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**ANTI-MONEY LAUNDERING AND CUSTOMER DUE DILIGENCE IN FINNISH
BANKING SYSTEM – CURRENT STATE AND FUTURE IMPROVEMENTS**

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ABSTRACT

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Recently media and banks have been paying attention to money laundering. There has been evidence that some banks dealing to anti-money laundering has not been under good corporate governance, and often this has been the headline in media. This thesis subject is covering anti-money laundering and customer due diligence, which are both playing central role when trying to prevent money laundering. In this process customer identification and verification is playing important role when opening new customers entities. Especially when opening a client bank must pay attention to actual beneficiaries of the company. The goal of the thesis is to examine the current state of anti-money laundering and customer due diligence in Finnish banks. Also, thesis tries to presume the future trends of anti-money laundering field. It seems that information systems will be playing a bigger role with anti-money laundering in the future. The research method used in this thesis is a survey done for AML professionals. What comes to supervision, there is probably going to be more unification in anti-money laundering regulation standards. This will do the supervision process easier and clearer. In the future, anti-money laundering requirements for a bank are going to increase. Public organizations also must put more effort to anti-money laundering, and their current processes are going to be too heavy in the future, therefore the regulation framework is probably going to be more unified. By doing this it is possible to make anti-money laundering more sensible ja effective. Anti-money laundering at its current state is still quite new phenomenon in banks. To enable bank's inside anti-money laundering process to be as effective as possible, every bank official must understand the basics of anti-money laundering.

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Rahanpesu on huomioitu viime aikoina sekä mediassa että pankkialalla. On saatu evidenssiä siitä, että tiettyjen pankkien toiminta rahanpesun estämisessä ei ole täyttänyt kaikilta osin hyvän toiminnan tunnusmerkistö, tästä aiheesta onkin keskusteltu paljon mediassa. Tämä tutkielma käsittelee rahanpesun estämistä sekä asiakkaan tuntemista, ne ovat molemmat keskeisessä roolissa pyrittäessä estämään rahanpesua. Tässä prosessissa asiakkaan tunnistaminen uuden asiakkaan kohdalla on tärkeää. Erityisesti yritysten tosiasiallisiin edunsaajiin tulee kiinnittää huomiota avattaessa uutta asiakkuutta. Tutkielman päämääränä on selvittää suomalaisissa pankeissa tehtävän rahanpesun estämisen ja asiakkaan tunteminen nykytilanne. Tutkielma pyrkii myös hahmottamaan rahanpesun estämisen tulevaisuuden trendejä. Tutkimusmetodina käytettiin kyselytutkimusta, joka suoritettiin rahanpesun estämisestä vastaavilla henkilöillä. Näyttää siltä, että tietojärjestelmät tulevat olemaan yhä suuremmassa roolissa rahanpesun estämisestä tulevaisuudessa. Valvonnan osalta tulevaisuudessa valvontaa pyritään yhdistämään, jotta rahanpesun estämisen prosessit tulevat helpommiksi ja selkeämmiksi. Tulevaisuudessa vaatimukset pankeille rahanpesun estämisestä tulevat varmasti kasvamaan. Julkiset organisaatiot ovat myös joutuneet panostamaan rahanpesun estämisen paljon, ja nykymallilla prosessi on liian raskas tulevaisuuden haasteisiin. Tämän vuoksi rahanpesun sääntelykehikkoa tullaankin varmasti yhtenäistämään, siten rahanpesun estämisestä saadaan tehokkaampaa ja järkevämpää. Rahanpesun estäminen nykymuodossaan on tällä hetkellä vielä verrattain uusi asia pankeissa. Jotta rahanpesun estämisen prosessista saadaan mahdollisimman tehokas pankin sisällä, on jokaisen pankkilaisen ymmärrettävä rahanpesun estämisen tarkoitus ja veloitteet.

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Contents

1	Introduction	7
1.1	Background and motivation.....	9
1.2	Concepts and definitions.....	10
1.3	Research gap.....	11
1.4	Research goal and research questions.....	12
1.5	Limitations.....	14
1.6	Description on the structure	14
2	Theoretical framework.....	15
2.1	Anti-money laundering scheme and AML process.....	16
2.2	Money laundering (ML)	17
2.3	AML as sub-topic under AML scheme	19
2.4	Terrorist financing	20
2.5	Combating the Financing of Terrorism (CFT).....	20
2.6	Customer due diligence (CDD)	21
2.7	Know your customer (KYC).....	22
2.8	Sanction screening and transaction monitoring	24
2.9	Suspicious Activity Report (SAR).....	24
2.10	Handling the whole AML scheme	25
3	Critical literature review.....	27
3.1	The Real Meaning of AML and Scale of Money Laundering	27
3.2	Money laundering and globalization.....	27
3.3	AML & Risk Management	28
3.4	Anti-money laundering and information systems	29
3.5	Controlling risk with anti-money laundering.....	31
3.6	Confluence to the regulation	31
3.7	AML as barrier for people's everyday financial services	32
3.8	State of the art and different actors in AML field	33
4	Major AML regulators and organizations in Finland.....	34
4.1	AML in Financial Supervisory Authority (FIN-FSA),	35
4.2	The Financial Intelligence Unit (FIU).....	35
4.3	European Banking Authority (EBA).....	37
4.4	Regulation in USA.....	39
4.5	Financial Action Task Force (FATF).....	39

4.6	An Overview of AML Organizations	40
5	Data and methodology	41
5.1	Methodology	41
5.2	Sample.....	42
5.3	Data collection	43
5.4	The structure of survey	43
6	Results of the survey	45
6.1	Answers from multiple choice questions	45
6.2	AML current state – non-Likert scale questions	46
6.3	AML improvement in the future – non-Likert scale questions.....	48
7	Results and discussion	50
7.1	Limitations and further research.....	51
8	Conclusions	53
	REFERENCES.....	54
	APPENDICES.....	59

1 Introduction

This master's thesis is introducing anti-money laundering (AML) phenomenon in Finnish banking industry. AML topic is relevant from the many different points of view. Firstly, AML scheme has been very hot topic in Finnish banking during last few years. Especially Danske Bank (The Economist 2018) and Nordea (Milne 2018) have been in news because of insufficient AML monitoring. Secondly, the Finanssivalvonta, or the Financial Supervisory Authority (FIN-FSA) has put effort more towards supervising the AML controls of the banks. Also, the European Union has been also concentrating more towards the AML controls, so that international money laundering would decrease in the future and would come harder for criminals. It seems that many different institutions want to focus more in AML topic and therefore the topic of this thesis is relevant and relevant.

The AML topic is wide because AML contains many different sub-topics. Also, it is not easy to define AML. Yasaka (2017) is pointing out that it is difficult to determine the definition of money laundering. In this research, AML is used as an umbrella term for the whole AML scheme.

Banks have understood that the AML scheme has become a major topic in last ten years and that the attitudes related to AML monitoring has become stricter. Banks have said that they must focus more to their AML processes. Nordea is even admitting that they have been somehow a little naïve before with AML, and that now they have to consider the AML procedures much more seriously than before, says Casper von Koskull (2019), president and CEO of Nordea Bank. Because banks are looking into AML scheme more carefully, this all means that the money laundering should be harder to do in the future for the criminals. It is obvious that criminals are always one step ahead. Now banks want to close the gap and investigate more of those money laundering cases.

This master's thesis introduces the current state of anti-money laundering (AML) as a phenomenon in Finnish banks. This master's thesis is done by reviewing literature and the overview of regulation about the AML scheme. Finally, the data collection and analysis are done. The idea of data collection is gathering data from the current situation of AML in Finnish banking systems. The data is collected from a primary source by doing a survey for the banks' professionals working with AML. In this chapter the goal is to introduce the background, motivation, goals and limitations of this research.

The Financial Supervisory Authority (FIN-FSA) has announced that banks must improve their AML processes in the future, and that both supervisors and banks have reacted too effortlessly to the AML in five to ten years ago. (Toivonen 2019) This means that there has not been enough people to working with AML problem and trying the develop AML processes. So, the AML process are still quite new and therefore the processes are still developing quite rapidly.

Another major story is that Nordea moved its headquarters from Stockholm to Helsinki, because of that the regulation of the banking sector must be more transparent. (IMF 2019a) Because Finland is having a big bank under their regulation, this means that the regulation procedures, must be stricter than before Nordea's decision to move their headquarters in Finland. (Lassila 2019) This all means that the Finnish baking regulators must focus much more resources towards AML auditing in the future.

Fueled by advances in technology and communications, the financial infrastructure has developed into a perpetually operating global system in which "megabyte money" (i.e. money in the form of symbols on computer screens) can move anywhere in the world with speed and ease (UNODC 2019). Rapid developments in financial information, technology and communication allow money to move anywhere in the world with speed and ease. This makes the task of combating money-

laundering more urgent than ever. The deeper criminal money gets into the international banking system, the more difficult it is to identify its origin. Because of the clandestine nature of money-laundering, it is difficult to estimate the total amount of money that goes through the laundry cycle.

One reason for that is, because of the fintech industry, the relatively new industry is shaping the whole banking field rapidly. Opening an account can be done very easily without a need visiting in branch office, the account opening can be done easily from home by using smartphone. This makes customer life easier, but also creates different kind of customer identity authentication process where bank must focus on new types of abuse, therefore money laundering is not similar than before. One example is money itself. The amount of cash is decreasing rapidly (Finanssiala 2018), so criminals must learn new ways to do the money laundering. Also, some fintech firms might be in trouble to full fill all the reporting and monitoring requirements what comes to money laundering and customer due diligence.

1.1 Background and motivation

The idea for this thesis came straight from working environment. Working with banks reporting has thought that AML scheme is strongly connected to data and reporting. The whole backbone from AML investigation comes from data and reporting because AML investigation can be only done when all the important data is available for the analyst.

There has not been such a research before of AML which combines the current and future state of AML based on literature and regulation from secondary sources and empirical part collected from the persons working with AML. There has been done some studies which are focusing on the regulation on and overall requirements for the banks in legislation standpoint (e.g. Tolonen 2009, Keltanen 2011 and Saari 2017). Still, there has been no such a study which focuses on practical problems of AML process in Finnish banks from the view of information systems and efficiency AML process. By this is meant the overall process in very high level

and not focusing the logic how AML process are done inside of banks the most profitable way possible.

AML scheme is also very current topic because of many major things affecting to AML scheme has happened during last few years. Revealed money laundering cases past and, Nordea's decision to move their headquarters from Sweden to Finland are both putting pressure to Finnish regulator to tighten its anti-money laundering regulation and putting more effort to the investigation of money laundering cases.

Everyone can read from the news that anti-money laundering and customer due diligence has been common topic during the last few years. The headlines have been focusing on the current and the past state of money laundering in Finnish banks. This is because many of the Nordics banks have been revealed from lazy anti-money laundering policies (Milne 2018). The banks have not been able to detect money laundering well enough. Nowadays the Nordic banks has invested huge amount of money to their AML processes. Unfortunately, the investment to the AML has affect negatively to banks' performance (The Wall Street Journal 2019).

The subject of this thesis is important because regulation related to banks know your customer policy has become more restrictive. Also, in near past many major banks have get caught to not be able to complete effective AML procedures.

1.2 Concepts and definitions

Firstly, it is important to present all the major terms under the AML scheme. Like above mentioned AML scheme is the umbrella term for the whole AML phenomenon. AML scheme includes subtopics such as anti-money laundering, combating financing of terrorism, customer due diligence and customer monitoring and sanction screening inside. All of these topics are below the AML scheme. AML process

in upcoming sections describes the actual process how banks are managing the whole AML scheme.

This master's thesis examines banks anti-money laundering (AML) process. The effecting AML process can be done by performing powerful customer due diligence (CDD) control. Simply this means that banks must know their customers so well that they are able effectively report suspicious actions related to AML. There is requirement for the banks that they must be able to monitor and detect illegal actions of its customers by accomplishing their AML and CFT processes these requirements can be completed by executing effective CDD information collection.

In theoretical framework section all the definitions and concepts are gone through more precisely, but here is described how the whole AML phenomenon very shortly. The idea in anti-money laundering phenomenon is that banks need to collect and analyze the customer data, so that banks can create accurate view of the customer and are able to practice accurate AML process. Banks also need transaction monitoring and sanction screening for their AML process, so that they are able stop and suspend suspicious transactions.

One is related to monitoring the customer data and transactions so that bank is able to analyze and detect suspicious behavior and even money laundering. like CFT, customer due diligence (CDD) and know your customer (KYC) as major concept in the subject area. Also, this study includes customer monitoring and sanction screening inside of AML scheme.

1.3 Research gap

There has been a lot of research focused on the AML in information systems point of view. Many researchers have been discussed how information systems are able to provide help with the AML processes. Also, there has been a lot of research done focusing on the regulation. Regulation focused research has been focusing on the question how banks should adapt their AML process compared to the AML regulation. Another concern connected to the regulation research has been focusing the subject how to make regulation more global, from the current kind of local

stage. Even though there is quite a lot of information about what AML is and how to monitor it in theory, there is still not enough information about the current state of AML and how to improve it in the future from the bank's perspective. This master's thesis is trying to fill that gap. Also, the common consensus is still missing on top of the subject area. Banks and other institutions are still struggling to

1.4 Research goal and research questions

The goal of this research is to overview and analyze the current situation of the Finnish anti-money laundering, and how to improve the current situation of the phenomenon. By figuring the current state of the AML it is possible to find out the things that are well with the current AML phenomenon and where banks has to improve their processes in AML field.

Research questions

Primary question:

How can banks do effective customer due diligence monitoring related to AML and prevention of terrorist financing under the current regulation?

Primary question will generate new insight and therefore the research question is meaningful. It also covers the whole are which banks should consider when thinking their AML processes.

Sub-question 1:

What is are the requirements that banks must follow based on regulation?

First sub-question focus the regulation part of AML by answering this question, bank can create a AML process that fulfil all the requirements that regulator is setting related to AML. By answering this question only gives the requirement that bank has to follow. It does not take stand for the practical implementation so that banks are able to fulfill the requirements.

Sub-question 2:

What is the current state of AML in banks Finnish banks?

Sub-question 2 tries to figure out the current state of AML in Finnish banks. By figuring out the current state, it is a must to know are the banks doing effective customer due diligence process; so do the banks really know their customer and are they able to report the suspicious actions early enough.

Sub-question 3:

How to improve AML process in the future?

The third sub-question is trying to figure out what the future could be. By answering this question banks are able to make decision to which way they should focus the development of AML process in the future.

Sub-questions are important because they focus more towards individual areas that banks need to consider when doing their AML processes. Sub-questions focus on regulation and requirements, current state of banks processes and improvement that banks should consider in the future so that their AML processes can as effective as possible both financial and investigation standpoint.

The methods that are used in this research are: literature review of AML field, legislation/regulation analysis of AML in banking industry and semi-structured survey about the current situation and the future of AML in Finnish banks. The literature review will introduce the research that is done around the AML topic. Legislation and the regulation part is going to provide information that banks need to follow when they are executing their AML processes in Finnish banking field. The semi-structured interview -part is collecting empirical data from banking personnel who are working with AML processes in their current work. The empirical part is trying to explain the current and future state of AML in banking processes in Finland. The final analysis combines all of the above mention sections and do proposal and suggestion what is the current situation of AML scheme today and what should be done in the future concerning to AML regulation and processes.

1.5 Limitations

The biggest limitation of the research is knowledge and resources. The amount of specialized experience of banks AML field is limited. Subject of the research area is quite wide. Also, the number of potential persons for the survey is limited therefore the amount of answers from the survey was quite small. It is not possible to research all of the money laundering cases, so therefore this thesis is focusing the current state and the future of anti-money laundering in Finland. This thesis limits the investigation and research situation in Finland only covers global situation from the regulation standpoint.

Fraud management and sanction screening are sometimes seen as part of AML phenomenon. However, in this research fraud management at sanctions screening are not covered as part of the thesis.

1.6 Description on the structure

The basic structure of the research is simple. First, the research focusses theoretical background of AML, so the idea is to make a simple framework about the whole AML scheme. Then comes the literature review. The literature review is combined from secondary sources from all around the world. The literature review focus on all the major things and happenings around the AML. After the literature is analyzed, the thesis focuses on the current regulation level that is required for banks. The regulation section describes how AML and CDD information must be collected and analyzed in right way in Finland. Finally, there is an empirical part of the research. The data collection was done by completing a survey for the banks AML personnel, so that it is possible to do analysis of the current and upcoming state of AML in Finland.

2 Theoretical framework

These are the main definitions and concepts introduced in chapter 2 are important part of the thesis. It is crucial that the reader of this thesis understand these concepts and definitions. In this section is defined all the major concepts of the thesis.

In this section is described the concept of this AML scheme and what is the meaning of banks AML process. Also, major definitions related to AML scheme are explained.

The most important definitions related to AML scheme are money laundering (ML), anti-money laundering (AML), financing of terrorism (FT), combating financing of terrorism (CFT), customer due diligence (CDD), know your customer information (KYC), sanction screening and monitoring, beneficiary owner (BO), politically exposed person (PEP). All of these last mention definitions can be placed under the AML scheme. Concepts and definitions are explained more accurately in upcoming paragraphs.

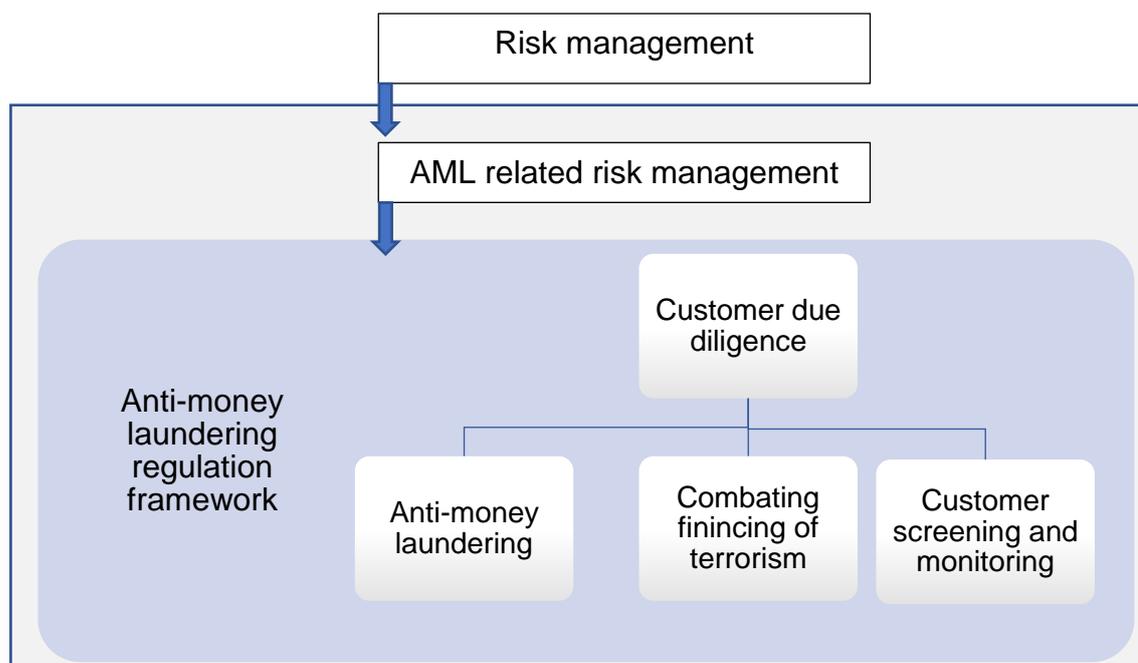


Figure 1. AML part of risk management

Figure 1 describes how AML regulation framework is related to risk management. Risk management is the term what bank need to consider when it is thinking its AML regulation requirements.

2.1 Anti-money laundering scheme and AML process

AML as a term is often used in two different ways. Often AML is used for an umbrella term as a whole AML scheme. In other occasions AML only describes the actual anti money laundering and separates for example combating of terrorist financing and customer due diligence. In this thesis AML scheme means the whole AML phenomenon. AML as an individual term is described in chapter 2.3.

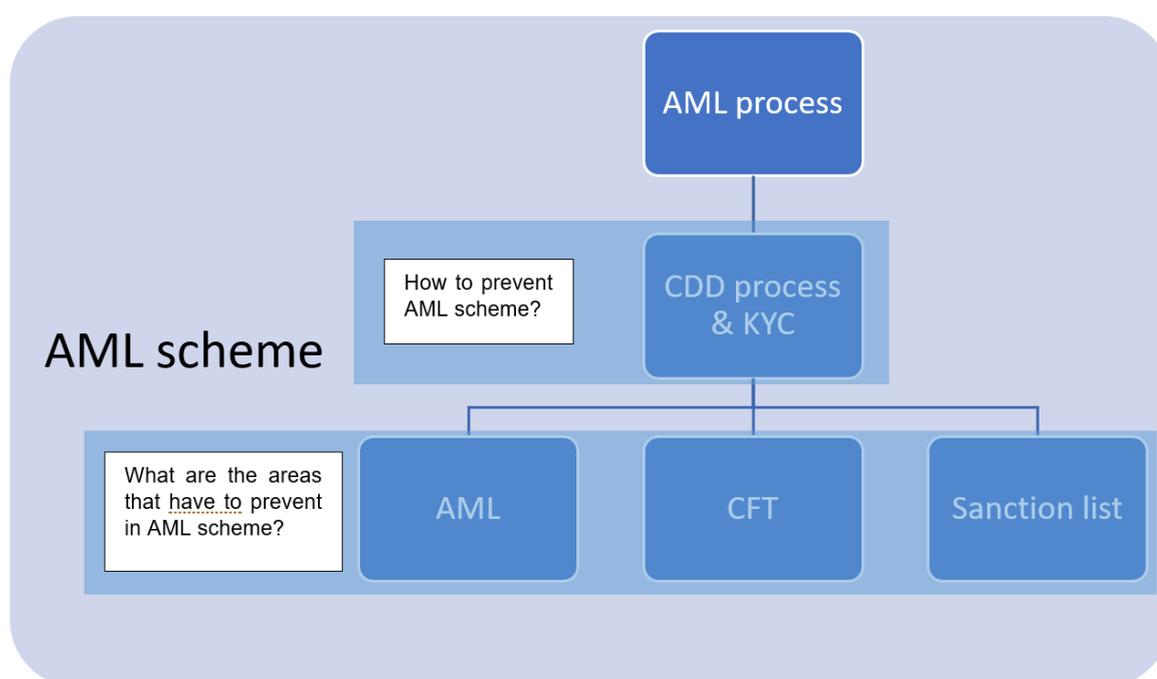


Figure 2. AML scheme and structure

Figure 2 illustrates the AML scheme. AML scheme includes AML process. AML process means all the actual work that must do related to AML scheme. Under AML promises is customer due diligence (CDD) and know your customer (KYC).

CDD and KYC are answering the question how all of the different information is collected and analyzed, so that AML process can be as effective as possible.

- When thinking narrowly AML only means the actions that are done, so that it is possible to prevent criminal money to flow to the society.
- When thinking AML for a larger scale AML can be seen as an umbrella term of all the different actions needed in AML. When thinking AML in larger scale, the term AML scheme is used.

This section describes what are the different elements under the AML scheme, and how the actual work happens under the AML scheme. AML scheme is the major subject of this thesis, therefore here is first represented what are the different subtopics which all combined to gather create the AML scheme on top of the subtopics.

AML scheme

In the following sections covers all the major concepts under the AML scheme. The idea in the next section is to introduce the most critical concepts more precisely. In those upcoming sections is described of the definitions of different AML subtopics.

2.2 Money laundering (ML)

Money laundering is concerning especially banks because of their natural place in society. Bank is the place where the money is held, and therefore it must also concentrate on money laundering. In money laundering the origin of the money is catered from criminal activities.

Often, when talking about money laundering term dirty money is used. This following figure 3 is presenting a little bit about what can be the different appearance of dirty money.

Activities	Monetary transactions		Nonmonetary transactions	
	Tax evasion	Tax avoidance	Tax evasion	Tax avoidance
Illegal activities	Trade in stolen goods, drug manufacturing and dealing, prostitution, gambling, smuggling, fraud		Barter (drugs, stolen goods, smuggling, etc.); production of drugs for own use; theft for own use	
Legal activities	Unreported income from self-employment; wages, salaries, and assets from unreported work related to legal goods and services	Employee discounts, fringe benefits	Barter of legal services and goods	All do-it-yourself work and neighbor help

Figure 3. Classification of underground economy (Reuter 2005)

Dreyer (2011): "Money laundering is an attempt to conceal the identity, source and destination of money that comes from illegal activity." Money laundering is not easy task to do. In money laundering there is many different faces when layering that money from illegal activities to part of the society.

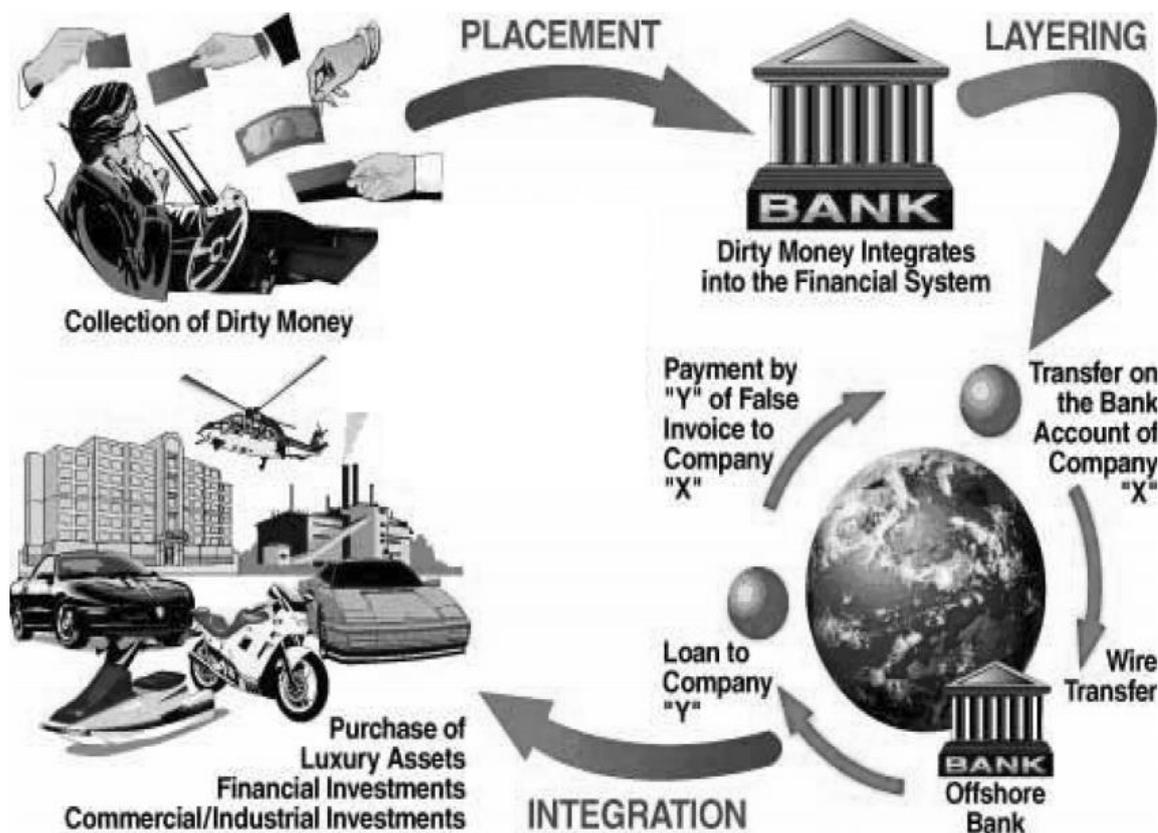


Figure 4. Typical money laundering scheme (Alldrige 2008)

In Figure 4 is presented one of two ways to complete money laundering. there it is possible to see that money laundering requires many different activities. First dirty money must be collected. After collection of dirty money it must be placed to the banking system, here are the front organization often used, so that the actual beneficial owners can be hidden. This is the most critical step, when transferring money to the legal financial system. After this step money and other securities are moved within different banks, intention to hide more of the origin of the money.

Money laundering is the process of vanishing appearance that large amounts of money obtained from criminal activity, such as drug trafficking or terrorist activity, originated from a legitimate source (Chen 2019). So, the idea is to make “dirty” money looks clean.

At first glance, it is easy to blame the banks for being lazy and just want to close their eyes, because it is easier and more profitable to just ignore the money laundering problems. The amount of transactions is so big that it requires a lot of computing and manpower to monitor it effectively.

2.3 AML as sub-topic under AML scheme

Anti-money laundering can be used as an umbrella term for the whole AML scheme like mention earlier. However, in this chapter the is described AML as a sub-topic of AML scheme, so in other words here the AML is used to describe only the prevention of money laundering. In this section is described what is special from AML when comparing it for example between to combating financing of terrorism.

When preventing money laundering the origin of the money is always from illegal activities. This section describes how to recognize this kind of behavior and what are the aspect when preventing money laundering.

Stephen Sterling (2015) describes well how analytical tools can be used in part of AML, and that analytical tools can offer answer for the rapid speed, cost and security problems money transfer controls when doing AML. This means that when doing AML, the information systems are playing critical role in the process.

2.4 Terrorist financing

The main difference between money laundering and terrorism financing comes from the origin of the money. What comes to AML process the terrorist financing it's is quite similar than money laundering. When financing terrorism the money that is used to finance it does not have to come necessarily come from illegal actions. So, the origin of the money is not the problem, but purpose where the money is used is the problem in terrorism financing.

Finished law (5 a § (12.12.2014/1068)) describes financing of terrorism in following way: "Person directly or indirectly gives or collects capital for terrorist group knowing it's knowing the character of the group be terroristic is sentenced for a fine or in jail up to 3 years. " This means that terrorist financing is more related to given money or supporting terrorist group in other financial way. In other words, in terrorism financing the focus is on the destination of capital whereas in AML is the origin of the capital.

2.5 Combating the Financing of Terrorism (CFT)

The major focus in combating the financing of terrorism is on risk countries, sanction lists and freezing of funds. Banks' must focus on the transaction flows to the risk countries. Both transactions flows are important here; banks' need to concentrate both inbound and outbound transaction flows. Both transaction flows are crucial here. It is quite easy to understand that outbound transactions are crucial because terrorism is often happening outside of Finland. But also inbound transactions are important because terror might be a person who is funding some individual in Finland who is radicalized and planning terrorist act.

Another major part of combating the financing of terrorism is sanction screening and monitoring. To persons who are suspected of financing of terrorism are listed in sanction lists, therefore banks must go through sanction lists when processing payments. Every transaction must go through the sanction lists and therefore sanction monitoring is usually happening in the core banking system.

2.6 Customer due diligence (CDD)

Customer due diligence is a key when bank is performing its AML process. Customer due diligence is the actual process how they anti money laundering is handled. Customer due diligence covers all the actual work under the AML it starts from customer identification and verification, it also includes know your customer information, transaction monitoring, payment analysis, investigation process and submitting possible a suspicious activity report (SAR).

One part of the CDD is know your customer (KYC) information. Bank has to know their customer to do effective customer due diligence processes. It's not enough that KYC information is only collected the information must be also analyzed. Customer due diligence combines work in customer interface, information systems and understanding of AML regulation framework.

Often customer due diligence and know your customer are used almost like synonyms, but the fact is that CDD covers all the different procedures in AML, whereas (KYC) just sets the standard how bank executes different kind of processes. KYC only tells what information must be collected and analyzed. However, bank creates its own CDD process and this is called customer due diligence. Bank has to decide by itself which customers are the riskiest and which of them must be do the SAR. This means that when doing customer due diligence KYC information you must be collected and analyzed.

Fifa (FIN-FSA) is expecting it's supervised entity social its customer due diligence procedures and minimum criteria to be observed in its customer relationships applying the risk-based approach. Also, Information obtained to fulfil the obligation to obtain information and the reporting obligation must be kept separate from the customer data. The customer does not have the right to check this information. In other

words supervised entity (bank) must show broadly how it's handled the whole CDD process. here is listed requirements dad supervised entity must present to the authority:

- customer identification and verification of identity
- identification, and where necessary, verification, of the beneficial owner (identifying ownership exceeding 25% and control relationships in the customer)
- identification and verification of the customer's representative
- obtaining information on the customers' activities, the nature and extent of their business, and the grounds for the use of the service or product
- retention of customer due diligence information
- obligation to obtain information and report suspicious transactions
- internal instructions, training, contact persons, decision-making process
- development and use of risk-management and continuous monitoring methods.

(Fiva 2019a)

2.7 Know your customer (KYC)

Know your customer (KYC) is a term that is often used with term AML. Like mentioned earlier KYC means the actual information that is collected about the customer. Whereas customer due diligence describes the whole process how customer information is collected, analyzed and reported, KYC information is only the information that must be collected so that it is possible to do effective AML process.

Part of KYC information is customer identification and verification of identity. Identification happens when new customer is based in customer relationship and management (CRM) system. When doing customer identification, customer documentation must be checked, this is known as verification of customer identity. Nowadays, it is an obligation to use passport or official identification card, when opening broader banking services than just an bank account. Also, when opening banking services some additional information is collected. Most interesting of those information that is collected related to AML are: politically exposed person (PEP) and beneficially owner (BO) when opening account for a company, these two concepts are different more precisely in next paragraphs.

PEP is a person who is currently or under one year has been in significant public position in another country.

When identifying beneficial owners, it is necessary to identify those ownerships that exceeds 25 %. The identification and verification of the customer representative must be done. Also when identifying beneficial owners it is important pay attention to key purpose of the company and the field of industry where the company is working. The idea behind this is to prevent illegal transactions and capital movements between different continents and banks.

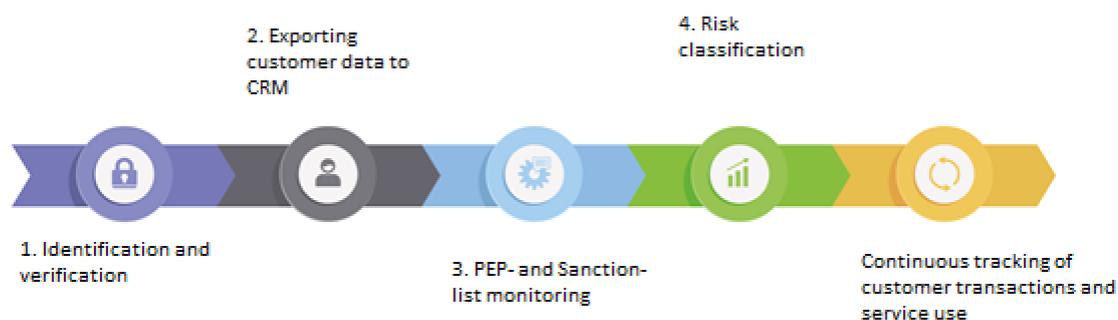


Figure 5. Collecting KYC information

In Figure 5 there is described the KYC process. Process start with the collection of customer identification and verification information. After that comes today to upload to the customer relationship management (CRM) system. When data is uploaded to the information system the information can be run through the PEP and sanction list monitoring. Finally, the risk classification is given to the customer. After that, it is possible to give access to the broad banking services for the customer. After that began continuous tracking of customer transaction and service use. This is how the basic KYC process works in a bank.

By 2020, the industry will "step away from customer identity and verification," said Thomas Piontek, head of regulatory services at Commerzbank AG, at the Society for Worldwide Interbank Financial Telecommunication's business forum in London last week. While he doesn't believe the concept of knowing your customer will go

away, "we will look much more into customer transactions." Reutzel .(2015) Now we can say that more emphasis is put into transaction monitoring. Piontek seems to be right on that more interest is put to the customer anti-money laundering.

International Financial Law Review (2018) states that the uniform regulations across the world are necessary related to KYC information. The statement seems rational. More uniform regulations should help banks to be more cooperative. This would help with anti-terrorism work.

2.8 Sanction screening and transaction monitoring

In this research sanction screening is describing the screening against the sanction lists. Sanctions are often political, but because many of those persons and companies which are listed in those sanction lists are connected to terrorism , therefore sanction lists are part of AML. In sanction lists there can be some terrorist and politically exposed persons such as oligarchs from Russia. Banks must follow these sanction list and detect the persons or institutions that are in sanction lists. When bank notices these persons in the list, it must be able to freeze the customers services and transactions.

AML is often connected to the sanction screening and transaction monitoring because bank customers who are in the sanctions screening lists are often interesting entities related to terrorist financing and money laundering, therefore it is important to mention that sanction screening and transaction monitoring are not playing important role in this research even if they have strong connection to AML.

2.9 Suspicious Activity Report (SAR)

Final step in AML process is suspicious activity report (SAR). Only few AML investigations are ending to SAR. SAR is made when bank suspecting its client for money laundering or terrorist financing. SAR is made to the Finnish Financial Intelligence Unit.

A Suspicious Activity Report (SAR) is originally from United States. The tool was provided in the Bank Secrecy Act (BSA) of 1970 for monitoring suspicious activities. The SAR became the standard form to report suspicious activity in 1996. (Kenton 2019) SAR is originally from The United States regulatory term is integrated into our regulation terms from there.

2.10 Handling the whole AML scheme

In the whole AML process there must be many different areas take into consideration. CDD data must be first collect to database. However, data collection is not the hardest part of the process. Challenges in customer due diligence is to detect criminals in the customer data. The challenge is to monitor customer data so that it is effective and don't cause too much inconvenience to the honest customers. Honest customers are not happy to provide unnecessary explanation ordinary transfers. Challenges are caused by the fact that there is no normal or usual payment behavior. There are always different kinds of specials situations that are causing unusual payment behavior. These situations can for example buying a car or living abroad.

In this chapter is shortly describe how the whole AML scheme is handled inside of a bank. Firstly it is crucial to understand all the regulations related to AML. This means in Finland that EU directives, local regulation, laws, guidance and international

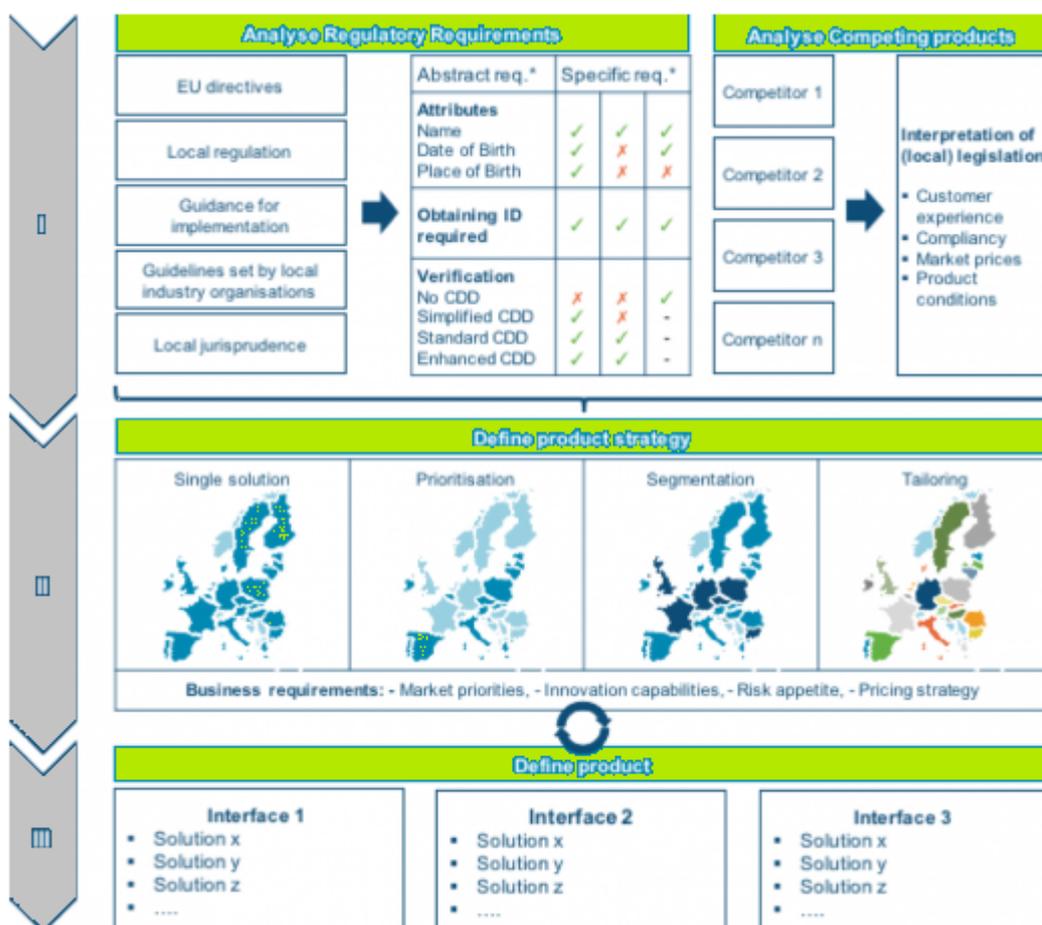


Figure 6 Creation process of AML compliant product

Figure 6 (Fiolet 2018) shows how compliant AML system can be created theoretically. There is three major stages in this process.

1. Analyzing regulatory requirements and based on that choose system providers whom product must be looked more carefully.
2. Product strategy must be defined so that it is possible to make further analysis about different product providers.
3. Definitions and requirements of different interfaces.

Analyzing is time consuming, but it must be done well because investing in AML information system is longtime investment. Client is probably the system it chooses at least ten years. Therefore, the decision must be done carefully.

3 Critical literature review

The focus of this literature review is to research what is the current state of anti-money laundering, in customer due diligence and prevention of terrorist financing in banking sector. This literature review research the previous studies that are done related to AML scheme. Literature review covers the contents of the research, sample in each research, methodology used in the research and all the critical findings of each research.

In theoretical framework section was covered the regulation and compliance of due diligence, anti-money laundering and prevention of terrorist financing. This part of the study is focusing on literature and other studies in the field of banks customer due diligence.

3.1 The Real Meaning of AML and Scale of Money Laundering

Alldrige (2008, p. 442) points out that in AML there is two major aspects: “prohibitory” aspect involves the criminalization of money laundering, ‘preventative’ side covers the regulation of markets and legislation of the reporting obligations. In this research the focus is purely on preventative side of AML. So, the research concentrate on the obligations that are set for the banks.

The estimated amount of money laundered globally in one year is 2 - 5% of global GDP, or \$800 billion - \$2 trillion in current US dollars. (UNODC 2019) Even though the range of the values is wide, the estimate underlines that the money laundering is really massive issue, therefore banks and governments really have focus on the issue. Governments have already pledged to address issue. Now they have to redeem their promises.

3.2 Money laundering and globalization

Peter Alldrige is a person who has researched money laundering a lot. Alldrige (2008) has point out that in 1990s that even though there was a fear of the money laundering problem because of globalization, the global justice institution would

come too expensive compared to the harm that money laundering problem was issuing. Times has changed a lot after the financial crises and now many banks and other organizations are promoting joint organization that could handle AML process across the country borders.

3.3 AML & Risk Management

On banks' standpoint the basic idea behind AML is risk management. By performing customer due diligence process is costing banks' a lot of money. So, the banks are balancing between exposing to the cost of regulatory action and cost of CDD process. Bank is always trying to minimize the total costs, therefore it should find the optimal balance between regulatory risk and cost of CDD. Banks balance the cost of due diligence and regulatory risk (Collin et al. 2016).

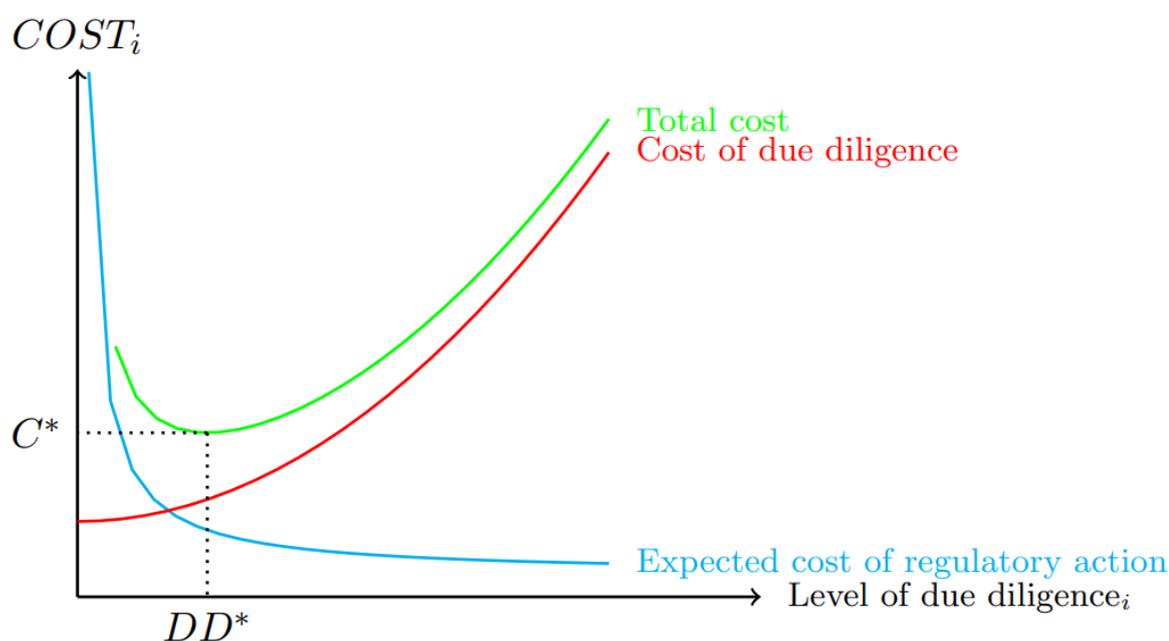


Figure 7. Optimal level of effort putting to CDD (Collin et al. 2016)

Matthew Collin is a researcher who has studied a lot of risk management related to AML. Fulfill the Anti money laundering act is not easy for the banks. Banks revenue model is striving banks completely to another direction. It is just more profitable not to pay attention to dirty money, if there is not to risk receiving fines from AML, therefore banks must focus on their risk management.

The volume of the transactions is big and quite fast pace so therefore misuse is usually already happened when it is noticed. The latest nuance is that cryptocurrencies are making monitoring of money laundering more difficult, because the true owners of the money are easier to hide. So, even if the computing power is making the AML monitoring more easier, but on the other hand new ways of moving money is making AML controlling processes more complex, therefore it is difficult to say whether the technological improvement is making banks AML risk management harder or easier today than in the past. It is obvious that the digitalization of banking industry is increasing the transparency in banking sector. It is a completely different thing whether the digitalization is making AML monitoring is making more easier or not.

3.4 Anti-money laundering and information systems

Chen et al. (2018) are emphasizing the robust information systems as part of AML, AML solution systems is part of the overall AML process control, systems automates and helps reduce the manual parts of a AML process. Effective ways to AML solutions are necessary, but highly challenging. In particular, the rising volumes of customer transactions and the increased automated interaction with customers have made AML compliance more difficult. Actually, information systems are very central part of AML process because almost all of the banks data is digital, and it is natural that information systems do most of the work also in AML process. The implementation of AML solution is quite challenging because of the massive amount of transaction data and complexity of payment systems, but after the AML solution implementation is done the savings in manual work are also remarkable.

AML and prevention of terrorist financing has been actively written from beginning of 2000's. After 2010 the topic has become popular. There has been many leaks such as Panama pares, HSBC drug cartel and many others. When new decade is to begging to start it is time to improve monitoring and legislation so that this kind of behavior comes harder to accomplish in the future. First it is important to focus on what it is to main goal of the CDD, AML and CFT process.

Drezewski et al. (2012) are pointing out that because the money laundering related data is very quantitative, there is a clear need for information system that can collect the data need under one system and analyzing data with algorithms. These algorithms are often utilized by doing transaction mining algorithms and pattern detection algorithms. It is obvious that information systems can be used for very powerful tool when analyzing banks' transactions and customer data. With correct information system it is possible to automatize most of those task which were done previously manually.

Yasaka (2017) is also emphasizing that data mining can be used when tackling the money laundering problem. It is obvious that information systems will be playing a bigger role in the future, when trying to do the prevention of money laundering. When using machine learning techniques in AML it is important to pay attention to data preparation, data transformation and data analytics all of these are the ground for the utilization of techniques such as machine learning (Chen et al. 2018). Because banks have such enormous amount of data, the data preparation stage must be done durable and robust, so that the AML analytics and machine learning functions can be as effective as possible and that time to use the implementation on of machine learning algorithms is as short as possible.

Information systems cannot replace the whole AML process and human itereaction is very important when executing effective AML process. Even if the algorithms are widely used in information sysmes and it is trying to replace some of the routine task in AML process, money laundering can be detected most powerfyllly by using human- and technology-generated decisions (Demetis 2018). This is a typical example of the phenomenon where technology is replacing some of the routine work, so that the human has more time to do more complex task. Automation of routine work in AML process has major advantages to the efficiency and accuracy in AML.

Drezewski et al. (2012) are stating that: "Criminal analysis is a complex process involving information gathered from different sources, mainly of quantitative char-

acter, such as billings or bank account transactions, but also of qualitative character such as eyewitnesses' testimonies. Due to the massive nature of this information, operational or investigation activities can be vastly improved when supported by dedicated techniques and tools." This is very much true. Even when world is always talking about new kinds algorithms, artificial intelligence and machine learning, the fact is that those are hard to do. Especially in banking world where old legacy systems are so heavy and where even the smallest interactions are not easy to do.

3.5 Controlling risk with anti-money laundering

Collin et al. 2016 have collected evidence from SWIFT data which supports the claim that complicated compliance and regulation related to AML topic, has forced banks to do de-risking. Because of de-risking remittances across borders to some countries has decreased. Nowadays banks are listening a lot of FATF requirements and this may lead to the positions where some countries remittances are not happening because of de-risking. This obviously has a negative impact to the risk countries economy, because international money flows have decreased.

3.6 Confluence to the regulation

International stage of anti-money laundering regulation is correctly very fragmented. Ebikake (2016) is pointing out that, while the role of the FATF remains unclear in international law. William Vlcek (2011) is also pointing out that there should confluence of international initiatives to do AML and CFT. So, AML phenomenon is still missing clear guidance from legislation standpoint how the AML controlling should be considered with international law. Nowadays, the major focus of AML regulation is in domestic criminal legislation and in EU legislation. More focus should be concerned towards development of international legislation.

There have been some papers written about the fact that there should be more converge in AML scheme globally and the regulation should be more united. Mugarura (2014) is stating that there should be a global AML paradigm, which would help to reduce overlapping of regulation. Cooper and Stack (2018) have created

an overview of anti-money laundering organizations within the United States, Canada and internationally and their main idea in their research is that there is going to be more integration and information sharing nationally and globally. This is a statement that has been heard many different researchers, therefore it is possible that in the future more cooperation and legislation are done globally in AML field.

3.7 AML as barrier for people's everyday financial services

Second, it must be identified what the CDD, AML and CFT process is not meant for. De Koker (2006) points out that CDD can result to financial exclusion. By that he means that some financial services are not available for everyone. By this De Koker means that financial institutions should not limit financial services availability too much. Even when the customer is not perfectly fulfilling all the CDD requirements.

From Colin et al. 2016 are showing emphasizing that there is growing evidence that AML controls are affecting a number of cross-border activities, including remittances, correspondent banking relationships, trade finance and humanitarian operations run by NGOs. This means that AML is not always good, and there should be just enough limitations in capital flows when completing AML, not too much and not too little. Also, criminals are always a step ahead, therefore banks must improve their processes all the time.

Collin et al. (2008): "Regulatory pressure on international banks to fight money laundering (ML) and terrorist financing (TF) increased substantially in the past decade. At the same time there has been a rise in the number of complaints of banks denying transactions or closing the accounts of customers either based in high risk countries or attempting to send money there, a process known as de-risking." This is definitely harmful if banks customers are suffering because bank is doing its de-risking, therefore there should be optimal balance between controls and freedom.

The European Banking Authority (2016) focuses also to the financial exclusion. It states that the customer due diligence should focus on asylum seekers. In 2016

EBA stated One of the problems was that part of the asylum seekers' identity documentation was consider missing out of robustness and reliability. This created unique compliance challenges for credit and financial institutions. EBA stated that credit and financial institutions should provide at least the basic financial services. This will reduce the risk that "dirty money" goes underground. Risks can be reduced by offering only limited financial services and also by setting stricter monitoring controls to asylum seekers. Overall it is noticeable that CDD process should not be too strict so that it limits people's opportunities to basic financial services even if AML and CFT processes are important.

3.8 State of the art and different actors in AML field

State of the art project this coming together is Nordic KYC platform. Six of the major Nordics banks has introduce the project where they try to do collaboration AML platform (Dow Jones 2019). Probably the idea is also to sell the platform for their corporate clients. This interesting project also concerns Finish banking industry because banks who working also in Finland are part of the project.

Bergström et al. (2011) made an analysis about the roles of public and private actors in AML. The empirical data was based private actors in UK and Sweden. The research is stressing the fact that there should be a clear role between public and private actors when handling AML. The concern is genuine, because now it feels like the decision of how the AML controlling is done, is highlighting banks' role in AML. Banks' are nowadays the actors who are deciding how AML process is implemented.

Bergström (2011) has also analysed about the EU's AML directive, the argument of is that the banking sector is given a role that is traditionally the prerogative of the public actors. This is true, and it is required for the banks that they are nowadays more and more responsible of public actor, by this it is meant that banks must do such a things that was managed for example by governments before.

4 Major AML regulators and organizations in Finland

This research delivers all the major concepts and definitions under the AML phenomenon which are described in chapter 2. Also, the idea is to combine all of the sub-topics under the one robust scheme. So that reader can connect easily all the different concepts and acronyms to each other. The main idea overall was that the AML as a phenomenon becomes clearer and more understandable.

Another major goal of this research is to provide information about the AML regulation. Idea is to study and go through the current AML regulation and requirements. This research tries to explain what is really relevant and important to take into account when building AML processes in banks, so that persons who don't have master's in law can also easily understand the basic requirements and legislation of AML scheme.

In this section idea is to conclude what is the state of the current regulation. Also, this section reviews what kind of regulation is set outside of European Union.

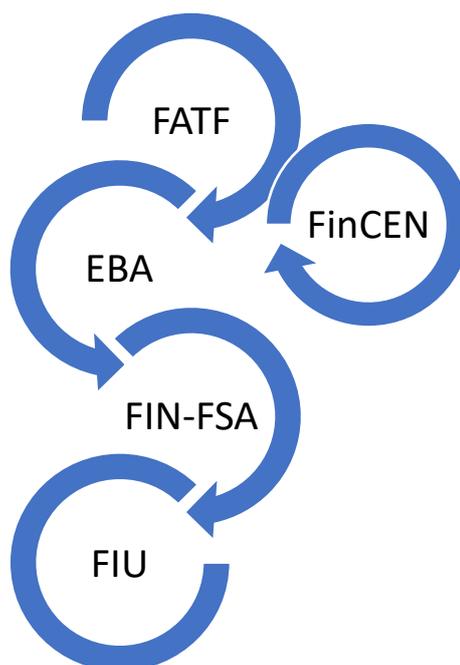


Figure 8 Regulation framework in Finland

Figure 8 is showing that five of the major organization that this research is taking into consideration when talking about AML regulations. FATF is the global organization that is setting kinds of regulations. Often FATF is heard it's as stated it's opinion about something with something AML related. European banking authority (EBA) is handling AML regulation in EU area, on the other hand FinCEN Is setting the rules in the United States. Under EBA are the national regulations. In Finland, there are two major institution who are dealing whith the regulation of AML and CDD. These institutions are Financial Intelligence Unit (FIU), which is part of the unit of National Bureau of Investigation (NBI) and FIN-FSA or FIVA.

In Finland Finnish Financial Supervisory Authority (FIN-FSA) ia handling most of the regulation process. Finnish banks must take care of the regulation. In Finland the Financial Intelligence Unit (FIU) is responsible for the investigation related to AML. These two organizations are responsible for that financial organizations are working under the Finnish law.

4.1 AML in Financial Supervisory Authority (FIN-FSA),

Finanssivalvonta,(FIVA) or the Financial Supervisory Authority (FIN-FSA), is the authority for supervision of Finland's financial and insurance sectors. The entities supervised by the authority include banks, insurance and pension companies as well as other companies operating in the insurance sector, investment firms, fund management companies and the Helsinki Stock Exchange. (Fiva 2019b) This means that FIN-FSA is responsible for the regulation setting for Finnish banks, and because of this it is also very central player in AML field in Finland.

4.2 The Financial Intelligence Unit (FIU)

The Financial Intelligence Unit (FIU) is founded in Finland as a part of the National Bureau of Investigation (NBI) in 1998. Its duties are connected to money

laundering and terrorist financing issues. (FIU 2019) FIU is that official who is responsible for investigation and solving AML cases. FIU do most of its work based on suspicious activity reports sent by Finnish financial institutions.

Under section 2 of the Act on the Financial Intelligence Unit (445/2017), the Financial Intelligence Unit carries out the following duties:

1. preventing, exposing and detecting money laundering and terrorist financing, and referring such matters to investigation;
2. receiving and analysing suspicious transaction reports referred to in the Act on Preventing Money Laundering and Terrorist Financing (444/2017, Anti-Money Laundering Act), and giving feedback on the effects of such reports;
3. cooperation with authorities in the fight against money laundering and terrorist financing;
4. cooperation and exchange of information with the authorities of a foreign state and international organisations responsible for detecting and preventing money laundering and terrorist financing;
5. cooperation with parties subject to the reporting obligation;
6. keeping statistics on the number of suspicious transaction reports received and the number of transactions suspended under the Anti-Money Laundering Act, on the number of suspicious transaction reports referred to investigation and on information requests made, received, rejected and responded to; and
7. receiving reports referred to in the Act on the Freezing of Funds with a View to Combating Terrorism (325/2013), establishing grounds for the decisions to freeze funds as referred to in the said Act and making proposals concerning decisions to freeze funds.

The Financial Intelligence Unit operates in three teams: The Examination team receives suspicious transaction reports, as well as evaluates and examines the reports. The team also conducts preliminary police investigation and, as necessary, refers suspicious transaction reports to pre-trial investigation. In addition,

the Examination team responds to domestic and international requests for information and manages relations with cooperation partners. (FIU 2019)

The Terrorist Financing and Freezing of Funds team (TFT) carries out the duties related to the financing of terrorism, including examining and analysing terrorist financing reports and gathering information on relevant matters with respect to counter-terrorism. Furthermore, the team prepares the decisions to freeze funds under the Act on the Freezing of Funds with a View to Combating Terrorism and maintains the public list of the decisions. (FIU 2019)

The Analysis team produces operative and strategic analysis, statistics required under the law and the annual reports of the FIU. The team also develops information systems used by the FIU. (FIU 2019)

Financial Intelligence Unit (FIU), the unit of National Bureau of Investigation (NBI), has released new guidelines for identifying money laundering indicators. New guidelines were released in January 2019. FIU list of general indicators that persons working in field of finance must concentrate on:

- Customer profile related indicators
- Customer account transactions
- Cash assets
- Remittances / International payments
- Records and documents
- Juridical persons
- Loans
- Corruption indicators

These above mentioned indicators are under the loop of FIU, and its wants to concentrate on those things in AML, therefore banks should put the most effort figuring out those indicators.

4.3 European Banking Authority (EBA)

European Banking Authority (EBA) Is managing anti money laundering scheme European Union. EBA (2019) is describing its role related to ALML in following way: “The EBA is required to ensure the integrity, transparency and orderly functioning of financial markets, strengthen supervisory cooperation and prevent regulatory arbitrage, among others. As part of this, the EBA takes steps to ensure that competent authorities and credit and financial institutions within its scope apply the provisions of European Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) legislation effectively and consistently.” This means that European banking authority regulates, and coordinates AML process is in the whole EU area.

in European Union AML regulation is covered in directive Anti-Money Laundering Directive. Currently in the EU are the 4th AML directive is valid. 5th Anti-Money Laundering Directive have to implent to the national law by January 10, 2020

Current law is listed in EUR-Lex (2019) Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU. It is directed so all the countries should imply it to their own national law, but it is only guidance so countries can decide by themselves how to imply the regulation into their own national law and regulations.

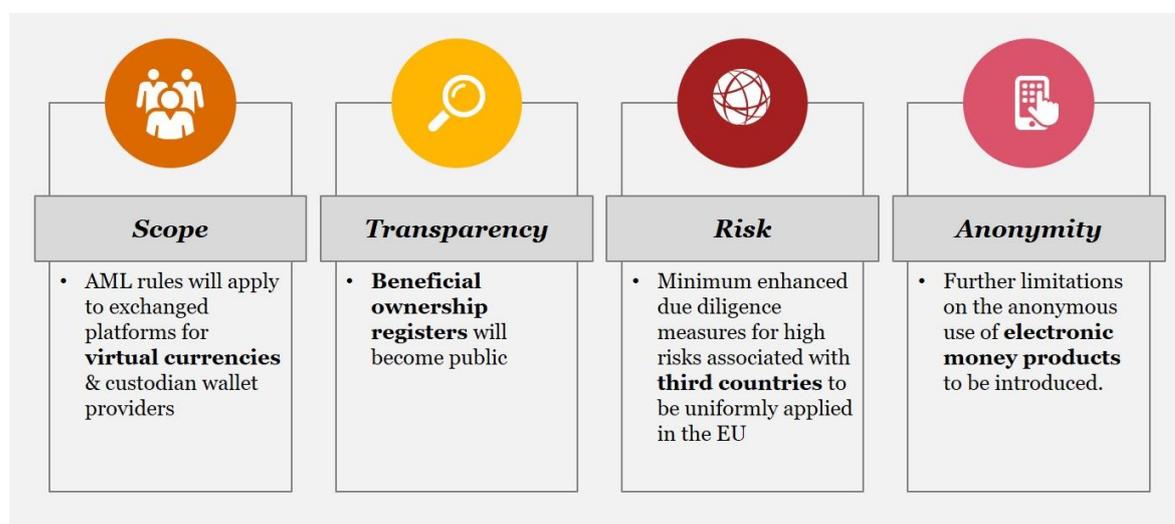


Figure 9 Overview of the main changes introduced by the 5AMLD (PWC 2018)

In figure 9 has listed the biggest changes coming from the new AML directive agreed by The European Parliament. In the future EBA wants clearly make AML regulations and supervision more unified all over the EU are. This would make the process more clear, simple and effective. (European Commission 2018) This is probably the need that all of the different parties want to accomplish around of AML in a long term.

4.4 Regulation in USA

Dreyer (2011) is stating: “The main tool to combat money laundering in the USA is the Bank Secrecy Act. OFAC is an acronym for the Office of Foreign Assets Control, an agency within the U.S. Department of the Treasury. Not actually part of BSA, it is so closely related that the regulatory agencies treat it almost as if it were.”

FinCEN (2019) is a bureau of the U.S. Department of the Treasury. The Director of FinCEN is appointed by the Secretary of the Treasury and reports to the Treasury Under Secretary for Terrorism and Financial Intelligence. FinCEN’s mission is to safeguard the financial system from illicit use and combat money laundering and promote national security through the collection, analysis, and dissemination of financial intelligence and strategic use of financial authorities.

In 2014 United States Court of Appeals found a Jordan-based Arab Bank guilty to actions related to terrorism funding. It was the first time when bank was found for violating the Anti-Terrorism Act. (International Financial Law Review 2018) This means that USA is also putting some force to the anti-money laundering regulation and legislation.

4.5 Financial Action Task Force (FATF)

The Financial Action Task Force (FATF) (2019) is an inter-governmental body established in 1989 by the Ministers of its Member jurisdictions. The objectives of

the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system. The FATF is therefore a “policy-making body” which works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.

The FATF has developed a series of Recommendations that are recognised as the international standard for combating of money laundering and the financing of terrorism and proliferation of weapons of mass destruction. They form the basis for a co-ordinated response to these threats to the integrity of the financial system and help ensure a level playing field. First issued in 1990, the FATF Recommendations were revised in 1996, 2001, 2003 and most recently in 2012 to ensure that they remain up to date and relevant, and they are intended to be of universal application.

The FATF monitors the progress of its members in implementing necessary measures, reviews money laundering and terrorist financing techniques and counter-measures, and promotes the adoption and implementation of appropriate measures globally. In collaboration with other international stakeholders, the FATF works to identify national-level vulnerabilities with the aim of protecting the international financial system from misuse.

FATF is regulator who is giving international organizations. FATF's standards are of the included in EBA's regulations, therefore FATF is a major player whose voice is heard in AML field

4.6 An Overview of AML Organizations

Overall the AML organizations are playing major role with prevention of money laundering work. They hold major power and responsibility, because money laundering and terrorist financing are both just so huge problems. They are causing lot of inequality and suffering to the world and are very hard to solve because of their natural structure of complexity.

5 Data and methodology

In this section data collection methods and methodology is described. First, the research methodology is described. After that, this section focusses on the data collection method, the data sample and how is the data collection is done.

5.1 Methodology

The persons who are working in AML field is very limited, therefore it is not easy to collect large quantitative sample related to AML, because there is not that many people who are specialized with AML. Therefore, in this research the sample size is limited, and the intention is to collect qualitative data.

The idea is to study what is the current situation in AML field now and what are the future trends in the field. This research is done from banks point of view and the research also considers the role of information systems in current and future situation of AML scheme.

This research also provides information from AML personnel point of view. The empirical data is collected by running a survey for the persons who are working with AML processes in their work. After having survey, the research summaries, the current state of AML in small Finnish banks and tries to make some assumptions about the future of AML scheme. Finally, the research will suggest how the whole AML scheme should be undertaken by banks., and what improvements banks should the in the future in the area of AML. The suggestion also takes a stand how regulators and IT-providers should handle the AML scheme; so, how should the regulatory and technical requirements managed for AML scheme in the future.

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The primary data was collected because there was no earlier research about the subject. Also, the was a unique possibility to collect data from people who are working in different fields of finance sector such as AML, law, IT and customer service.

5.2 Sample

The data of this research is collected from primary sources. The data collection was done by doing a survey for the banks personnel who are working with AML related task in their work. The answers were from 8 persons who are working with AML. This survey tries to collect qualitative to data from the persons who are participating in this survey. To participants where personnel responsible for AML. They were working in Savings Banks (Säästöpankki), OmaSp and Samlink. The basic information about respondents are listed in table below in table 1.

Respondent	Organization	Title
R1	Samlink	Security Manager
R2	Savings Bank	Special Service Advisor, AML
R3	Savings Bank	Special Service Advisor, AML
R4	OmaSp	Product Specialist, AML Development
R5	Samlink	Head of Reporting
R6	Savings Bank	Special Service Advisor, AML
R7	Savings Bank	Risk and Compliance Officer
R8	Savings Bank	AML Compliance Officer

Table 1 Information about survey respondents

The empirical data was collected from the people who are working with anti-money laundering related task in their everyday work. There is only handful of people working in banking industry, who really know about customer due diligence and due diligence related topics.

5.3 Data collection

First, there were around 35 questions, but after the considering all the questions, 25 of the questions were selected to the final version of the survey. Three of these questions were for collecting meta-data. Here, organization, designation and field do banking was collected to the survey. The original language of the survey was Finnish, and survey and answers were translated to English for this thesis. The questions asked are listed in appendix 1. When doing the selection between the questions, additional help was used.

Survey is done by using questionnaires where respondent have both open questions and predefined answers. Predefined answers were collected by using Likert scale. This survey was done between May and June. The link was sent via email to the respondents. The platform used for the data collection was Qualtrics, which was offered by university.

5.4 The structure of survey

The idea of this survey was too figure out what Dave different the persons who are working with AML think about the current situation of the AML and what are their opinion about the future of the AML.

There is two main goals in this survey. Firstly, this survey tries to answer the question: "What are the personnel who are working with AML thinking about the current situation of AML phenomenon?" Because AML is obligation for banks therefore the survey also pay attention do the application part. The survey tries to clarify what

do the personnel working with AML are thinking about the obligations of the legislation and compliance.

The second goal was to figure out: "What could be the future of AML phenomenon?" Because of the rapid change in AML field this is also interesting topic. The lightest lighters banks and other organizations around AML are thinking new ways completing AML in the future. Therefore, this survey tries to answer the question: "What are the thoughts of future of those persons who are working with AML in their everyday work."

There were three different types of questions in the survey: multiple choice questions, questions with predefined answers and open field questions. In this chapter is described the answer's too multiple-choice question. Multiple-choice questions listed in Table 1 were done by using Likert scale, so there were predefined answers for respondent to choose for. In this research five-level Likert scale was used, and opinions there were following:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

6 Results of the survey

This is the analysis part of the research. Here is described surveys multiple choice answers from the respondents. After that, the thesis covers answers from open field questions. At the end of the chapter, there is overall summary about results gathered combined from every part of the survey.

6.1 Answers from multiple choice questions

Table 1. Results from predefined answers

Question	Mode	Avg.	Min.	Max.	STD
Q5	5,00	5,00	5,00	5,00	0,00
Q6	4,00	4,00	2,00	5,00	0,87
Q7	5,00	4,13	3,00	5,00	0,93
Q8	2,00	2,13	1,00	4,00	0,93
Q9	2,00	2,25	1,00	4,00	0,97
Q10	5,00	4,50	3,00	5,00	0,71
Q11	3,00	3,25	2,00	5,00	0,97
Q12	2,00	1,88	1,00	3,00	0,60
Q13	5,00	4,38	3,00	5,00	0,70
Q19	5,00	4,88	4,00	5,00	0,33
Q20	5,00	3,88	2,00	5,00	1,45
Q21	5,00	5,00	5,00	5,00	0,00
Q22	5,00	4,88	4,00	5,00	0,33
Q23	4,00	3,38	2,00	5,00	0,99
Q24	4,00	3,50	2,00	5,00	1,00

In table 1 when doing analysis, it is possible to see that in questions 5 and 21 the opinions there is united opinions because the average was 5 and standard deviation was 0. So therefore, there is consensus on Q5: opinion is that AML is important. In Q21 it is possible to see that there should be more effort put into the information systems related to AML. From the answers, it is easy to see that popularity im-

portance of AML and AML related information systems. Popularity of AML and information systems is quite natural based on current trend collected from literature and other sources.

In table 1 it is possible to see that the biggest difference between respondents was related to Q20: "By using more automatic algorithms, the prevention of money laundering can be improved and the total costs can be reduced at the same time." where the standard deviation was 1,45. The difference between answers is probably related to the fact that some persons are thinking that algorithms can save time and reduce costs, others can think that it is not possible to save total costs in AML because probably banks will need more money put in to AML in the future regardless of algorithms. On the other hand, this question gives possibility to answer two different things: time saving and cost reduction. For example, some respondents that might think that it is possible to save time but not costs, but others might think that it is possible to save both time and money with algorithms.

6.2 AML current state – non-Likert scale questions

This section of the thesis explains the most interesting answers to non-Likert scale questions of the survey. In this section both multiple-choice question and open question answers are introduced. The open questions were focused about the current situation AML process and the future of the AML process inside of banks.

In question 14, respondents were asked to choose at least three of most important things related to combating terrorist finance. The question 14 was following; "What are the most important information of customer due diligence when combating terrorist financing?" The most popular answer to this question was to analyze International payments and especially payments between risk countries. The result is quite natural because terrorist financing is often related to international transactions and payments. The second most popular answer was to focus on sanction list monitoring and other payment monitoring. this means that suspicious transactions must be monitored and aborted or freeze when needed. Obviously, sanction list monitoring is also important aspect when combating against terrorist financing. This is because many international terrorist groups and their members are listed

in sanction lists. The third popular answer was customer identification and verification at the beginning of New customer relationship, so the situation where the customer is established banks customer relationship management system. It is also quite natural that customer identification and verification are felt important. This is because of the fact that bank wants to prevent open services to people who wants to finance terrorism. Other things answer to question 14 were following and updating the risk class of the customer, take notice to unusual money transactions and pay attention to real beneficiary owners of the companies. These processes are of course also important when focusing to terrorist financing.

Question 15 was focusing more towards anti-money laundering. The structure of the question was similar than in previous question, so respondents were asked to pick at least three most important things in anti-money laundering. question was following; "What are the most important information of customer due diligence when combating money laundering?" Popular answer How to prevent money laundering was to analyze suspicious and unusual transactions and payments. All the different payment analysis was supported in the answers. So, this covers unusual payments, international payments and comparison between expected versus actual amounts of payments. Second popular answer to question number 15 was customer identification and verification. So, in anti-money laundering it is also important to pay attention to customer when new customer relationships that is established. Third popular point risen from question 15 worst to pay attention to companies and especially for those ultimate beneficiary owners in the companies. It is also quite natural that this is related to AML, because often companies are those organizations which are used for money laundry. Answers also pointed out that banks should focus on risk-based assessment when preventing money laundering.

The question 16 was related to challenges in AML process, and it was: "What is the biggest challenges when doing AML monitoring?" When asking about biggest challenges in AML they were related to following things: amount of data, rapid speed of transactions, identification between money laundering and unusual transaction, missing customer data and other missing information and inconvenient information systems.

Question 17 focus on it's a different type of abuses, and is asking: "What types of abuses are easiest to spot?" When reading answers to this question it is obvious that unusual transactions are easy to spot. Also, cash deposits are also easy to recognize for money laundering. There was nothing special in the answers of question 17. It is quite usual that unusual transactions are easiest to spot in AML.

In Q18 the question was a reverse compared to previous question: "What types of abuses are hardest to spot?" Here the most challenging was to spot money laundering done by companies. This also support the idea that often money laundering is happening by using companies. On the other hand, several transactions were amounts were small were also hard to spot. These answers are making a lot of sense, because in companies it is the most easiest to hide money laundering, because real owners of the companies are easy to hide.

6.3 AML improvement in the future – non-Likert scale questions

When asking about the improvements in Q25 AML in the future tomorrow's the most requested answer was to put the whole AML process under one dedicated system so that all the information is manage automatically as much as possible. This makes totally sense because it is the most efficient way to handle AML when all the necessary information is under one unified system.

When asking about how to improve AML process is In the future, there were many different good ideas. Most of them were related to ease of use of information systems. One example was that there could be dynamic system that would ask more details based on the answers when identifying and verifying customer. This is good idea which might help to get AML related data more accurate and practical when analyzing customer base. This would also make the bank officials work easier and would focus the work towards right things. One suggestion was to share more information within banks and make this decision about SAR Based on the information that was collect from multiple sources. Another idea was also that there should be mechanism inside of information system which would force the official

to fill all the necessary information about customer. One idea was to improve AML process inside of AML system. In AML system there should be user-based adjustment options available so that official could adjust the product based on the risk assessments. By doing this the official could do more efficient work and focus on more critical risk level customers. Also, there was suggestion that to improve to level up automatization and robots, because AML includes loads of manual work. This is quite obvious point best must be consider in the future, because many different steps in AML can be automated.

When asking about that is there any things to consider end customer due diligence which would make the AML easier. The answers were related to customer's transactions analysis. Also, there should more training any information about customer due diligence, so that it would be easier to there are officials to understand why are these CDD and AML related things important. Also, robustness of data is mentioned, and this means that the all the customer data must be fulfilled as perfectly as possible. this is because of the fact that the analysis can be done from the data. One answer was that the focus should be what are the major opposing parties where the money is transferred within. These are all important points because check quality of data is crucial and also payment flow between accounts also very crucial when analyzing on to money laundering.

One person was also reminding that it is very important to know companies' actual beneficiary owners and the real reasons behind the business. Of course, this is also very important because often money laundering is happening inside the company behind the sights.

Overall it seems that current state of AML is quite what expected. easiest AML cases to spot is those were the amounts are high. Harder part are those situations where money laundering is happening inside a company or those cases where transactions are small and frequent.

In the future, responders are hoping that AML process is more combined than today. Also, there should be for more information about AML as a phenomenon in inside of bank, so that it would be easier for the personnel to understand why bank must do AML process. More training is needed inside of banks.

7 Results and discussion

Major focus of this thesis is to research is review the current state of AML both in Finland and globally. Also, this thesis tries to understand the future trends of AML. This section combines results from literature review (chapter 3), regulation part (chapter 4) and empirical part (chapter 5 and 6). Moreover, limitations and further research suggestions are provided end of this chapter.

Here are answers provided to the research questions in following paragraphs.

Primary question:

How can banks do effective customer due diligence monitoring related to AML and prevention of terrorist financing under the current regulation?

Answer for the primary question is that banks should improve many different areas related to AML. It is mentioned often that there should be more unified global regulation in AML. This would help to prevent global money laundering. Also, more effort must be put into information system so that they are supporting the process as well as possible. Third point is to improve knowledge inside of banks so that more people in banks are aware of money laundering and how to prevent it.

Sub-question 1:

What is are the requirements that banks must follow based on regulation?

Banks must be able to prove for the FIN-FSA (Finanassivalvonta) that they are following regulation and doing enough work related to anti-money laundering.

Sub-question 2:

What is the current state of AML in banks Finnish banks?

Current state in Finnish banks related to AML is passable but not good. There is definitely lot of work to do in AML. Banks cannot do everything under should be also more effort from the regulators so that it would be for the banks to do the AML

process. Currently a regulation and guidance is quite imprecise and unclear, So banks must be quite creative how they meet the regulative requirements.

It seems that the current state of AML process in Finnish banks has done mostly by utilizing information systems. There is different kind of approaches how AML process is completed in practice. Even though information systems is used, there is many things that can be improved so that the AML process becomes more efficient and powerful. There is quite a lot manual work done in banks that could be done with information systems. The investment for the AML platform requires lot of resources and is expensive in the implementation stage, but when AML platform implementation is done, the analyzing work of AML becomes much more sufficient and effective.

Sub-question 3:

How to improve AML process in the future?

Many different sources are suggesting that there should be more integration between different stakeholders of AML problem. Nowadays, banks FIN-FSA and Financial Intelligence Unit. Nowadays, banks are working quite separately with their AML issues this because of due to the strict bank secrecy rules. It seems quite obvious that more emphasis is poured into AML information systems which are helping combining data and making every day work easier. Customer end transaction information is in the middle of AML. Especially transfers outside of SEPA area are interesting. Other major issues related to AML are ownership of companies and real beneficiary owners of companies. From standpoint of information system, the most crucial thing is to make AML process as simple as possible.

7.1 Limitations and further research

Limitations: This thesis examined AML phenomenon between banking and information systems, therefore the approach to the subject is hybrid between banking

and information systems. Thesis did not cover AML very specifically either banking or information system standpoint because of the hybrid approach. It would be recommended that more research of AML should be done more specifically from financial institution standpoint and information system provided standpoint.

8 Conclusions

Importance of AML has increased during past few years. It is hard to say where the AML phenomenon is going in the future, but one thing is sure: all the different organization around AML want to make anti money laundering process more effective in the future.

Information systems are used in AML process inside of banks today, but, full potential of information systems in AML is not utilized yet. The importance of information systems will increase in the future. Different kinds of AML machine learning algorithms and artificial intelligence will help to develop more efficient information systems. When practicing AML process, Bench should avoid manual work as much as possible so that they can focus their workforce to the AML case investigation.

It is hard to forecast which direction AML regulation will improve in the future, and how much consolidation will happen between banks and regulators will happen in AML field in upcoming years. One thing is clear, there is an interest from different parties to the direction that regulations should be more consolidated, so that AML process can be handled in the best possible way in the whole EU area and globally.

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APPENDICES

Appendix 1 Survey.

Q1. Introduction: This survey tries to understand the current state and future scenarios of anti-money laundering and customer due diligence. In this survey anti-money laundering is meaning both prevention of money laundering and terrorist financing if nothing else is mentioned..

Q2. Organization

Q3. Title

Q4. Who are you connected to anti-money laundering and customer due diligence? (multiple choice)

Q5 In my opinion anti-money laundering is important. (Likert)

Q6 The recent media attention related to money laundering has been too intense. (Likert)

Q7 The recent news of money laundering has got me thinking banks money laundering more seriously. (Likert)

Q8 There is a contradiction between obligation to do customer due diligence reporting and bank secrecy. (Likert)

Q9 Bank secrecy is limiting customer due diligence monitoring and reporting money laundering. (Likert)

Q10 It is easy for the bank to report money laundering. (Likert)

Q11 The guidance is explicit concerning prevention of money laundering. (Likert)

Q12 Anti-money laundering tasks are harming banks business. (Likert)

Q13 It is a good thing to focus on risk countries when combating terrorist financing. (Likert)

Q14 What are the most important information of customer due diligence when combating terrorist financing. (pick three; multiple choice)

Q15 What are the most important information of customer due diligence when combating money laundering. (pick three; multiple choice)

Q16 What are the biggest challenges when doing AML monitoring? (pick three; multiple choice)

Q17 What types of abuses are easiest to spot? (open question)

Q18 What types of abuses are hardest to spot? (open question)

Q19 System that covers the whole money laundering monitoring and reporting would help prevention of money laundering process. (Likert)

Q20 By using more automatic algorithms, the prevention of money laundering can be improved and the total costs can be reduced at the same time. (Likert)

Q21 There should be more training related to prevention of money laundering and customer due diligence for the employees. (Likert)

Q22 There should be more cooperation between banks so that the AML process would come more efficient. (Likert)

Q23 There should be global regulation and organization, so that anti-money laundering process would come more united and efficient. (Likert)

Q24 Global AML center would make AML process more efficient. (Likert)

Q24 How to improve anti-money laundering process with the information systems?

Q25 How banks can improve prevention of anti-money laundering and customer due diligence processes in the future. (open question)

Q26 Is there some kind of area the comes to mind which should take into consideration in customer due diligence so that prevention of money laundering would come easier? (open question)