	-2	2	-2	1	-3	0	-1	-2	0	-1	0	0	-1	0	0	0	0	0
1.2 M2: Digitalization of financial ecos..	a M2A	-1	-1			1	-1	0	-3	2	1	2	-1	3	-2	1	1	1	1	0	1	0	1	1	1
	b M2B	1	-1			1	-1	1	-3	2	1	3	-1	3	-2	1	1	1	1	1	0	1	1	1	1
1.3 M3: Capital market for inclusive gr..	a M3A	1	-1	1	1			3	-3	1	-1	2	1	1	0	1	1	-1	1	2	2	1	1	2	-2
	b M3B	-1	1	-1	-1			-3	3	-1	1	-2	1	-1	0	-1	-1	1	-1	-2	-2	-1	-1	-2	2
2.1 S1: Collaboration of financial inst...	a S1A	2	-2	0	1	3	-3			2	-3	1	-1	1	1	1	1	0	0	2	2	1	1	0	1
	b S1B	-2	2	-3	-3	-3	3			-3	2	-1	1	-2	-2	-1	-1	-1	-1	-2	-2	0	0	-1	0
2.2 S2: Acceptance of digital finance a..	a S2A	-1	-2	2	2	1	-1	2	-3			2	-2	2	2	0	1	-1	-1	1	1	0	0	2	-2
	b S2B	2	1	1	1	-1	1	-3	2			-2	2	-2	-2	-1	0	0	0	-1	-1	-2	-2	-2	2
2.3 S3: Institutions tailored for vulner...	a S3A	3	-3	2	3	2	-2	1	-1	2	-2			3	2	2	2	-2	-1	3	2	1	1	2	1
	b S3B	0	0	-1	-1	1	1	-1	1	-2	2			-2	-3	-2	-2	0	0	-3	-2	0	0	1	-2
3.1 T1: Inclusion and its relation to te...	a T1A	1	-1	3	3	1	-1	1	-2	2	-2	3	-2			2	2	1	1	3	2	1	1	2	1
	b T1B	2	-2	-2	-2	0	0	1	-2	2	-2	2	-3			-1	-1	0	0	-2	-3	1	-1	1	2
3.2 T2: Role of scheme cards and pay...	a T2A	0	0	1	1	1	-1	1	-1	0	-1	2	-2	2	-1			0	0	1	1	0	0	0	2
	b T2B	1	-1	1	1	1	-1	1	-1	1	0	2	-2	2	-1			0	0	1	1	1	1	0	2
3.3 T3: Shift from technology suppor...	a T3A	0	0	1	1	-1	1	0	-1	-1	0	-2	0	1	0	0	0			-2	-1	2	1	-3	1
	b T3	0	0	1	1	1	-1	0	-1	-1	0	-1	0	1	0	0	0			1	2	1	2	-1	3
4.1 R1: Government's role in achievin...	a R1A	1	-1	0	1	2	-2	2	-2	1	-1	3	-3	3	-2	1	1	-2	1			2	3	1	-1
	b R1B	0	0	1	0	2	-2	2	-2	1	-1	2	-2	2	-3	1	1	-1	2			3	2	1	-1
4.2 R2: Role of regulations and initiat...	a R2A	0	0	0	1	1	-1	1	0	0	-2	1	0	1	1	0	1	2	1	2	3			2	-2
	b R2B	0	0	1	1	1	-1	1	0	0	-2	1	0	1	-1	0	1	1	2	3	2			2	-2
4.3 R3: Policies concerning Financial ...	a R3A	1	0	1	1	2	-2	0	-1	2	-2	2	1	2	1	0	0	-3	-1	1	1	2	2		
	b R3B	1	0	1	1	-2	2	1	0	-2	2	1	-2	1	2	2	2	1	3	-1	-1	-2	-2		

Degree of crosslinking: 82 %

10.3 Differences within the scenarios

Overview of the projections

Szenario:	S-1	S-3	S-2	S-5	S-4
Rank:	1	2	3	4	5
Consistency Sum:	83	51	50	30	30
Consistency Average:	1,41	0,86	0,83	0,51	0,50
Probability parameter:	59	54	54	46	49
Descriptor:					
1.1 M1: Effect of Global Economic Cr...	a	a	a	a	a
1.2 M2: Digitalization of financial ecos..	b	b	b	b	b
1.3 M3: Capital market for inclusive gr..	a	b	a	b	b
2.1 S1: Collaboration of financial inst...	a	a	b	b	b
2.2 S2: Acceptance of digital finance a..	a	a	a	b	a
2.3 S3: Institutions tailored for vulner...	a	a	a	a	a
3.1 T1: Inclusion and its relation to te...	a	a	a	a	a
3.2 T2: Role of scheme cards and pay...	b	b	b	b	b
3.3 T3: Shift from technology suppor...	b	b	b	b	b
4.1 R1: Government's role in achievin...	a	a	a	a	a
4.2 R2: Role of regulations and initiat...	b	b	b	b	b
4.3 R3: Policies concerning Financial ...	a	a	a	b	a

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