A Framing Contest Between Institutional Actors on Crypto-Asset Policymaking in the EU

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NINA FRAUSING PEDERSEN

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CBS

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To Ellen – My True Inspiration.

Allowing the ends to meet will make you realize and appreciate the process of learning.

Prologue

It was a fresh and clear February morning in Brussels. I woke up earlier than usual and could feel a sense of eagerness and excitement in what was about to happen that day. Just one month into my PhD journey I had been invited to participate in an industry working group that consisted of companies operating in the Blockchain and virtual asset [crypto-asset] space. Since 2015, Nets, my host company, has been one of the organizations engaged in the formation of the working group through an EU regulatory affairs consultancy. Now it was my turn to take a seat at the table and engage in the conversations with regulatory authorities to create shared understandings and actions about crypto-assets and how the growing industry could be regulated. I was excited but also nervous at the same time. I had not studied law or political science. I was not familiar with either the written or spoken language of law. But what I did know was how big an issue regulation, or more accurately, the lack of regulation was for the industry. During the first month at my host company, blockchain-related projects were going through re-structuring due to rising regulatory uncertainty. The main reason for uncertainty, shared by senior managers, compliance experts and technical experts were the regulatory hurdles, and lack of knowledge about when, if, and how this technology was going to be regulated. With this uncertainty in mind, I decided that the best way to engage with these questions was to dive right into the heart of the discussions. So here I was, sitting in my newest suit purchased for the formal setting, with my digital notepad and ears and eyes wide open among some of Europe's crypto-asset business representatives and EU policymakers.

I was swamped with information. We had only just closed the first session to go to lunch, but my head was spinning. What an amazing feeling this was. No one had answers to what this new emerging technology would mean for the world of finance and more specifically whether crypto-assets would redefine our current understanding of money and the way payments are regulated. My notepad was completely packed with words I understood, and didn't understand, with references to material I had to investigate, and with plenty of quotes that represented the frustration from within the industry and the complexity of this technological phenomenon for regulators. I had only just reached out for the salad fork at the lunch buffet when I was approached by another member who was curious to converse. The informal chat was delightful. He shared his views on some technical matters and— more memorably— on his appreciation of being part of an industry group with highly professional topic experts who understood the technology and put the effort required “to educate the lawmakers" as he said. After the refreshing lunch, the meeting continued to discuss industry action points. It was clear that the working group had already done some footwork across topics. In that sense, the work of the industry assisted policymakers in developing an understanding of the technical operations that made crypto-asset transactions possible. The matters to be explored by the working group were, however, not only related to providing technical know-how, but also to influence which direction policymaking would take.

I left the meeting that February afternoon with the epiphany that my desk work and sporadic interviews with experts could only take my research so far. What was of greater value was to understand how the emerging industry, offering crypto-asset services, engaged with policymakers

in the early stages of policymaking. The complexity and global nature of crypto-assets entangled with the complexity and decentralized structure of the European regulatory landscape made the challenges of defining, classifying and strategizing very interesting as regulators embarked on the journey to make sense of the technology in light of their current knowledge, practices, and situatedness within existing regulatory frameworks.

… I woke up with my pen still in my hand, but with my neck twisted as my body tried to find support against the flight window. We had landed in Copenhagen. The flight had felt like the five-minute walk from the department of Digitalization on Howitzvej to Café Svejk. What a day. What interesting debates. I found myself already embedded in the experience and looked forward to the opportunity to understand the development of policy from the perspective of actors representing the emergent field of crypto-assets.

Abstract

The emergence of Bitcoin in 2009 sparked a revolution in the realm of crypto-assets, leading to the creation of a variety of novel innovations within financial services. Today, crypto-assets have collectively reached a market capitalization exceeding $2 trillion. Alongside technological advancements, interpretations of crypto-assets vary widely, ranging from considering them as money and payment systems to disruptive forces challenging traditional financial and regulatory frameworks. The regulatory landscape surrounding crypto-assets remains uncertain, prompting debates on the effectiveness of existing regulations in light of digitalization. Policy debates occur on national and supranational levels, where the emerging field of crypto-assets, offering a variety of novel financial services, also engage in policy work to address the increasing regulatory uncertainty arising across Europe. While the 'Markets-in-Crypto-Assets' (MiCA) regulation highlights Europe's response to the developments of crypto-assets, understanding the work that went into the policymaking process remains unexplored.

By integrating institutional work theory with an interdisciplinary interactive framing perspective, this case study examines how institutional actors construct meaning and shape policymaking surrounding crypto-assets. Through empirical analysis of an EU working group, this dissertation unfolds a process of institutional meaning making that spans three distinct periods: divergence, intensification, and stabilization. The analysis reveals how institutional actors engage in frame negotiations, developing and shifting frames due to interpretive shifts and environmental triggers. Six frames and two frame shifts are identified, reflecting the evolution of framing within the policymaking context. Moreover, the research reveals four framing mechanisms employed by the working group in their efforts to shape and influence policymaking outcomes.

The findings of this research contribute to theory and practice by unravelling the complex search for policy action concerning emerging disruptive digital innovations. The main theoretical contribution to the Information Systems (IS) research domain on crypto-assets is a process model that integrates the evolution of framing, technological advancements, and the micro-mobilizing actions of institutional actors in shaping institutions and technological trajectories. The model illustrates the origin and emergence of frames, their evolution due to frame shifts, and their persistence or dissolution over time and across different periods of institutional meaning and decision-making. In addition, the findings contribute to theoretical advancements in institutional work theory and framing processes, providing insights into the negotiation strategies of institutional actors.

Furthermore, this research extends beyond theoretical contributions to offer practical insights into the implications of policy on crypto-asset developments. Specifically, the acceleration of policymaking observed underscores the challenges posed by regulatory responses to technological innovation and the expertise asymmetry of policymakers. Additionally, the diversification, innovation, and bifurcation of the payment landscape and future considerations of the design of digital monetary strategies contribute to further discussions of the regulation of crypto-assets in the EU.

Dansk Resumé

Siden den første Bitcoin-transaktion i 2009 har vi oplevet en revolution inden for kryptoaktiver, hvilket er ført til en række nye innovationer inden for finansielle tjenester. I dag har det samlede marked for kryptoaktiver nået en markedsværdi på over $2 billioner. I takt med teknologiske fremskridt varierer fortolkning og forståelse af kryptoaktiver bredt - lige fra at betragte dem som penge og betalingssystemer, eller som destruktive kræfter, der udfordrer de mere traditionelle finansielle og regulerende rammer. Reguleringen af kryptoaktiver udgør et usikkert område og udløser debatter om effektiviteten af eksisterende regler og love set i lyset af den øgede digitalisering. Debatterne foregår på nationalt og supranationalt niveau, hvor også industrien bag kryptoaktive tjenester engagerer sig i det politiske arbejde for at imødegå den stigende reguleringsusikkerhed, der er opstået i hele Europa. Mens 'Markets-in-Crypto-Assets' (MiCA) reguleringen fremhæver Europas reaktion på udviklingen af kryptoaktiver, forbliver forståelsen af det politiske arbejde uudforsket.

Ved at integrere *institutional work* teori med et tværfagligt *interactive framing* perspektiv, undersøger dette studie, hvordan institutionelle aktører skaber forståelse af, og medvirker til politiske processer omkring kryptoaktiver. Gennem empirisk analyse af en EU-arbejdsgruppe udfolder denne afhandling en proces over den institutionelle forståelse, der strækker sig over de tre perioder: *divergence, intensification, and stabilization*. Analysen dækker, hvordan institutionelle aktører engagerer sig i forhandlinger, udvikler og ændrer forståelse på grund af nye fortolkninger og nye teknologiske udviklinger. Resultaterne identificerer seks *frames* og to *frame shifts*, der afspejler udviklingen af forståelsen af kryptoaktiver i en politisk sammenhæng. Derudover fremhæver forskningen fire *framing mechanisms*, som arbejdsgruppen anvender i deres bestræbelser på at forme og påvirke det politiske arbejde.

Resultaterne af denne forskning bidrager til teori og praksis ved at udfolde den komplekse søgen efter politisk handling i forbindelse med nye digitale innovationer. Det primære teoretiske bidrag til forskningsdomænet Information Systems (IS) om kryptoaktiver er en procesmodel, der integrerer udviklingen af *frames*, teknologiske fremskridt og de mikro-mobiliserende handlinger fra institutionelle aktører i udformningen af institutioner og teknologiske muligheder. Modellen illustrerer oprindelsen og konstruktionen af *frames*, deres udvikling på grund af ændring i forståelsesmønstre og deres holdbarhed eller opløsning over tid, på tværs af forskellige perioder. Derudover bidrager resultaterne til teoretisk udvikling inden for *institutional work* og *framing processes* og giver indblik i de institutionelle aktørers forhandlingsstrategier.

Desuden giver denne forskning indsigter i implikationerne af det politiske arbejde omkring reguleringen. Især understreger accelerationen af politikudformning de udfordringer, der opstår ved udformningen af regulering på baggrund af teknologisk innovation og ekspertiseasymmetrien hos politiske beslutningstagere. Derudover bidrager resultaterne og implikationerne af reguleringen af kryptoaktiver i EU til en debat om diversificeringen, innovationen og opdelingen af betalingsmarkedet, samt fremtidige overvejelser om design af digitale monetære strategier.

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

List of Abbreviations

SCOT: Social Construction of Technology

TFR: Technology Frame Research

P-O.W: Proof-of-Work

P-O-S: Proof-of-Stake

MiCA: Markets-in-Crypto-Assets

DLT: Distributed Ledger Technologies

ICO: Initial Coin Offering (Crypto-Assets)

NFT: Non-Fungible Tokens

ART: Asset Reference Tokens

EMT: Electronic Money Tokens

EMD2: Electronic Money Directive 2

PSD2: Payments Service Directive 2

MiFID: Market in Financial Instruments Directive

GDPR: General Data Protection Regulation

AMLD: Anti-Money Laundering Directive

WG: Working Group

DG: Directorates-General

PM: Policymaker

WGm: Working group member

WGo: Working group organizer

NSA: National Supervisory Authority

MS: Member State

ESA: European Supervisory Authority

ESMA: European Securities and Market Authority

EBA: European Banking Authority

FATF: Financial Action Task Force

FSB: Financial Stability Board

CPMI: Committee on Payments and Market Infrastructure

ECB: European Central Bank

ECON: European Parliament Committee on Economic and Monetary Affairs

OIR: Own-initiative Report

CHAPTER 1. INTRODUCTION

Since the emergence of Bitcoin in 2009, the world has witnessed a remarkable evolution in the realm of crypto-assets, encompassing not only digital currencies but also a myriad of tokens, decentralized finance (DeFi) protocols, smart contract platforms, and blockchain-based innovations. By enabling peer-to-peer value exchange through cryptographic means (Nakamoto, 2008), the Bitcoin network offered a technical alternative to traditional means of value transfer. Alongside the means to transfer value digitally outside the merits of existing intermediated transaction networks, a native digital asset (bitcoin) operates within the Bitcoin network. The combination of a digital mean and digital medium of value transfer reflect the novelty of this innovation that today reaches a market capitalization of $1,110.32 billion US dollars[1]. Since the invention of the Bitcoin network, many other crypto-asset innovations have emerged including Litecoin in 2011, which attempted to speed up transactions (Lee, 2014) and Ethereum which created a decentralized application layer of smart contracts (Buterin, 2014). Today, the total market capitalization of crypto-assets reaches a little above 2 trillion[2] reflecting the emergence and formation of a new field.

Beyond the technological underpinnings of the crypto-asset phenomenon (the emergence of digital assets using cryptographic techniques to secure value transfer; hereafter referred to as crypto-assets), the meanings attributed to the innovation have undergone a dynamic evolution, reflecting shifting attitudes in the analysis of societal impact (Carstens, 2019; Chiu & Koeppl, 2017; Egli & Hirter, 2018) and projected as an ideology (Dodd, 2015; Feuer, 2013) opening the discussion of a new economic paradigm. With the introduction of new digital infrastructures (information systems) and new types of digital assets (artifacts), crypto-assets have been conceptualized within the financial world as money (Ammous, 2018; Söderberg, 2018), payments (Ali & Narula, 2020; Papadopoulos, 2015), and envisaged to disrupt the financial service industry and monetary governance frameworks (Anderson, 1997; Carstens, 2019; Rose, 2015). Scholars have even extended their concerns to claim that behind crypto-assets lies a movement of monetary utopianism (Dodd, 2015). These claimed disruptive elements alongside the rapid growth of the industry started to raise questions about regulatory oversight, specifically the significance and implications for notions of money and payment systems (Adrian & Mancini Griffoli, 2019; Carstens, 2019; Houben & Snyers, 2018).

While scholars, policymakers, and government officials responded to this dynamic evolution, a new field of crypto-asset service providers emerged and matured in parallel. Due to the lack of regulation, self-regulation had increased among many providers (Massad, 2019). In general, crypto-assets were debated as a potential so-called *regulation paradox* in which it was unclear whether any level of regulation would enhance consumer and investor protection or constrain innovation (Zhang et al., 2019). The path towards regulatory legitimacy (for the field) and regulatory oversight (for actors from supervisory, monetary and financial institutions) did not seem straightforward. The uncertainty arising around proper policy development on crypto-assets

[1] As of February 27th, 10 a.m. CET, Coinmarketcap.com estimated Bitcoin market cap of $1,110.32 billion US dollars.
[2] As of February 27th, 10 a.m. CET, Coinmarketcap.com estimated crypto-asset market cap of $2.16 trillion US dollars.

forced policymakers, and other institutional actors engaging in the policy process, to navigate and zig-zag between the new digital economy and traditional finance to grapple with the novelty of this innovation. Within this process, the challenge arises on how we should make sense of different aspects of crypto-assets, how we should define these new concepts in relation to existing financial service regulation, and whether they need to be regulated and, if so, how (Söderberg, 2018). In making sense of what this novel technology is, its functionality, and why it is increasingly gaining public and industrial acceptance, actors from the institutional environment (including policymakers, supervisory and monetary authorities) engage in discussions to uncover the multifaceted aspects of the potential impact of crypto-assets on society. The process takes place through various channels and processes where actors interpret, evaluate, and assign meaning to the novel technology within their institutional context.

This dissertation argues that the exploration of technology sensemaking, both empirically and theoretically, within the dynamic interplay between the blending of new and old industries (Davis & Marquis, 2005), remains inadequately addressed. This scholarly gap is unsurprising, given the intricate nature of methodological approaches required to navigate the multifaceted processes of meaning making surrounding emerging technology, which unfold as diverse, temporal, and across geographical boundaries, in social contexts. Moreover, capturing negotiation strategies that emerge discursively through micro-mobilizing actions, rather than from a top-down logics perspective (Thornton & Ocasio, 2008), present significant challenges both empirically and methodologically.

In examining the institutional dynamics of policymaking regarding crypto-assets in the European Union, this dissertation tackles the theoretical, empirical and methodological challenges associated with investigating institutional meaning and decision making. It does so by integrating the theory of institutional work with an interdisciplinary interactive framing perspective, drawing from concepts developed in information systems (IS), policy research, and social movement studies. By employing the interactive framing perspective, we can gain a better understanding of the intricate interplay of social actors, discourses, and power dynamics shaping policymaking processes on emerging technology. In addition, the interdisciplinary lens allows for scholars to embrace conceptual advancements across various research streams when studying complex socio-technical phenomena. It facilitates an exploration of the underlying policymaking process rather than solely focusing on the outcomes (Edelman & Suchman, 1997; Kokshagina et al., 2023), offering a deeper comprehension of the evolving institutional dynamics in policymaking on crypto-assets.

In light of the above shortcomings, this dissertation engages in an empirical study of the institutional work engaged in by the emerging field of crypto-assets represented through an official EU working group to respond to the following two research questions:

RQ1: How does institutional meaning making about crypto-assets evolve during the policymaking period in the EU?

RQ2: What framing mechanisms did institutional actors employ in the policymaking process to shape and influence policymaking outcomes on crypto-assets?

According to Edelman and Suchman (1997), scholars must engage with the *process* of law to understand the relationship between meaning making and legal definitions. In addition, Novak (2019) states how "the significance of policy action for technological acceptability and usage is that, with respect to blockchain, it territorially affects the opportunity set of viable blockchain-enabled activities within, and amongst, political jurisdictions" (Novak, 2019, p. 166). On the backdrop of these two observations, this research reflects an engaged scholarship agenda where I, the author and researcher, have, as a representative of my host organization, engaged with the process of public policymaking through three years of participation in an EU working group. During fieldwork, I was faced with multiple choices of research direction and had to constantly evaluate which discussions and topics were of interest to the study. As a guiding frame, the working group acted as the unit of observation to study institutional work on crypto-asset policymaking. The participatory observations resulted in the collection of rich empirical data describing the meaning making processes and negotiations taking place about crypto-assets among different institutional actors. In that sense, this study is about how social actors make sense of crypto-assets and act upon these interpretations. It explores the policymaking process that led to a regulation of crypto-assets – the Markets-in-Crypto-Assets (MiCA) Regulation.

The conceptual framework of the study draws inspiration from theory across IS, policy and social movement research to understand better the cognitive elements of meaning construction (Surel, 2000) when actors engage in institutional change processes. As previously outlined, the objective of this study attends to the institutional work, more specifically the framing activities, occurring in and around the interactions between the working group and policymakers from the EU. The unit of analysis of the case study is the organizational field of the crypto-asset sector and its immediate European institutional environment.

This dissertation employs an analytical approach inspired by a call to investigate framing as a dynamic interpretive process (Davidson, 2006), recognizing framing as an alternative tool for understanding institutional meaning making (Purdy et al., 2019). Motivated by the original social construction of technology (SCOT) model by Pinch and Bijker (1984), the research adopts the interactive framing approach (Bijker, 1995; Davidson, 2006; Van Hulst & Yanow, 2014) as a theoretical perspective to examine the negotiation of frames, with a specific focus on framing mechanisms (Campbell, 2004, 2005). Davidson (2006) and Walsh (1995) both suggest that by examining the dynamic interpretive process over time, research can turn to theoretical contributions relying more on framing processes aside from static frames, which only capture congruence and incongruence in those "point-in-time snapshots of frames" (Davidson, 2006, p. 30). In that way, by engaging in the policymaking process over time, scholars can gain insights into the negotiations of meaning and the "institutional tussles" (Kokshagina et al., 2023, p. 160) that developed among and between institutional actors. This emphasis lies in exploring the dynamic construction and evolution of meanings associated with technology within the context of institutional work.

In addition to the empirical and theoretical motivations outlined above, the analytical approach also seeks to further the development of the theoretical concept of framing mechanisms (Butler & Hackney, 2015; Butler & Hackney, 2021; Butler et al., 2023; Campbell, 2004; Campbell, 2005)

to gain insight into the ways institutional actors, and more specifically in this case, a new field (the crypto-asset sector) strategically frame their interest against the existing and established financial service regulatory framework.

The findings of this dissertation reveal that institutional meaning and decision making on crypto-assets unfolds over three periods – through divergence, intensification, and stabilization. The research empirically unfolds how institutional actors engage in frame negotiations that develop and shift due to both interpretive shifts of actors as well as triggers from the environment. More specifically, the analysis led to the identification of six frames and two frame shifts reflecting the evolution of framing among the working group and actors from its immediate institutional environment. In unfolding the evolution of framing, this dissertation attends to the role of agency in meaning construction (Campbell, 2004; Campbell, 2005; Kokshagina et al., 2023; Purdy et al., 2019) and shows that the working group employ, through effective issue-framing techniques (Yanovitzky & Weber, 2020), a combination of four framing mechanisms in their efforts to achieve frame alignment and ultimately influence the policymaking process – conceptualized as affordance attribution, mimicry, value-laden information, and appeal to emotion fallacy.

Developed through a longitudinal analysis of the frame negotiation process, this dissertation contributes to theory and practice by unravelling the complex search for policy action concerning emerging disruptive digital innovations. This research makes available the often invisible decision-making processes that lead to policy action concerning novel technology. The main theoretical contribution to the IS research domain on crypto-assets is a process model (figure 10) that ties together the evolution of framing, the advancements of technology and the micro-mobilizing actions of institutional actors in shaping institutions and technology trajectory. Specifically, the model presents how frames originate, emerge due to frame shifts, persist and/or dissipate over time and across periods of institutional meaning and decision making. By synthesizing streams of literature on frame and framing theory as a lens to further our understanding of the way actions influence institutional arrangements, this research extends the theoretical boundaries of institutional work theory (Currie, 2009; Lawrence & Suddaby, 2006; Zilber, 2007). It does so by focusing on framing as a strategic and underlying form of institutional work. Furthermore, the integration of the interactive framing approach and theory of institutional work paves the way for future scholarship to explore negotiation strategies, political agendas, and shifts in policymaking processes as a response to emerging technology and digitalization.

In addition to the theoretical contributions, this dissertation also offers practical contributions that hold significant potential to inform about future implications for crypto-asset developments and service provisions. Specifically, the acceleration of policymaking observed in this research is discussed in relation to the *race* and *pacing* metaphors (Bennett Moses, 2011) concerning regulatory responses to technology innovation and expertise asymmetry of policymakers (Butler et al., 2023). In addition, the diversification, innovation, and bifurcation of the payment landscape as well as future considerations of designing digital monetary strategies contribute to further discussions and implications of the regulation of crypto-assets in the EU.

Following this introduction, chapter 2 first explores fundamental concepts of crypto-assets, including technological intricacies, transformative potentials, and affordances. Secondly, it positions the research within literature on digital assets, emphasizing the socio-political dimensions of crypto-assets and their potential to disrupt traditional monetary orders, leading to the third section focusing on the public policy process introducing the European regulation on crypto-assets (MiCA).

Chapter 3 outlines literature that situates the theoretical position of this dissertation at the intersection of institutional theory, more specifically theory of institutional work, and of frame analysis, and presents these theories in the context of policymaking. The interactive framing approach is presented as the lens to guide the analysis that draws on conceptual features of framing mechanisms. In concluding the theoretical foundations of this research, a conceptual framework is presented to guide the exploration of institutional meaning and decision making in policy-technology contexts.

Chapter 4 presents the methodology of this dissertation, including the case study design and methodological considerations employed throughout the research. In addition, chapter 4 also provides an account of the approach to data throughout the research. The data collection strategy that includes field observations, interviews, and secondary data sources is outlined as well as the data analysis strategy.

Chapter 5 unfolds the findings. The findings chapter dedicates space and time to three parts: setting the stage, the evolution of framing, and unfolding framing mechanisms. Each part contributes to the understanding of the frame negotiation process unfolding around crypto-assets throughout the policymaking process in the EU.

Chapter 6 discusses the implications of the findings. The main contribution of this dissertation is the process model presented in figure 10. Moreover, the contributions to theory are discussed in addition to a discussion around the implications of the findings to practice.

Chapter 7 concludes this dissertation by summarizing the framing journey of crypto-assets in the EU policymaking context including a discussion of the limitations, challenges, as well as offering avenues for future research.

Figures, tables, and appendices play a crucial role in supporting the comprehension of this research. They provide visual representations, data summaries, and supplementary materials with the aim to enhance the clarity and depth of the examinations.

CHAPTER 2. BACKGROUND

The background chapter of this study serves to establish a comprehensive foundation by synthesizing the technological, institutional, and socio-political dimensions essential for understanding the institutional work surrounding crypto-asset policymaking in the EU. While prior research has predominantly explored the economic and technological aspects of crypto-assets, such as their role in central banking (Carstens, 2019; Söderberg, 2018), IT governance (Beck et al., 2017) or form of smart money (Avital et al., 2017), this dissertation expands the discourse to encompass the broader socio-political implications of crypto-assets. At the nexus of financial innovation and public policy, crypto-assets challenge conventional notions of money and payments (Söderberg, 2018), calling for a deeper exploration of their transformative capabilities and the challenges they pose.

The first section of this chapter delves into the fundamental concepts underpinning crypto-assets, including technological intricacies, transformative potentials while also addressing the socio-political dynamics they introduce. The second section provides an account of the socio-political dimensions to the emergence and disruptiveness of crypto-assets and conceptualizes money as an information artifact (digital artifact). This section highlights the transformative nature of crypto-assets as digital artifacts, challenging existing traditional monetary governance structures. This view transitions into the third section of this chapter, which provides an overview of the public policy process, with a specific focus on the European regulatory context and its institutional dynamics, as well as introducing the proposed regulation by the European Commission on crypto-assets (MiCA).

2.1 The Concept of Crypto-Assets

In 2008, Bitcoin marked the dawn of crypto-assets and introduced a novel monetary instrument and payment system by addressing the byzanite generals problem (Driscoll et al., 2004; Lamport et al., 2019; Reischuk, 1985; cited in Chohan, 2021) and the double-spending problem through technological innovations (Nakamoto, 2008). The byzanite generals problem refers to the issue related to reaching consensus among decentralized parties (Lamport et al., 2019). The double-spending problem refers to the risk of an asset being spent more than once. Rooted in earlier advancements like cryptographic cash (Chaum, 1983), proof-of-work (Back, 2002), and data structures resembling today's blockchain architecture (Haber & Stornetta, 1997), Bitcoin combines these elements to establish a decentralized information system and a native digital information artifact, bitcoin. The establishment of Bitcoin (information system) includes "ensuring pseudo-anonymity, independence from central authority, and double spending attack protection" (Lansky, 2018, p. 20). Following Bitcoin, many other crypto-asset information systems have emerged including Litecoin in 2011, attempting to speed up transactions (Lee, 2014) or Ethereum, creating a decentralized application layer of smart contracts (Buterin, 2014). Crypto-asset information systems span a variety of technical solutions, each supporting different business models proposed by the innovators. An overall social/ideological aim of many systems has been to decentralize the financial system by allowing payments to occur peer-to-peer without the need for intermediary institutions (Nakamoto, 2008).

2.1.1 The Dynamic Features of Crypto-Assets

Crypto-assets can be thought of as both digital payment systems (information systems) and digital monetary assets (information artifacts) that carry new affordances interlinking the financial transaction with its social context (Elsden et al., 2019; Ferreira & Perry, 2018). Due to the nature of the distributed databases, crypto-asset transactions carry digital traces that have been theorized to improve trading and record-keeping, thus simplifying payments (Ross et al., 2019). In other words, crypto-assets are digital information artifacts that are created, stored, and managed by particular information systems. The concept of crypto-assets as digital information artifacts has in the IS context been referred to as smart money through "the appropriation of money and its use" transacted on blockchain platforms (Avital et al., 2017, p. 105). Yet, in general, the innovation of crypto-assets has given rise to a range of diverse business models, ranging from financial assets such as bitcoin, ether and tether that mirror the functionality of money (medium of exchange, store of value, and unit of account), to information systems such as Ethereum enabling decentralized finance (DeFi) platforms for lending, borrowing and trading without traditional intermediaries.

Behind these innovations we find the blockchain technology, a decentralized peer-to-peer distributed ledger (also referred to more broadly as DLT) facilitating these cryptographically secured transactions among participants. This technology provides foundational infrastructure for crypto-asset artifacts through the means to create, store and manage value and information flows (Beck et al., 2017; Rohr & Wright, 2017). The features, mechanisms of transfer and value creation, however, varies across blockchains. Blockchains link together blocks of transactions in a chronological and immutable chain in which participants can access its complete history (Giancaspro, 2017; Iansiti & Lakhani, 2017; Ølnes et al., 2017). This transparency ensures transaction integrity and the synchronization of data among participants enabling immediate peer-to-peer transfers (Ølnes et al., 2017). While some blockchains, like Bitcoin (BTC) and Ethereum (ETH), integrate native crypto-assets as a medium of cryptographically secured exchange into their core protocol, other blockchains operate without native assets. The way native crypto-assets serve as mediums of exchange is through a process incentivized by participants investing computing power to mine or validate transactions (Ying et al., 2018). The validation process of new transactions occurs through consensus mechanisms (e.g., proof-of-work [P-o-W] or proof-of-stake [P-o-S]) where the functioning and maintenance of the network is distributed, rewarding users with a transaction fee. Blockchains that operate (or can operate) without native assets, such as Ripple or Hyperledger Fabric, use different mechanisms for the secured exchange of a variety of crypto-assets (e.g., Byzantine fault tolerance [BFT]) (Christidis & Devetsikiotis, 2016; Spohrer & Risius, 2022). Often, the ledgers operating without a native asset are permissioned blockchains, which means that access to the network and the participatory aspects are limited to a defined group of people (Christidis & Devetsikiotis, 2016). For example, some permissioned ledgers are designed with the specific focus on catering to the needs of businesses and enterprises whereas permissionless blockchains on the other hand, often allows anyone to join the network.

In addition to native crypto-assets that are integral parts of the blockchain's operation, other non-native crypto-assets, also referred to as application assets [tokens] (Rohr & Wright, 2017), are

created through smart contracts and can take on a variety of forms, embedding additional information together with the transaction (Mentzer & Gough, 2018). Smart contracts are "self-executing scripts that reside on the blockchain that allow for the automation of multi-step processes" (Christidis & Devetsikiotis, 2016, p. 2292). Smart contracts are a vital part of the disruption to finance as they impose a radical change to the interactions among transaction parties. While the Bitcoin network does not support the creation of smart contracts through its non-Turing complete language, Ethereum is the first crypto-asset network that integrates an application layer. This innovation has enabled a wide spectrum of tradeable assets in different markets, leading to the emergence of many new business models (Glaser, 2017). Ethereum allows for the development of smart contracts through the Turing complete Ethereum Virtual Machine (EVM) using the Solidity programming language (Spohrer & Risius, 2022). While the native crypto-asset of Ethereum (ether) can be held and exchanged, the Ethereum blockchain has developed into a platform enabling the creation, storage, and management of a myriad of crypto-assets on the application layer. Many technical standards have been developed on the platform, where e.g., the ERC-20 is a technical standard enabling the creation of fungible tokens on the Ethereum blockchain. Many of today's known crypto-assets, which value peg to fiat currencies (stablecoins), are ERC-20 tokens, such as tether (USDT) or USD coin (USDC). These smart contract applications are not native crypto-assets, yet they gain the benefits of transacting on the Ethereum blockchain. All in all, crypto-assets, whether native or non-native have become ideal value containers due to their attributes (Oliveira et al., 2018). Specific features of blockchains use different models to capture and transfer real-world value, representing it in the digital realm.

Crypto-assets can be stored and distributed either on the blockchain or off-chain. This feature and difference among blockchains has been conceptualized as a blockchain's modularity (Spohrer & Risius, 2022). This distinction becomes crucial for payment services, where decisions on storing transactional data on or off-chain impact not only the technical operations of efficient payment system (the time in which a transaction can be considered final), but also the type of transactional data stored in a blockchain. One innovation that developed in this area, as a response to Bitcoin's long transaction delays, is the *lightning network* which offers an off-chain payment solution (Back et al., 2014). In addition, modular blockchains offer new arrays of linking the digital world with real-world value (Glaser, 2017), fueling socio-economic changes. In that sense, both different mechanisms of transfer and different mechanisms of link-ability to off-chain data highlight the various configurations of crypto-asset information systems. All in all, blockchains differ in technological features and have been argued to predispose the types of business models that they support (Iansiti & Lakhani, 2017). However, research on the usefulness of blockchain-enabled business models is limited leading to a gap in the understanding of crypto-asset affordances (Butler et al., 2023; Risius & Spohrer, 2017; Spohrer & Risius, 2022; Ølnes et al., 2017). One reason for this gap is the multifaceted aspects of the technology that span across industries and knowledge domains.

2.1.2 Interpreting Crypto-Asset Affordances

As described earlier, features vary across specific blockchains (Beck et al., 2017; Rohr & Wright, 2017), which as a result affords either the individual user, collective communities, organizations,

or even sovereign states different possibilities when interacting with the technology. In this research, an affordance is understood as the technological possibilities for action (Gibson, 1977; Markus & Silver, 2008; Spohrer & Risius, 2022; Volkoff & Strong, 2013). Known from literature, technology affordances can both describe functional and social possibilities (Pyysiäinen, 2021; Spohrer & Risius, 2022). Certain possibilities for action are afforded by the underlying technological architecture of any specific crypto-asset information systems. In addition, the possibilities for action can be perceived both as opportunities and/or as risks, also referred to as positive and negative affordances. Scholars across disciplines have started to engage in these opportunity/risk conversations (Armani Dehghani et al., 2023; Butler et al., 2023; Lichti & Tumasjan, 2023; Lotti, 2019; Spohrer & Risius, 2022). For example, some researchers account for the integration of application layers, enabling the issuance of smart contracts as a "new tool for organizational and economic autonomy" (Lotti, 2019, p. 288), enabling:

The financialization of everything as in-built in the current internet stack in which networked (social, cultural and economic) value is generated through the freely available communicative capabilities of the protocol layer (such as TCP/IP, HTTP, SMTP7) and captured and re-aggregated as tradable information at the application layer through the "programmability" of platforms. (Helmond , 2015; cited in Lotti, 2019, p. 292)

Such analysis highlights both the functional and social aspects of technology affordances of blockchain technology, providing a dual-layered impact on economic and societal dynamics.

Other literature accounts for the functional affordances of crypto-assets perceived by the service providers. One study highlights validity, analytical, automation, decentralization and generativity as crypto-asset affordances (Spohrer & Risius, 2022). From a negative affordance perspective, crypto-assets are perceived in terms of volatility, information privacy risk, anonymity, value benefits and financial risk tolerance (Amarni Dehghani et al., 2023). While the immutability of transaction records, cryptographic security, and elimination of intermediaries for some actors contribute to increased efficiency and reduced transaction costs, for others, these affordances contribute to increased concerns regarding privacy, handling of data and volatility risk. For example, the volatility risk is evidenced by recent statistics: in 2017, ICOs (initial coin offers - the issuance of smart contracts) raised an equivalent of 5.6$ billion, yet already in early 2018 the amount of projects facing bankruptcy were close to 50% (Lotti, 2019).

In addition to functional affordances, on the social front, crypto-assets, seen from a positive affordance perspective, introduce novel paradigms in financial inclusion, empowering individuals with limited access to traditional banking systems (Beck et al., 2018). They also facilitate cross-border transactions, potentially reducing disparities in global financial accessibility (Lichti & Tumasjan, 2023). Moreover, the rise of decentralized finance (DeFi) platforms, enabled by crypto-asset information systems, challenges traditional financial intermediaries, fostering a more inclusive and participatory financial ecosystem (Lichti & Tumasjan, 2023). From a negative social affordance perspective, crypto-assets have been perceived to increase consumer and investor risk and fostering a shadow economy where it becomes difficult to enforce legal and ethical standards (Armani Dehghani et al., 2023). From a public sector view, the blockchain technology has been

analyzed to possible affect and enable macro-societal shifts towards digitalization and bring to the forefront of discussion new political and security risks (Jonsson, 2018; Paech et al., 2019).

In summary, while various crypto-assets share certain technical features, perceptions, and interpretations of the functional and social aspects of their affordances differ among actors in society. We see how certain technical features of some blockchains lead to enhanced usability by service providers promoting certain business models, whereas technical features also enable certain possibilities for action that are negatively perceived by actors. This interpretive perspective on crypto-asset affordances sheds light on the implications for making sense of the novel technology. Evidently, the action possibilities of crypto-assets undergo a framing process. Both the analysis of affordances undergoes a selection process, but also the interpretation of risks or opportunities can be found in framing contests among social actors. These aspects are important to understand from a regulatory perspective (Butler et al., 2023; Scarantino, 2003). The critical challenge for social actors, here including policymakers, is to strike a balance between these perceived opportunities and risks of crypto-asset information systems (Butler et al., 2023).

2.2 A Socio-Political Perspective on Novel Monetary Innovations

From decentralized currencies to decentralized applications, Bitcoin and Ethereum are examples of the emergence of crypto-asset information systems that make possible the extension of digital scarcity to “anything that can currently be represented by a computer” (Wood, 2018, p. 2). In financial markets, these innovations became evident through the application of monetary functionality to digital assets either native to certain blockchains (bitcoin or ether) or as application tokens on certain blockchain platforms (tether or USDC). Such innovation is described in literature as a difference in kind where “crypto economic systems and their native tokens (as a new asset class endowed with entirely new affordances) can introduce a difference in kind (i.e. formally and structurally) regarding the ways in which value generation and distribution are expressed and accounted for in digital environments” (Lotti, 2019, p. 307). Within financial markets, the introduction of a new kind of asset available through digital means, that holds the possibility to import the scarcity of money brings with it a challenge to the existing monetary order. As Brunnermeier et al. (2019) notes, “digitalization has revolutionized money and payment systems" (p. 2), where money is changing and the way payments are made is digitalizing faster than ever. New decentralized technological infrastructures are challenging existing centralized monetary and economic structures such as the operations and roles of central banks and commercial banks (Frausing & Avital, 2021). Having explored the concept of crypto-assets and gained understanding of crypto-assets as digital information artifacts and digital information systems, we now turn our attention to a more historic account of the transformative evolution of money into an information artifact operating across various information systems.

2.2.1 Money as an Information Artifact

The emergence of central banking in 1600s Europe transformed money from a physical artifact to a technology infrastructure relying on new institutional and technological structures (Desan, 2017; Ferguson, 2008). However, “modern standardized money did not arise on its own out of the marketplace. In fact, it is typically issued by a sovereign power or national government and serves

as the sole monetary standard within a specific geographic territory" (Carruthers, 2010, p. 59). Money became cashless with the development of intrabank and interbank transactions (Ferguson, 2008). Fiat bank money developed as settlement assets for large-value transactions (Quinn & Roberds, 2007) and I-owe-yous (IOUs) as private retail assets through early banking structures such as goldsmiths in the 17th century (Quinn, 1997). The two interrelated payment systems mark the beginning of the institutional arrangements known today as wholesale and retail payment systems. Since then, these systems have been built to support the fast and smooth functioning of payments, operating in a broad network of interdependent information systems.

These early accounts of monetary transformations form the foundations for different *species* of assets all conforming to the overarching concept of money. Money is materialized through many forms and purposes in an increasingly complex financial system. Innovations in settlement assets have evolved historically to represent the most superior form of money where the choice of asset depended on the financial standing of banks relative to others (Norman et al., 2011). More recent revolutionary technology structures have progressed, for example with the introduction of the electronic checking system and credit card networks in 1960s (Ferguson, 2008; Panurach, 1996; Swartz, 2020), and as a result creating virtual spheres of transaction dealings (Ferguson, 2008). For electronic transfers of value, centralized intermediaries such as private banks, national central banks and other financial institutions became responsible for processing transactions and circumventing the double-spending problem. Evidently, carrying out electronic payments require a myriad of steps, such as information messaging, acquiring, processing, clearing, and settling transactions (European Central Bank, 2021). In addition, the provision and maintenance of these electronic networks (information systems) require significant cost and physical infrastructure.

2.2.2 The Social Institution of Money

Taking a step back to understand types of monetary transformations, an understanding of the concept of monetary policy is necessary. Monetary policy describes the toolbox of instruments that can be used by a central bank to effectively uphold monetary order. In a historical comparison between the medieval and early America Desan (2017) explores how money production methods shape markets differently. Through the analysis, she locates how capitalism became institutionalized through the new money creation methods and new financial actors. Namely, the introduction of self-interest of commercial actors has resulted in powerful modern financial markets and in turn re-constructed the money artifact. In another study Desan (2005) turned her attention towards paper money in America. This aspect explores the considerations behind monetary supply and the legal design created to resolve contractionary supply tendencies. As a way to stimulate money circulation, legislatures *invented* interest, and in that way both the borrower and the lender stimulated circulation through obligations to pay back and liability to accept (Desan, 2016). This strategy marks the beginning of monetary policy as a way to govern, control, and affect money between both public and private actors in economies. The complexity of the system needed requirements and enforcements, which were undertaken by legislators and different state actors. Due to this, the development and maintenance of the monetary order became part of public policy matters.

Historically, sovereign states and governments have shown particular motivations regarding money creation and governance. For example, bank money was pioneered in 1690s England in times of war to motivate and pay soldiers (Desan, 2017), or recently the European Central Bank explored preserving publicly accessible digital currency through a digital Euro (European Central Bank, 2020). Communities may have similar motivation, however, historically have not had the capacity to uphold a monetary order (Desan, 2016; Dodd, 2014). To fully grasp the institutionalized forms of money currently present, Peter Praet, executive board member at the European Central Bank, explains the difference between inside and outside money. *Inside money* refers to IOUs, bank bills and bank deposits issued through commercial banking businesses, thus backed by private credit and o*utside money* is issued by the financial authority and is no one's liability (Praet, 2012). Both commercial banks and central banks are in that way highly integrated into the legal design of money, with dependencies to a national payment system and the supporting role of lenders of last resort (Desan, 2017). The dynamics of these two types of official money creates what Bhatia (2021) conceptualizes as layered money. Layered money envisages both hierarchy, interoperability, and differences of kinds as different actors cooperate in the monetary order. A layered monetary order naturally necessitates the need for intermediation, from both the perspective of convertibility among types of money (inside/outside) and also in light of exchange services where different institutionalized mechanisms have developed to shift risks to a third party (Geva, 1986).

This intermediation has for long been organized around institutions, mostly central banks and commercial banks, and their trust-facilitating mechanisms have and are supporting the construction of money and impersonal exchange (Bigoni et al., 2015) through governing the social and economic domain (Bodó, 2020). The relationship between modern money and payment systems rests on institutional arrangements. Legal convertibility ensures that a unit of currency is convertible into the current anchor of the monetary system (currently the anchor in most economies is government-issued fiat currency (Brunnermeier et al., 2019). This mechanism allows for substitutability among payment instruments because ultimately, the unit of account and store of value functions are linked to the government-issued fiat currency. In other words, many payment instruments today carry the medium of exchange function in isolation (Brunnermeier et al., 2019). As such, a variety of institutional mechanisms uphold the order and smooth functioning of money and payment system, yet they might also undergo transformations over time (Merton & Bodie, 2004).

2.2.3 The Legal Engineering of Money

From both a constitutional perspective and a social perspective, the exploration of money's capacities focus on the way societies engineer monetary designs to fulfil the *wanted* functionalities of money, which is often known as a unit of account, a medium of exchange, and a mode of payment (Desan, 2016; Swartz, 2020; Zuboff, 2019). As Desan describes:

Money in the Western world is a legal institution, a means of packaging value that depends on a set of opportunities and obligations defined by the polity. That process is an ongoing one, one that affects the way people relate to each other and to the larger community. In that sense, the process

of making money involves people both as individuals and as a collective. It serves both private and public purposes. Like any other mode of governance, it can be structured in ways democratic or dictatorial. For good or ill, it is designed by those using it. Likewise, it is susceptible to redesign that changes the way it circulates and the exchange it enables. (Desan, 2016, p. 21)

For example, the way money works as a payment is a practice that is institutionalized, legitimated, and reinforced through different strategies (Desan, 2016). In such way, money defines societal, organizational, and individual behavior and makes exchange easier. Dodd (2014) argues that money has been designed and organized politically and economically to reach certain goals. In his utopian view of money, the development of money and payment systems is discussed with focus on transformational characteristics as monetary schemes attempt to address fundamental problems of social inequality. The idea of non-government issued money is also not new. For example, in 1944 Edwin Riegel looked towards a relationship with money freed from government and big banks (Dodd, 2014). In that sense, forms of money will always in some sense or another attempt to answer specific social, ethical, and political objectives of contemporary society (Dodd, 2014). On these accounts, Dodd argues that social utopianism should in fact be viewed as central to the theory of money.

To claim that money is a governance strategy is not of insignificance to how we understand the coevolution of institutions and technological development. Money, as a governance strategy, signifies more than a mere medium of exchange; it encapsulates a mechanism through which societies organize, coordinate, and govern economic interactions. Institutions that encompass legal, economic and political structures, act as the governing apparatus that defines the rules and the norms within which money operates. Specific institutional arrangements govern the creation, use and oversight of money and payment systems. The existing financial market infrastructure (FMI) consist of various digital information systems, where "for instance, the financial system and the "real" economy depend critically upon FMIs such as payment, clearing and settlement systems in meeting payrolls, buying and selling goods, funding education, making capital investments and carrying out all other vital transactions" (European Central Bank, 2021, p. 146). The crucial operation, governance and supervision of these interconnected systems is referred to as "establishing the overall safety and efficiency of market economies" (European Central Bank, 2021, p. 146). Technological innovations, such as crypto-assets, can reshape how money is created, distributed and used, which influences existing governance mechanisms embedded in traditional economic systems. As a consequence, institutions may see these technological advancements necessitating institutional adaptations. In Europe, the discussions concerning possible institutional adaptations due to the emergence of crypto-assets, has come to show in two distinct ways. First, the exploration of institutional adaptations to the issuance of money, for example the Swedish E-krona (Söderberg, 2018) and the ECB's Digital Euro (ECB, 2020). Second, the exploration of institutional adaptations to regulatory measures of crypto-assets and the markets they enable, for example the MiCA regulation (European Commission, 2020).

2.2.4 The Regulation of E-money

One recent example of a policy process undertaken to govern an emerging technological phenomenon within financial markets is the regulation of electronic money (e-money). For e-money, regulatory approaches have differed across regions and countries, and thus the diverse regulatory outcomes concerning e-money exemplify how policy processes have resulted in the use of different digital information artifacts (types of e-money) that are also created, stored and managed differently across information systems (e-money payment systems) across markets. Most studies on the regulation of e-money are contextually localized and focus on country approaches to regulation: for example, in Malawi (Greenacre et al., 2014), Rwanda (Argent et al., 2013), Kenya (Breloff & Tarazi, 2010), United States (Ramasastry, 2008), or more regional approaches such as the BRICS countries (Shamraev, 2019) or the EU (Dehghan & Haghighi, 2015; Krueger, 2002). The studies show that across legal jurisdictions different regulatory strategies are adopted to target technological, social, and economic innovation in accordance with the monetary strategy of the country/region. In some jurisdictions, central bank institutions have been very involved in the process (EU), whereas in others, financial institutions such as banks have pushed back against the telecommunications industry trying to take a role in new mobile money business models (Maurer, 2012; Muthiora, 2015).

In general, the regulatory efforts toward e-money innovations have resulted in different markets for e-money service providers. In the EU, the number of people holding e-money accounts is still limited compared to, for example, Sub-Saharan Africa (21 million in EU vs. 548 million registered accounts in Sub-Saharan Africa[3]). As Kaminska (2015) noted, early regulatory support to e-money service providers in Kenya positively affected the roll-out of the service. However, in Denmark, the presence of non-banks is still limited, despite regulatory legitimization. As part of the socio-political governance strategy, legitimizing e-money as legal tender was also undertaken as a choice from some countries. For e-money, this has for example been the case of Uruguay (Cassoni & Ramada-Sarasola, 2012). In relation to crypto-assets, this strategy has also been discussed among central banks around the world where some are exploring the introduction of Central Bank Digital Currencies (ECB, 2020; U.S. Federal Reserve, 2022; PBC, 2021).

2.3 The Public Policy Process

With the rise of digital technologies (artificial intelligence, blockchain, quantum computing, internet of things) regulators around the world find themselves navigating uncharted territory. In general, the emergence of digital innovations bring forward challenges to policymakers and regulators, for example concerning algorithmic control on digital platforms (Kokshagina et al., 2023). Literature point to how "it is recognized increasingly that there is a need to identify and categorize IT artefacts on the regulatory radar across industry sectors and how they are perceived in terms of their positive (benefits, rewards) and negative affordances (hazards, downside risks, threats, vulnerabilities)" (Scarantino, 2003; cited in Butler et al., 2023, p. 94). Specifically, Novak (2019) notes how "the significance of policy action for technological acceptability and usage is

[3] State of the Industry Report on Mobile Money 2021: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/03/GSMA_State-of-the-Industry-Report-on-Mobile-Money-2021_Full-report.pdf

that, with respect to blockchain, it territorially affects the opportunity set of viable blockchain-enabled activities within, and amongst, political jurisdictions" (p. 166). In that sense, policy action and the outcomes hereof have major influences on the trajectory of technology development, and with respect to crypto-assets, the emerging economy. Yet, to engage in profound discussions concerning specific technologies, their opportunities and risks, a certain level of competence and knowledge is required among actors engaging in the policymaking process. Research has found that regulators and supervisory agencies, primarily adopt a reactive stance to address concerns regarding the development of technologies, speculating that there is possible expertise asymmetry in addition to information asymmetry among actors (Paech et al., 2019; Butler et al., 2019; cited in Butler et al., 2023). Also, a growing awareness regarding the need to endogenize the policymaking is spreading across research, where the complexity of the process is highlighted (Novak, 2019). These aspects provide an opportunity for IS scholars to delve into the bottom-up processes of institutional meaning making (Purdy et al., 2019) to understand how, actually, regulators make sense of digital innovations, as well as how these meanings translate into actions in the policy process. To start with, the first part of the following subsections provides a generic outline of the policymaking process with focus on the European Union (EU). The second part introduces the outcome of the policymaking process in the EU; the MiCA Regulation.

2.3.1 The Policymaking Process

In general, public policy can be represented by the working definition of the "purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern" (Anderson, 1997, p. 9; cited in Novak, 2019). One such course of action is policymaking. It is suggested policymaking is a process "that might evolve from policy problems perceived by community groups or key actors and thus any set of ideas, goals and attempts to search in practice for institutional arrangements – existing or new – for their realization" (Petridou et al., 2015; cited in Novak, 2019, p. 167). It is important to note that policymaking and lawmaking are two distinct processes that are used to shape the policies and laws of a society (Corbett et al., 2018; Richardson, 2006). Policymaking refers to the process of developing and implementing policies, which are broad guidelines or principles that guide decision-making and actions within a particular area or sphere of activity (Novak, 2019). Policymaking can involve a range of activities, including researching and gathering information, analyzing data and evidence, consulting with stakeholders and experts, and making recommendations for policy changes.

In Europe, policymaking is carried out by a range of actors at different levels of government and society (Heidbreder, 2015). At the European Union (EU) level, policymaking is the responsibility of the European Commission, which is the executive branch of the EU and is responsible for proposing new laws and policies. The Commission's proposals are then considered and potentially modified by the European Parliament, which is the directly elected legislative branch of the EU, and the Council of the European Union, which represents the governments of the member states. Policymaking is also carried out at the national level in the various countries across Europe (Heidbreder, 2015). In most European countries, policymaking is the responsibility of the national government, which is typically made up of agencies and departments that are responsible for different policy areas. In some cases, policymaking may also involve consultation and

collaboration with other stakeholders such as advocacy groups, private sector organizations, and local governments (Butler et al., 2023). Overall, policymaking in Europe is a complex and multi-faceted process that involves a range of actors at different levels of government and society. In fact, figures have shown that only one-fifth of all policy proposals from the Commission come from its own initiative, otherwise, the Commission mainly responds to pressures from other sources (Corbett et al., 2018).

Lawmaking, on the other hand, refers to the process of creating and enacting laws, which are formal rules or regulations that are enforceable by the union. Lawmaking typically involves a more formal and structured process and is typically the domain of legislative bodies such as Council and Parliament (Corbett et al., 2018). In Europe, lawmaking involves the proposal of a draft by the European Commission, then continues into debates and discussions among lawmakers and, more often than not, a reintroduction of one or multiple new proposals before a vote takes place to determine whether the proposal should be passed into law. Overall, policymaking and lawmaking are two distinct processes that are used to shape the policies and laws of a society, but they differ in terms of their scope, actors, and processes. Legislation refers to the laws that are enacted as a result of the lawmaking process. Legislation can take the form of directives or regulations (Corbett et al., 2018).

Networking plays a crucial role in shaping public policy, serving as a dynamic platform for diverse actors to exchange resources, essential for policy change (Fawcett & Daugbjerg, 2012). John Kingdon's (1984) work underscores the significance of leveraging external resources, emphasizing the need for individuals or groups advocating policy amendments to tap into networks for momentum. Additionally, building trust and robust alliances, as highlighted by Schneider et al. (1995), is an important step towards policy action. The essential aspect of networking comes down to knowledge sharing/education, in relation to the interactions between actors in the institutional environment, e.g. between an expert industry group and policymakers. The process of identifying both advocates and critics to an actor’s preferred policy action is vital to disseminate ideas throughout the complex policy process. Especially if we are to keep in mind the speculation of expertise asymmetry among policymakers/regulators (Butler et al., 2023).

2.3.2 The Introduction of MiCA

Across the world, the emergence of crypto-assets led to the identification of regulatory gaps (Adrian & Mancini Griffoli, 2019; Carstens, 2019; Chiu & Koeppl, 2017; Houben & Snyers, 2018; Söderberg, 2018; Zhang et al., 2019). This intensified the focus on regulators, where in Europe, this spanned from national regulators to EU regulators. The responses from regulators and other supranational actors have come across through various activities, such as issuing public position papers (CPMI, 2019; EBA, 2019; ECB, 2019; ESMA, 2018; ESMA, 2019; European Commission, 2018; FATF, 2019; FSB, 2019), issuing warnings (EBA, 2014; ESA, 2018), but also engaging with a variety of actors across the institutional environment, such as for example lobbying groups. Many studies refer to regulatory risks around crypto-assets and the markets they enable, yet existing literature lacks a deeper understanding of these risks (also referred to as negative affordances) and how institutional actors approach the regulation of such risks. A recent

special issue within IS looks towards "The Regulation Of and Through Information Technology" (Butler et al., 2023) wherein the authors "posit that regulators and supervisory agencies across most industry sectors operate predominantly in reactive mode and fail to anticipate the risks and negative consequences of IT artefacts" (Butler et al., 2023, p. 86). While this has been the case across many IS innovations (digital platform regulation), the MiCA regulation is a unique example of a proactive policymaking process shaping the regulatory landscape for crypto-assets across Europe.

This dissertation is one of the first pieces to address the institutional work that went into the policymaking process of the newly adopted regulation for crypto-asset markets in Europe: MiCA. The outcome of the policymaking process is evident through the drafting of MiCA between September 2020 and the compromised text (result from trialogues) published in October 2022. MiCA proposes a regulatory framework designed to govern the crypto-asset market within the European Union. With the goal of establishing a unified approach to crypto-asset regulation throughout the EU, MiCA addresses the unique risks associated with crypto-assets and the underlying blockchain technology while aiming to promote innovation (European Commission, 2020). The regulation encompasses a broad spectrum of crypto-assets (including what has been referred to as cryptocurrencies, utility as security tokens), yet leaving out certain aspects, e.g., the regulation of NFTs[4] (Chandra, 2022). MiCA extends its reach to both primary and secondary market activities, covering services such as issuance, trading, and custody. In that sense also certain service providers, e.g., trading platforms and custodial wallet providers, fall under the scope (European Commission, 2020). A primary objective of MiCA is to safeguard consumers, investors, and market integrity, which is reflecting in the consumer and investor protection measures, disclosure and transparency requirements, and the provisions against money laundering and terrorist financing (European Commission, 2020).

While today, the final version of MiCA may seem as a natural outcome of the policymaking process ongoing in Europe, the outcome (and choice of regulation compared to directive) could not have been predicted prior 2020. Moreover, MiCA is a product of pluralistic institutional work where "the process of technology regulation appears as a negotiation or tussle between multiple institutional demands (Goodrick and Reay, 2011) to arrive at the 'right' regulatory outcome (e.g., Boon et al., 2019; Fuenfschilling and Truffer, 2016)" (Kokshagina et al., 2023, p. 162). Throughout my participation in the working group, the question of whether a separate regulatory framework for crypto-asset was *even* needed or preferred, was a valid question until the regulatory proposal was made public in September 2020. In that sense, the first half of this study (January 2019 - September 2020) unfolds the policymaking process that went into the creation of the MiCA proposal, whereas the second half (September 2020 – 2022) unfolds the policymaking process that occurred through negotiations of the first MiCA draft.

In conclusion, this background chapter covered the foundational aspects of crypto-assets, exploring their technological intricacies, transformative potentials, risks, and socio-political

[4] Non-Fungible Tokens: "a digital representation of an asset that is written in a "smart contract" (i.e. string of codes recorded in a decentralized ledger in the blockchain) and tradeable using digital cryptocurrencies" (Chandra, 2022, p. 1)

challenges. By conceptualizing money as a digital information artifact, it underscores the socio-political dimensions of crypto-assets and their potential to disrupt established institutional arrangements within financial service regulation and the current monetary order. The second part of the chapter introduced the public policy process, with the focus on the European context. Next, the theoretical chapter delves into a comprehensive exploration of the theoretical perspectives of this study.

CHAPTER 3. THEORETICAL FOUNDATIONS

This chapter focuses on the theoretical position that informs the research objective for this dissertation: *to understand the institutional work in policymaking on crypto-assets in the European Union.* The theoretical approach of this research builds upon established concepts from institutional theory in combination with an interdisciplinary focus on framing analysis. The first section introduces institutional theory that provides a lens to examine the underlying structures, norms, values, and belief systems that guide decision making in the policy realm. The second section outlines the theoretical perspective of institutional work centering attention on the bottom-up processes of meaning making (Lawrence & Suddaby, 2006; Purdy et al., 2019). Moreover, the institutional work perspective acknowledges that institutions are not static, but constantly being shaped by the actions of social agents (Purdy et al., 2019; Zilber, 2016). The third section introduces frame theory and focus on how the analytical methodology of frame and framing analysis has developed across disciplines. This section presents a review of literature across the disciplines of technology, policy, and social movement research. The aim of this review is to present a conceptual framework to guide our understanding of how actors, over time, engage in framing activities and mobilize action concerning policy development of emerging technology. The fourth section presents the theoretical concept of framing mechanisms used as a concept to uncover the discursive strategy of the working group in their efforts to shape perceptions and meanings associated with crypto-assets. The last section of this chapter combines abovementioned theoretical perspectives and concepts to present the conceptual framework of this dissertation.

3.1 Institutional Theory

Institutional theory provides a comprehensive foundational framework to study the interplay between societal norms, formal regulations, and organizational field behavior. This work builds upon the definition by Scott (2001) of institutions as the "cognitive, normative, and regulative structures and activities that provide stability and meaning to social activities" (p. 33). At its core, institutional theory posits that established rules, both formal constraints (laws and regulation) and informal constraints (cultural and traditional norms of behavior) influence the choices and actions of individuals and organizations (North, 1990; Scott, 2001). Formal institutions typically rely on coercive mechanisms such as laws, regulations, and sanctions to establish the rules that govern interactions among different organizational actors (Scott, 2001). Informal institutions on the other hand operate through normative and cultural-cognitive mechanisms comprising both the unwritten, societal accepted norms and values, as well as shared belief systems, that in combination shape social reality and social action (Edquist & Johnson, 1996; North, 1990; Scott, 2001).

Earlier works from the 1980s have been criticized to lack attention towards agency as explicating social phenomena (Currie, 2009). Following years of such criticism, theories of institutions pertaining to the exploration of institutional change expanded to include institutional isomorphism (DiMaggio & Powell, 1983; Hannan & Freeman, 1977; Hawley, 1968; Meyer & Rowan, 1977), institutional logics (Thornton & Ocasio, 2008) institutional legitimacy (Suchman, 1995; Zucker, 1987) institutional entrepreneurship (DiMaggio, 1988; Fligstein, 1997), and institutional work

(Lawrence & Suddaby, 2006). These perspectives theorize the ways in which institutions influence and are influenced by human action. For example, Thornton and Ocasio (2008) illustrate how an institutional order has a central logic (institutional logic) that guides actors' ways of reasoning, as well as their perceptions and experience of rationality. As multiple institutional orders coexist in society, it is inevitable that political struggles emerge because of conflicting realities among actors or groups in the attribution of meaning. Bringing light to these conflicts, also referred to as "tussles*"* (Kokshagina et al., 2023, p. 160) opens the black box of understanding agency through the coevolution of technology and institutions.

Studies within the Information System (IS) domain have adopted institutional perspectives to study the implementation of information systems (Baptista, 2006; Jensen et al., 2009; Lyytinen et al., 2009), the use of information systems (Avgerou, 2008; Rajão & Hayes, 2009), and diffusion and stabilization processes, also referred to as institutionalization (Meyer & Rowan, 1977; Tolbert & Zucker, 1996). For example, studies have focused on how technology becomes institutionalized within organizations (Baptista, 2006; Davidson & Chismar, 2007; Jensen et al., 2009; Lyytinen et al., 2009). A study focusing on the organizational implementation of an information system combined the use of institutional theory and sensemaking theory to link micro and macro analytical perspectives to the overall understanding of the adaption of information systems (Jensen et al., 2009). These studies mostly explore processes either *within* organizations or *across* fields/industries, whereas not much research focus on the processes *between* the organizational field and the institutional environment.

3.1.1 The Context of Policymaking

Technological innovation brings about new ways of organizing and introducing new types of activities and roles (Pentland et al., 2022). Sometimes these new activities fall outside the existing regulatory perimeter and thus uncertainty describes the situation that both regulators and industry actors find themselves in. The relationship between policy uncertainty and technological innovation is critical to the trajectory of technology and market development (Marcus, 1981; Novak, 2019). More specifically, policy uncertainty is a known barrier to the wider adoption of technologies in which both entrepreneurs and incumbents are unable to assess risks and opportunities (Garud et al., 2020; Marcus, 1981). Regulatory regimes and, in general, the legal system play an essential role in the *social construction of reality* (Berger & Luckman, 1991), where law institutionalizes activity (Edelman & Suchman, 1997). Researchers suggest that, for scholars, the task is to engage with the process of law to understand how meanings, that through legal definition, become "taken-for-granted components of 'the way the world works'" (Edelman & Suchman, 1997, p. 503).

Extant research has explored how policy frameworks contribute to shaping industry trajectories (Heeks & Nicholson, 2004; Lim & Anderson, 2016; Nicholson & Sahay, 2009; Novak, 2019; Silva & Figueroa, 2002; Troshani et al., 2013), where regulatory barriers to industry growth are in focus (Fisher & Harindranath, 2004; Garud et al., 2020). This research stream illustrates how the *outcomes* of regulating technology is a way to structure emerging markets where new roles, licenses, and supervisory obligations are created. The following examples highlight how research

attention has been directed towards investigating standardization as a process of institutionalization (Damsgaard & Lyytinen, 2001; Graham et al., 2003; King et al., 1994).

One study focused on understanding industry-wide information system standardization by applying a lens of collective action theory (Markus et al., 2003), while others studied the diffusion process of EDI standards focusing on the role and engagement of industry associations (Damsgaard & Lyytinen, 2001). In the study on the diffusion process of standards, the authors paid attention to the role of the institutional environment as it constrains or enables the diffusion of technology. In their classification of institutional measures, they note how regulation denotes the attention to standard setting. In that way, standard setting refers to the process in which practices are formalized and the scope of technological options is minimized (Damsgaard & Lyytinen, 2001). In another study on the formation of e-business standards, the attention toward standardization and policy formation from a social shaping approach aimed "to uncover the complex social interactions influencing the development of technologies" (Graham et al., 2003, p. 3). That is because "the outputs of the process (referring to the emerging institutional structure) are models of standard business processes that many users may have to accept" (Graham et al., 2003, p. 3). Also, the role of government institutions in IT innovation and the formation of institutional policy has been topics of investigation (King et al., 1994).

In the midst of newly established European regulations targeting emerging digital technologies, such as The Digital Service Act (DSA) and the Markets in Crypto-Asset (MiCA), it is of great importance to not only examine the *outcomes* of regulation but pay attention to the regulative *process,* where policymaking becomes the locus of investigation. In the context of crypto-assets, regulatory regimes around the world are not modernized to deal with crypto-assets and the markets in which new crypto-asset activity takes place (Söderberg, 2018). From an institutional perspective, there exists no *rules of the game* (North, 1990) to which regulators and the organizational field of crypto-assets can conform. There is no "regulative, normative, and/or cognitive structures and activities that provide stability and meaning to social behavior" (Scott, 2001, p. 33), with the aim to minimize uncertainty (Jepperson, 2021). This dissertation explores the *process* of policymaking on crypto-assets in order to understand the formation of the *rules of the game*.

A recent study within the domain of institutional theory exemplifies such a social approach to investigate the development of regulation (Kokshagina et al., 2023). Accordingly, to strive for expansion of our current theoretical and practical knowledge about the interplay between, and evolution of, institutions and emerging digital technologies, this research continues to explore agency as the center institutionalism. In concluding this introduction to institutional theory, and institutional theory in the context of policymaking, the next section introduces the perspective of institutional work as the theoretical foundation of this dissertation.

3.2 Institutional Work

Lawrence and Suddaby (2006) created what was meant as a preliminary starting point for institutional scholars to understand types of actions carried out by social agents in their engagements with institutional processes. This theoretical perspective was coined institutional

work. Institutional work describes the "purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions" (Lawrence & Suddaby, 2006, p. 215). The forms of institutional work outlined originally were supported by an examination of empirical cases focusing on types of activities performed by actors (Lawrence et al., 2009). This preliminary conceptualization of work performed towards creating, maintaining or disrupting rules, norms and belief systems however has been challenged and criticized by institutional scholars since then (Currie et al., 2012). Before elaborating upon later criticism of the categorization of types of institutional work, the following paragraph provides examples of types of institutional work that was initially theorized by Lawrence and Suddaby (2006).

In the work of maintaining rules and meaning systems, institutional actors engage in activities aimed to reproduce rules and behaviors. Such work evolves, for example, around the continuous assurance of compliance towards existing institutions. When actors engage in creating institutions this work refers to the creation of new rules, norms and belief systems. Such activities may, for example, include the definition and construction of a new rule system or the mobilization for political and regulatory support. Such work can be initiated through for example lobbying groups, in which actors can leverage existing practices, technologies and rules for familiarization reasons to support the new innovation. In the work of disrupting institutions, activities aim, for example, at changing existing practices, technologies and rules toward support for new institutional arrangements.

Across types of institutional work, institutional mechanisms are used by actors in the creation, maintenance and disruption of the institutional environment and the organizational field (Butler & Hackney, 2021; Lyytinen et al., 2009). Institutional mechanisms are conceptualized as coercive, normative and/or cultural-cognitive/mimetic that function at various levels of society and are materialized as "structures, processes, or other social artefacts" (Butler & Hackney, 2021, p. 3). As indicated earlier, this initial categorization of institutional work activities by Lawrence and Suddaby (2006) has also been criticized for its rigidity (Currie et al., 2012), where research has developed towards investigating the numerous combinations of kinds of institutional work (Gawer & Phillips, 2013; Helfen & Sydow, 2013; Lawrence et al., 2013; Micelotta & Washington, 2013). One study that examines the interplay of types of institutional work is an empirical study of professional elites in the medical sector working towards maintaining the model of medical professionalism (Currie et al., 2012). The results of the study demonstrate how the activities of *theorizing* and *defining*, which are typically viewed as aiming to create institutions (Lawrence & Suddaby, 2006), are used creatively as activities that aim to maintain the professional elite status. In that sense, actors engaging in institutional work combine a range of activities throughout their dynamic interaction with institutions.

In addition to the combination of activities, literature also illustrate how language is often a key element within theory of institutional work (Lawrence & Suddaby, 2006), also referred to as *rhetorical institutional work* (Currie et al., 2012; Zilber, 2007). As an element of the rhetorical focus, the compatibility, or resonance, between actions and dominant views in the institutional environment is of importance in understanding the combination of work activities carried out (Campbell, 2005; Trank & Washington, 2009) as well as the power positions of the actors

(Kokshagina et al., 2023; Pache & Santos, 2010). In that way, the chosen rhetoric of actors, the compatibility of the work in light of the visions of institutional environment, and power relations are important aspects in examining how actors carry out and incorporate various forms of institutional work activities.

To address agency in the study of the policymaking process, the theoretical perspective applied in this dissertation is the theory of institutional work. This lens has been advocated among IS scholars in researching regulation of IT (Butler et al., 2023). Agency is at the core of this work and builds upon a growing body of institutional research focusing on the interactional dynamics of meaning making and the evolution of institutions based on frames and framing (Aukes et al., 2018; Butler & Hackney, 2015; Butler & Hackney, 2021; Kokshagina et al., 2023; Purdy et al., 2019). This bottom-up approach is not to be confused with the logics perspective which is a top-down approach as the "belief systems and related practices that predominate in an organizational field" (Scott, 2001, p. 13). An example of the traditional logics perspective (top-down approach) is that of Haveman and Rao (1997) as they explored how societal logics affected organizational forms on the industry level. While the institutional logics perspective has received increased attention as scholars have redefined logics as "frames of reference that condition actors' choices for sensemaking, the vocabulary they use to motivate action and their sense of self and identity" (Thornton et al., 2012, p. 2), the logics perspective does not tackle how meanings (that later can translate into logics) are constructed at the field level (Purdy et al., 2019).

3.2.1 The Regulation of Technology

As mentioned in the previous section, lately, IS scholars have pointed towards a greater engagement with "The Regulation Of and Through Information Technology" (Butler et al., 2023). Rather than simply accepting and responding to regulatory changes, social actors are getting more and more involved and active in shaping opinions and discussions in the policymaking process and thus ultimately playing a role in shaping future markets and technology development. An example of this greater involvement by social actors is illustrated through IS research on, for example, digital platform-based sharing economy ventures (Garud et al., 2020). The case reveals how Uber used a series of strategies aimed to generate cognitive and sociopolitical legitimacy at the institutional level.

Several studies have used or expanded theory of institutional work to study technology regulation (Boon et al., 2019; Fuenfschilling & Truffer, 2016; Garud et al., 2020; Kokshagina et al., 2023; Pemer & Skjølsvik, 2017). For example, one study focusing on the implementation of policies and regulations in the public sector, looks at the interactions between policymakers and field level organizations (Pemer & Skjølsvik, 2017). Here, the institutional work perspective expands our knowledge about how certain actions come to affect power balances on the field level, the stages and responses in a regulatory process, and how actors use contradictory logics towards creating legitimacy. Another study also merges the perspectives of institutional work and institutional logics to understand how actors interact with the institutional context, by "conceptualizing agency without ignoring the obvious effects of highly institutionalized system structures", also known as embedded agency (Fuenfschilling & Truffer, 2016, p. 299). Their study presents a way to

incorporate both analysis of institutional logics, which sets the stage for the institutional environment, and analysis of types of institutional work carried out during a change process of socio-technical regimes. A third study examines how actors engage in processes of institutional work to change perceptions and regulations within society, concerning the emergence of the digital home-sharing platform Airbnb (Boon et al., 2019). The authors of the study find that the Airbnb platform focus mainly on creating new institutions despite a social perception of their disruptive elements.

When navigating institutional work activities, actors interact in dynamic meaning making processes, where interpretations of the policy issue at hand do not always align. Within studies of technology, such tensions have been conceptualized, on a more cognitive level as *frame incongruences* in the interpretation of technology (Orlikowski & Gash, 1994), and recently, within institutional theory, on a more structural level as *institutional tussles* (Kokshagina et al., 2023). While technological frame incongruence refers to technology specifically (and will be elaborated upon in section 3.3.1), institutional tussles is presented as a concept that aims to capture the ongoing tensions occurring throughout the regulation of technology, where tussles shape both the process and the outcome of regulation (Kokshagina et al., 2023).

In conclusion, the perspective of institutional work has been used as a theoretical lens to study regulatory processes, covering the implementation of new policies (Pemer & Skjølsvik, 2017), changes of socio-technical regimes (Fuenfschilling & Truffer, 2016) or the legitimization of business models (Boon et al., 2019; Garud et al., 2020), yet research targeting the development of regulation, more specifically, the process of policymaking is limited, with the exception of Kokshagina et al.'s, (2023) recent study on the regulation of algorithmic control of digital platforms. As most studies simply acknowledge the complexity around regulation, technology regulation is still a quite unexplored topic within IS research (Butler et al., 2023). Ever since Berger and Luckmann's groundbreaking work in 1996, it has been widely recognized that institutions are products of social construction. Engaging with the process of law, throughout for example engagements with the working group, provides an avenue to investigate the social construction of meaning that takes places in through dynamic interactions among institutional actors. This dissertation views the policy work engaged in by working group as a response to regulatory uncertainty, where institutional theory, and specifically the lens of institutional work, enables a detailed exploration of the bottom-up meaning making processes taking place in the realm of policymaking.

Lobbying and interest group participation are established practices, yet recent research on the European context finds that "the EU lobbying community has experienced a quite dramatic increase of firm lobbying over the past ten years" (Hanegraaff & Poletti, 2021, p. 839). While a single organization can engage in lobbying, more often than not, organizations come together in interest groups to combine efforts and power towards the regulation of a specific industry sector. Such groups make up a body of coherence, sharing what Swanson and Ramiller (1997) label an organizational vision. This vision is carried out through institutional work activities, carefully and strategically organized to benefit the members of the organizational field. The theory of institutional work enables the investigation of interrelations between agency and structure through

engaging and focusing on the actions of social agents as the center of institutional dynamics (Battilana et al., 2009). One area for exploration is the institutional work engaged in by working groups (interest group) in the context of policymaking. The next section goes into detail on this aspect and introduces institutional work in the context of policymaking on crypto-assets in the EU.

3.2.2 The Context of Crypto-asset Policymaking in the EU

Upon the creation of Bitcoin in 2008 and the innovation of crypto-asset information systems and artifacts, a new industry of financial technology organizations emerged. Policy uncertainty is at the core of many challenges experienced across the field (Massad, 2019). As a result, many companies actively engaged in the regulatory process to minimize uncertainty. An example of such engagements is a European working group, comprising the case of this dissertation. The working group is made up of representatives from the crypto-asset sector offering crypto-asset services in Europe (expanded upon in the methodology chapter). While their services differ, the working group shares what Swanson and Ramiller (1997) refer to as an organizing vision; shared cognition or technological frame about the crypto-asset technology, its innovative potential and complex nature regarding regulation.

The institutional work perspective enables the exploration of the interplay between actors from the organizational field, represented by members of different crypto-asset organizations, and actors from the institutional environment such as policymakers from directorates in the European Commission. The focus is on these dynamic interactions in a working group setting. Such emphasis on agency contributes to our understanding of the ongoing process of maintaining, creating and/or disrupting institutional structures and norms (Lawrence & Suddaby, 2006) when emerging technology empowers the formation of new organizational fields. The decision to study the policymaking process, and specifically, the work engaged in by the crypto-asset sector through the working group is based on two aspects in relation to the theoretical perspective of institutional work.

One, the fact that the financial service industry is one of the most regulated industries in society (Fisher & Harindranath, 2004) brings about an opportunity to study meaning making processes in a highly regulated context, facing challenges to comply with existing or emerging institutional arrangements. The importance for emerging fields to engage with the institutional environment and influence new institutional arrangements comes down to how financial regulation, directly, enables and constrains market activities (Damsgaard & Lyytinen, 2001). It is therefore a crucial aspect for the field to engage in dialogues around the nature of the technology and role of governance to influence interpretations and perceptions of policymakers in the policymaking process.

Two, concerning the policy uncertainty around crypto-assets, the lack of regulation has been viewed as one of the biggest barriers for the industry (Prewett et al., 2020; Saheb & Mamaghani, 2021). One prerequisite for wider crypto-asset adoption is thus the formulation of regulatory frameworks. However, while regulation has the potential to boost investments and positively affect the uptake of an industry, regulation can also negatively affect an industry because of high

compliance costs (Troshani & Hill, 2011). To the extreme, regulation can impact innovation and technological development in certain directions (Fisher & Harindranath, 2004; Novak, 2019). Due to these two crucial aspects of regulation within financial services, the policymaking process on crypto-assets, creates an opportunity to study the interplay between agency and structure and contribute to an evolving understanding of institutions and institutional processes in an increasingly digital world.

To expand the current theoretical approach to institutional work and capture the micro foundations of meaning construction, this work combines the lens of institutional work with the framing perspective. The following section introduces frame theory and an interdisciplinary review of the methodological approach of frame analysis across the three domains of technology, policy, and social movement research.

3.3 Frame Theory

In this section, frame theory is introduced as an approach that emphasizes the normative and cognitive elements in the study of social construction of knowledge and meaning (Surel, 2000). The theory is bidirectional and enables the combination of studying the construction of meaning from top-down and from bottom-up processes (Purdy et al., 2019). From the perspective of linguistics, *frame* has two meanings in the English language: *a* frame and/or *to* frame. In that sense conceptual confusion can arise. While some literature uses these meanings interchangeably, some scholars across disciplines have made efforts to distinguish the two and use *frame* analysis apart from *framing* analysis. In a seminal paper, Davidson (2006) outlines future research strategies, in which focus is on "investigating framing as a dynamic interpretive process" (p. 23). Similarly, Van Hulst and Yanow (2014) pose the title, "From Policy "Frames" to "Framing": Theorizing a More Dynamic, Political Approach" in an attempt to analytically rethink the application of frame analysis in policy research. The difference in focusing on frames or framing is tied to whether frames are analyzed as static frames (captured in snapshots) or as dynamic interpretive processes (Davidson, 2006). When focus shifts to framing processes, it is the forms of action that become of interest, implying examining mechanisms of change and/or stability. Yet, through the study of fram*ing* processes researchers are also interested in interpreting actors' frame*s*. That is because the cognitive elements of frames facilitate the flexibility and mobilization of actors' frames and choice of framing mechanisms (Campbell, 2005).

As hinted at above, frame and framing analysis exists across a wide area of research disciplines. Furthermore, interdisciplinary attempts have been made to combine knowledge and findings of the theoretical perspective of frames and framing. For example, Campbell's (2005) work integrates the workstream of social movements with organizational theory to highlight the similarities between organizations and social movements as forms of coordinated collective action. Purdy et al., (2019) adopt and integrate framing analysis to investigate institutional meaning making processes. The majority of studies within IS have sought to identify actors' (individuals or groups) frames toward an emerging technology either within an organizational setting or in an organizational field. In other words, adopting the more static approach to analyzing frames, and more specifically technological frames. In a study of blockchain technology,

Schüssler et al. (2017) found that the construction of meaning about the technology was far from stabilized as 10 different frames were extracted from the data. The analysis of frames here functions to indicate whether actors in the public debate had a neutral, positive, or negative stance toward the development of blockchain technology. In another study on the identification of frames, frame analysis was used to understand the attitude toward the adoption of big data (Guenduez et al., 2020). Interestingly, through frame identification it becomes clear that the implementation of technology in a field is not necessarily a question about technological feasibility, but acceptance and will (Guenduez et al., 2020). Similar results were found in a study on how CIOs tend to focus on technological characteristics through the implementation journey yet leave out attention toward social, political, cultural, and economic issues (Criado & de Zarate-Alcarazo, 2022) and how perceived challenges of technology implementation are not of technical nature (Sun & Medaglia, 2019).

Despite the technological focus, the findings of such studies highlight the social dimensions of technology adoption, implementation, and diffusion. The social dimensions to studies of technology are thus critical elements to understand throughout analysis of emerging technology. The development and adoption of information systems is today known widely as a social and political process in which frame analysis highlights the persuasive element of framing and reframing technology (Lin & Silva, 2005) and how understanding framing dynamics can provide insights about the directionality of technology development (Kaplan & Tripsas, 2008). The aim behind bridging streams of literature in this work comes from the belief that a combination of framing analytical approaches from IS, policy, and social movement domains can enrich the conceptual framework by providing additional tools and perspectives for analyzing the construction, contestation, and stabilization of meanings associated with technology (Bijker, 1995; Kaplan, 2008). It allows for a more comprehensive understanding of complex social processes involved in shaping the trajectory of technology, and in this case crypto-assets.

The next sections are structured as following: First, section 3.3.1 informs about frame and framing analysis in IS research and sets the stage for the conceptualizations presented in this work. It specifically targets the concept of technological frames and the conceptual developments from SCOT and TFR (Orlikowski & Gash, 1994; Pinch & Bijker, 1984). Second, sections 3.3.2 and 3.3.3 present the way frame and framing analysis have been used in policy and social movement theory in order to build upon already existing traditions of the analytical approach. Third, section 3.3.4 provides an overview of the interdisciplinary review across the three streams of literature. Fourth, section 3.4 outlines the concept of framing mechanisms used to explore the discursive strategy of the working group. In conclusion, section 3.5 presents the conceptual framework used in this dissertation to explore institutional meaning making in the policymaking process on crypto-assets.

3.3.1 Information System Research

Frame analysis developed as a theoretical concept in studies on information technology (IT) in the 1980s where managerial and organizational cognition researchers used concepts such as *cognitive frameworks* (Cowan, 1990)*, frames of reference* (Dunn & Ginsberg, 1986)*, interpretive*

schemes (Bartunek, 1984)*, cognitive maps* (Weick & Bougon, 1986), and *strategic frame* (Huff, 1990) to understand what was referred to as the *information challenge* that managers dealt with on a daily basis (Walsh, 1995). Moreover, these concepts provided a way to talk about how individual knowledge structures work to make decisions and solve problems as information worlds were increasing in complexity (Walsh, 1995). While these studies brought technology into the discussions, the technology itself was not the primary research subject. As a response to the developing controversies associated with new technologies, the *new sociology of technology* research stream established itself in the later 1980s (Douglas et al., 2012). The core assumption of this research stream was that human action determines technology development, which presents an antithesis to the technology deterministic approach to understand technology and our social worlds.

From the seminal article "The Social Construction of Facts and Artefacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other" (Pinch & Bijker, 1984), a new direction of scholarship developed, also known as the *social construction of technology* (SCOT) theory. The agency-centered approach to study technology, pioneered by Pinch and Bijker (1984) provided a new outlook to understand the acceptance or rejection of technologies in our social worlds. SCOT does not approach technology development as a linear path; instead, innovation processes are viewed from a multidirectional perspective. More specifically, by focusing on how members of society shape technology over time, it provides an understanding of how the social and the technical interact in creating, maintaining, and/or changing social worlds and the implications of these directions. SCOT offers a lens to study not only historic accounts of technology development, but to engage in the understanding of technologies as they unfold. The multidirectional approach allows for an inclusive analytical process where sensemaking is seen as a non-static and developing process to account for not only the increase and variety of interpretations about an artifact, but also the development of artifact variants (Bijker, 1995). Many variants of an artifact exist in the innovation process of technology, and they each have different conditions for survival that are social, cultural, economic, technical and/or political and situated in a certain time (Pinch & Bijker, 1984).

While scholars have noted how the overall theoretical framework of SCOT has been used to a lesser extend to understand the influence of social structures on technology development (Klein & Kleinman, 2002), the concept of *technological frames* introduced in 1995 (Bijker, 1995) has been widely used and further developed within theoretical streams. One theoretical perspective that has developed within the discipline of IS is that of *technological frames of reference* (TFR). Through a seminal paper in 1994, Wanda Orlikowski and Debra Gash published "Technological Frames: Making Sense of Information Technology in Organizations". Based on their interest to advance sensemaking theory to studies of information technologies in organizations, this new research agenda aimed to provide a socio-cognitive analytical framework to do so. Adopting many features from the SCOT model, e.g. including a variety of social groups in the analysis of technology development, their theoretical lens provides a way to study agency and change by focusing on actors' technological frames as they interpret the use of technology in their organizational setting (Orlikowski & Gash, 1994). In that sense, the concept of technological

frames has in and of itself become a theoretical perspective adopted within the overall methodology of frame analysis in studies of technology. The remainder of this section zooms in on the theoretical and the empirical significance, application and modifications of the technological frames perspective over time through the two models of SCOT and TFR.

Technological Frames in SCOT. Technological frames, as viewed through the SCOT perspective, offers a comprehensive understanding of how meanings associated with technology are generated and evolve over time (Bijker, 1993; Bijker, 1995; Kline & Pinch, 1996; Pinch & Bijker, 1984). In a case study on Bakelite (Bijker, 1995), the concept of technological frames became pivotal in understanding the diverse and sometimes contradictory interpretations ascribed to technology during interactions among various social groups. Frames in SCOT refer to a range of elements including "theories, goals, problem-solving strategies, and practices of use" (Bijker, 1995, p. 167). Frames are not static characteristics of a system or group but emerge from interactions among group members. In that sense, while referred to as frame*s*, the conceptualization in SCOT projects a mode of *activeness* (e.g. problem-solving strategies and practices of use) and includes the elements that today would be understood as the fram*ing* of technology. Technological frames bridge the gap between the social and the technical, emphasizing that the design of technology is influenced by the social environment and vice versa. This perspective challenges technological determinism, which asserts that technology dictates societal change (Pinch & Bijker, 1984). Additionally, technological frames highlight the inclusivity of different social groups in the development process.

One key aspect in this framework is the notion of relevant social groups. Social groups can encompass institutions, organizations, or individuals who share a common set of meanings attached to a specific technology (Pinch & Bijker, 1984). The identification of these groups is crucial as it allows for a deeper analysis of how technology is perceived and interpreted within different segments of society. Later research has pointed towards the need to situate these groups within a broader historical and structural context, considering their relations not only to the technology itself, but also to other societal elements like economics, politics, and ideology (Russell, 1986). This approach allows for a more nuanced understanding of the dynamics that shape technological development.

Interpretative flexibility is another pivotal concept in SCOT. It pertains to the initial stages of technological development, during which various social groups assign diverse meanings to a technology (Pinch & Bijker, 1984). This phase highlights the potential for different interpretations to coexist. Even after stabilization of a dominant interpretation, new interpretations can emerge, especially in response to evolving challenges and the social, cultural, economic, and institutional context in which the technology emerge (Kline & Pinch, 1996). This underscores the dynamic nature of technology and how phases of technological development (often the early stages) are characterized by a high degree of agency where various social actors shape the perception about technology. Furthermore, the concept of interpretative flexibility underscores that the design of technology is not solely confined to engineering practices but is also influenced by social, economic, and political factors.

Later criticism points out how the origins of the SCOT theory downplayed the notion of technological determinism (Russell, 1986), pointing towards paying more attention to technological advancements that may drive change. Through the growth of theories like SCOT, where emphasis has been put on the interpretation and meaning making elements in understanding the development and adoption of technology in society, the research agenda shifted towards the appreciation of uncovering the construction of meaning in studies of technology development (Winner, 1980, 1993). By highlighting the complexities, and the interpretive flexibility, around technologies, we gain an insight into the negotiations that have taken place pre-stabilization (when meanings align) of the technology. When studying technology within the context of policymaking, the concept of interpretive flexibility provides a window to acknowledge and understand how political interests influence the construction of meaning about technology in the very early periods of policymaking.

In SCOT, the concepts of stabilization and closure are explored (Pinch & Bijker, 1984). A stabilizing process is assumed due to the emphasis on conflict among technological frames throughout negotiations. Over time, social groups work to achieve consensus (also referred to as frame alignment) regarding the design and implications of technology. Stabilization refers to the process by which dominant interpretations of the artifact emerge and interpretative flexibility diminishes, reducing the variety of meanings associated with the technology (Bijker, 1995). The stabilization phase highlights the importance of examining not only *which* technological frames are present in the negotiations, but *how* technological frames evolve over time as well as *how* consensus is reached among relevant social groups. Additionally, the concept of closure was presented as a mechanism to explain why some variants of the artifact decline, although dualism may persist with multiple variants coexisting (Bijker, 1995). Understanding the mechanisms of closure sheds light on how different configurations of social groups influence the stabilization process.

Technological Frames of Reference (TFR). In efforts to expand the theoretical developments on the concept of technological frames**,** Orlikowski and Gash (1994) provide an analytical toolbox for operationalizing the technological frame concept in IS studies, as the concept offers a *powerful lens* for understanding how people make sense of a certain technology (p. 178). A technological frame is within TFR defined as "that subset of members' organizational frames that concern the assumptions, expectations, and knowledge they use to understand technology in organizations" (Orlikowski & Gash, 1994, p. 178). While the concept in SCOT had elements of activeness, TFR is a more static concept, used to analyze the cognitive structures of meaning making. In addition to the use of the technological frame concept, Orlikowski and Gash (1994) also introduced the analytical concepts of *core frame domain* and *frame content.* Frame domains emerge empirically and through thematization of the data. They can be thought of as the domains (overarching category) of the technological frames at play where multiple frames interact within one frame domain. Comparatively, frame content is quite straightforward and focuses on the content and specific knowledge within a frame domain (Orlikowski & Gash, 1994). To illustrate the conflicting element of framing in action, explored in this work, the concept of frame domain is

translated into the concept of *frame contest* to illustrate how different actors advocate or contest a certain framing of the technology.

Cognitive incongruences, or referred to as frame incongruences, are the focal point of many studies applying the TFR perspective (Madsen, 2018; Young et al., 2016) whereas research to a lesser extend has focused on aspects beyond incongruences (Davidson, 2006). Davidson (2006) criticizes the narrow view on frames brought forward by TFR, as Davidson (2006) revisits the concept to assess the contributions toward interpretative studies of technology and organizational change. On the account of Davidson's (2006) review, she stressed three areas that warranted attention for the TFR concept to "reach its potential contributions to knowledge" (p. 23). Specifically noting how attention should be put on analyzing frame structure, the dynamic nature of frames as interpretative processes, as well as paying more attention to the cultural and institutional elements of frames. Each of these areas will be examined in the following three paragraphs to provide additional information of the shortcomings of the current uses of a technological frames lens within IS research. Parts of the criticism therefore serve as the motivation behind using and expanding the concept of framing in this dissertation.

First, Davidson (2006) devotes attention to frame structure in her attempt to bring back the SCOT elements of stabilization and closure. What Davidson observes is how meanings about technology progress over time:

> Group members progress from understanding what a new technology might be used for to what it will be used for to what it is used for, increasing their focus on certain features and applications, and simplifying frame content. The result could be increased certainty among group members about the meaning, strategy, and implications for practice of the technology. (Davidson, 2006, p. 32)

The quote above captures the essence of the interactional framing agenda, highlighting the importance of considering the temporal aspect of sensemaking as actors progress in their understanding of technology over time. Davidson (2006) also noted that frame incongruence is not necessarily a problem, but the lack of closure (or frame alignment) can become problematic.

The second point highlighted by Davidson builds upon the first, that is, to recognize the dynamic nature of frames as interpretative processes. Many studies use snapshots of frames to capture groups' interpretations of technology, whereas more attention should be put on the temporal aspect of frames as they develop and shift over time. This work proposes a shift in the analytical attitude within IS research from focusing on frames and their incongruence toward examining framing as a process of understanding technology and its trajectory. Within this proposal, and especially for studies focusing on policymaking, greater attention can be put to the notion of power through the investigation of framing (Davidson, 2006) than what has been applied to date. This is because framing processes can be subject to dominant frames as earlier research also documented how it is difficult to isolate interpretive processes from power and political processes (Markus & Bjørn-Andersen, 1987).

The last focus area is that of frame origin, as Davidson (2006) encouraged researchers to "look outside the organization's boundaries to consider the societal and cultural origins of frames" (p. 33). Other works also mentioned how technological frames are bound in the institutional context and the "pre-existing cultural systems; symbolic frameworks, perceived to be both objective and external" (Scott, 2001, p. 41). Scott (2001) suggested considering institutional logics and their roles in shaping interpretations and legitimizing actions. Other researchers have included the concept of institutional logics to provide an institutional perspective on sensemaking, more specifically, a perspective on how sensemaking influences institutional logics and thus perceptions about the legitimacy of technology (Bemelmans, 2018). In that sense, one option to further research on technology within institutional theory, and to advance framing analysis, is by adopting the concept of institutional logics. In so doing, researchers have the opportunity to take frame incongruences and frame shifts a step further than merely recognizing that there is a clash, to investigating *why* there is a clash. In that way, expanding our understanding of how actors draw on an underlying institutional logic when attempting to interpret emerging technology and ultimately trying to affect social options, technology legitimacy, and the future use of the technology (Winner, 1980). Another option, also recognized as the bottom-up approach, compared to the institutional logic top-down approach, is that of recognizing how actors construct meaning that may challenge institutional logics and well-established processes (Kokshagina et al., 2023; Purdy et al., 2019). In that sense, while actors may try to resonate with the rhetoric of the field and the dominant visions, it is the construction and negotiation of meaning through interactions that become the focal point of investigation.

In conclusion, in technology research, two approaches of frame and framing analysis have been recognized from literature. One is the cognitive approach (Orlikowski & Gash, 1994), most recognizable through studies using the TFR lens or individual sensemaking theory, and the other is the interactional approach to framing analysis exemplified by SCOT (Bijker, 1995; Pinch & Bijker, 1984). The cognitive approach attempts to understand the cognitive structures of actors in their meaning making process of technology. The interactional approach focuses on how meanings about technology develop in interactions between and among actors, or group of actors. While the two approaches overlap, the concept of technological frames and framing are established on different premises within the two perspectives. Based on the traditions of TFR and SCOT, the research agenda of TFR adopts the more cognitive approach to frame analysis defining a technological frame as the "assumptions, expectations, and knowledge they[members] use to understand technology in organization" (Orlikowski & Gash, 1994, p. 178), whereas the SCOT agenda defines a technological frame "to include such different elements as current theories, goals, problem-solving strategies, and practices of use" (Douglas et al, 2012, p. 167). When elucidating the concept of framing across the two streams, within the cognitive stream, framing refers to the application of frames to the specific context, whereas framing within the interactional stream focuses on the discursive and dynamic use and choice of frames in action. In addition, the interactional approach offers an opportunity to analyze processes outside the organizational boundaries, and span across fields and institutions (Purdy et al., 2019).

3.3.2 Policy Research

Within policy research, frame analysis can be traced to the work of Rein and Schön (1977), in which frame analysis is used as a "methodology for problem setting" (p. 237). It is well understood that how policy issues are framed impact the support and action towards that issue. For example, a study on shale gas in Poland explored how framing dedicates more relevancy for policymaking toward some issues rather than others because of how the meaning of shale gas is framed by different policy-relevant actors (Lis & Stankiewicz, 2016). Another study on the alcohol policy debate in the UK examined the role of the alcohol industry in its attempt to frame the policy debate according to its underlying commercial interest (Hawkins & Holden, 2013). Both cases highlight the applicability of frame analysis to understand the dynamics of policymaking processes and, furthermore, how actors' frames compete in making sense of and providing meaning to policy issues. Because many political issues are complex, they are "open to a multitude of competing interpretations and meanings" (Hawkins & Holden, 2013, p. 55).

In addition to understanding policymaking processes, frame analysis provides a way to examine the persuasive element of framing. Yanovitzky and Weber (2020) argues that framing is a way to conceptualize and operationalize the use of evidence in public policymaking. McGrath (2007) focus on the way lobbyist can employ effective issue-framing in their attempt to "set the boundaries of a debate on a given issue" (McGrath, 2007, p. 271). In particular, the focus is on the language used to influence and persuade policymakers. The attention towards persuasion relates to the fact that the *way* policymakers think about an issue is important for how they will act. For lobbyist, this reinforces the attempt to affect the policymaking process in a way that resonates with their underlying interests. Balancing the diagnostic and prognostic aspects of the framing process, the authors Van Hulst and Yanow (2014) build upon the work of Rein and Schön (1977, 1996) as they aim to conceptualize the three acts in which framing is carried out in policy work: framing as *sensemaking*, framing as *naming,* and framing as *storytelling*. The following paragraphs will go into depth with each act as they are used as conceptual measures in the analysis of the crypto-asset policymaking process.

Framing as *sensemaking* captures the process in which policy actors construct meaning of the issues and the situations in which they are involved. As Schön (1983) noted, policy actors "make sense of an uncertain situation that initially makes no sense" (p. 40). The intersubjective aspect of sensemaking also means that actors construct meaning through their interaction with others (Weick, 1998). Sensemaking work thus comes to life "as actors engage in a conversation with the situation" (Van Hulst & Yanow, 2014, p. 98). A problematic situation arises based on the way actors frame problems and solutions and ultimately make sense of that situation. The second act builds upon Rein and Schön's (1977) *naming and framing* conceptualization, which captures the way naming works as a framing device in policy settings. Van Hulst and Yanow (2014) extended the concept to include "*naming: selecting and categorizing*" (p. 99) in an effort to investigate the way certain aspects of a problematic situation are weighted with more attention. Policy actors deliberately choose the features of a situation that they believe should be dealt with through policy work, and in that way, they also choose not to focus on other features. The naming: selecting and categorizing constitute a political act and a practical necessity to reduce ambiguity and uncertainty

of possible policy acts (Van Hulst & Yanow, 2014). In addition, when policy actors frame a situation through naming: selecting and categorizing, it is a way of shaping a world that they know (Van Hulst & Yanow, 2014). To conclude, *naming: selecting and categorizing* is an important element when trying to understand the process of policymaking. Policy actors frame situations through rhetoric, often belonging to the world they know and believe in.

The third act of framing involves *storytelling*, referred to as *narrative frames* (Rein & Schön, 1996; Van Hulst & Yanow, 2014). Storytelling is a way of binding different aspects together over time. Narrating a situation often includes explaining the past and the present and outlining what should occur in the future. Telling a story expands the framing device of naming as policy actors aim to tell their story through their view of the world and the context they are in. Therefore, within storytelling, persuasion is an important element (Van Hulst & Yanow, 2014). To conclude, these three framing acts, in combination, highlight the importance of examining the bottom-up processes of framing (Purdy et al., 2019) and pay closer attention to the meaning making process and how it can change over time. In the policymaking process, political acts occur when actors frame issues in a specific way to influence the direction of the policy debate (Béland, 2009; Weiss, 1989). Policy actors use different framing devices in efforts to shape an otherwise new, uncertain, and often problematic situation into something more familiar and within their knowledge structures. In addition, the process of policy framing is a *situated process* in which sensemaking, naming: selecting and categorizing, and storytelling are bounded in time, place, and relationships.

3.3.3 Social Movement Research

Within social movement research, frame and framing analysis has a long tradition. Beginning with Erving Goffman's (1974) "Frame Analysis" and the idea of how social constructions of reality are culturally mediated, frames are used to understand social movement dynamics (i.e., the character and the course of social movements (Benford & Snow, 2000), opportunity structures and resource mobilization (McAdam et al., 1996; McAdam et al., 2001; Tarrow, 1998) and frame alignment processes (Snow et al., 1986). In a review of scholarship on framing processes and social movements, Benford and Snow (2000) propose the concept of *collective action frames* to illustrate the dynamic character of framing processes. Collective action frames are defined as "action-oriented sets of beliefs and meanings that inspire and legitimate the activities and campaigns of a social movement organization (SMO)" (Benford & Snow, 2000, p. 614). Framing is thus seen as the mobilization of cultural-cognitive structures toward action.

During the past decades, theoretical attempts have been made to bridge the social movement and the institutional perspective (Campbell, 2004; Campbell, 2005; Clemens, 1997; Lounsbury et al., 2003; Rao, 1998; Snow & Benford, 1992). The development of different concepts such as field frames (Lounsbury et al., 2003) and master frames (Snow & Benford, 1992) have emerged as a way to re-focus analysis on fields as opposed to specifically for social movements. For example, as Benford (2013, p. 1) states "a master frame refers to a generic type of collective action frame that is wider in scope and influence than run-of-the-mill social movement frames" (quoted from Snow & Benford, 1992). The introduction of master or field frames suggest that frames can be adopted across context. Benford (2013) outlines examples of master frames from extant research

as e.g. injustice, justice, oppositional, hegemonic, imperial, anti-imperial, and market choice. While master frames such as these are flexible and transferable in theory, Campbell (2005) also notes that framing efforts must resonate with the political rhetoric of its constituency. In his work he uses examples of local customs, habits, schema, routines and more broadly as traditions, culture and identity to constitute areas of political rhetoric. Framing an issue in terms of a certain political rhetoric, for example in terms of equality, has been found to benefit actors' attempts in getting their points through. The resonance to political rhetoric is an important aspect that bridges framing theories of social movement and policy research when theorizing on agency within the institutional domain.

An important note concerning the definition of frames and master, or field frames is that of its association with ideology, as both link to belief systems. Here, Oliver and Johnston (2000) critiqued the way *frame* and *ideology* have been used interchangeably in the rise of frame analysis within social movement literature. While recognizing that frame theory provides powerful concepts to study processes of social movements, Oliver and Johnston (2000) contended that it should not substitute for analyzing the role of ideology in these processes. Through an example of the movements for and against legal abortion, they showed how simply renaming ideological beliefs (religious, medical necessity, women's need) to frames does not solve anything analytically. Yet, separating the analysis of ideology and frames can bring depth to the understanding of the interaction among the two and bring out "the ways in which actors have self-consciously positioned the issue over time" (Oliver & Johnston, 2000, p. 2). This critique exposes the difference between ideology, frames and political rhetoric. As the authors stated, ideologies are "sets of ideas [that]can be abstracted from the thought processes of any particular individual," (p. 8), whereas a frame "points to the cognitive processes wherein people bring to bear background knowledge to interpret an event or circumstance and to locate it in a larger system of meaning" (p. 8).

In addition to the developments and critiques of frame analysis in social movement research, a necessary condition for movement participation is the alignment of frames (Snow et al., 1986). Frame alignment processes have been theorized to point attention to the processes of *micro-mobilization* as "the various interactive and communicative processes that affect frame alignment" (Snow et al., 1986, p. 464). The four alignment processes: frame bridging, frame amplification, frame extension, and frame transformation are viewed as interactional accomplishments (Snow et al., 1986). A bridging process is "the linkage of two or more ideologically congruent but structurally unconnected frames" (p. 467). An amplification process involves "the clarification and invigoration of an interpretive frame", and can be value or belief orientated (p. 469). An extension process is the attempt "to enlarge its adherent pool by portraying its objectives or activities as attending to or being congruent with the values or interests of potential adherents" (p. 472). Finally, a transformation process occurs when "new values may have to be planted and nurtured, old meanings or understandings jettisoned, and erroneous beliefs or "misframings" reframed (p. 473). In this dissertation, the vocabulary used to support the understanding and the application of a frame alignment process is to view these engagements as *frame shifts*. In other

words, alignment processes indicate a form of frame shift of one or multiple actors in efforts to agree on a particular issue.

In conclusion, within social movement research, a framing process is an active enactment of meaning, developed and carried out to reach a specific goal. The successful mobilization of actions depends on the discursive strategy's resonance to the political rhetoric of its constituency. The analytical concept supports researchers' interpretive work and efforts to uncover questions such as: "What is going on here? What is being said? What does this mean? And how should I (or we) act or respond?" (Snow et al., 2018, p. 392). This concept serves to focus attention, articulate messages, and bring about transformation in social movements (Snow et al., 2018). The theoretical underpinnings also emphasize the attention to viewing frame alignment as a process of an interactional accomplishment. Frame shifts do not occur in isolation, they are both inputs and outcomes to the overall frame alignment process.

3.3.4 Summary of Frame and Framing Analysis

Frame and framing analysis are theoretical approaches that emphasizes the normative and cognitive elements in the study of social construction of knowledge and meaning (Surel, 2000). Different studies across streams of literature provide a lens to uncover meaning making within institutional change processes, such as a policymaking process. Through a review of literature that apply frame and framing analysis to studies of technology, policy and social movements, we discovered that frames and institutions are mutually constitutive. That is because institutional arrangements provide the context within which frames arise and gain legitimacy, while frames shape the evolution of institutions through actions of framing. Campbell (2005) explain this relationship by highlighting how the resonance to political rhetoric is an important aspect to consider across theories of social movement and policy research. While not stated as explicit as political rhetoric, Bijker (1995) introduced the concept of technological frames, in which theories and practices of use are elements of a frame, to also recognize the relationship between frames and existing institutional practices.

Across domains, studies have pointed towards future research strategies employing the dynamic interpretive process of framing (Davidson, 2006; Van Hulst & Yanow, 2014). By shifting the research agenda to studying the forms of action engaged in by different social groups or actors, this approach provides an avenue to explore types of institutional mechanisms employed to change or stabilize perceptions and interpretations about technology and the political issue at hand. Through the review of the three research streams, multiple perspectives and insights to framing analysis were found. Combined into an integrated framework in this dissertation, framing is theorized to: attribute meaning to/about technology, define the problem setting within the policy context and induce change by influencing perceptions and interpretations about technology and policy issues. The functions of framing are conceptualized from across literature as diagnostic, prognostic, and motivational (Bijker, 1995; Snow & Benford, 1992; Van Hulst & Yanow, 2014). Table 1 provides an overview of the integrated framing perspective.

In conclusion, framing analysis is a versatile concept that spans across many research disciplines. The combined framework of IS, policy, and social movement theory provides the opportunity to

apply a broader analytical lens to understand the way institutional actors work to define, interpret, and communicate issues about technology to influence the policymaking process on crypto-assets. Next, section 3.4 introduces the concept of framing mechanisms and elaborates upon how this concept is used to explore the discursive strategy employed by the working group.

Table 1: Framing Perspectives Across Disciplines

Research stream	Cause	Effect	Indicative References
Information Systems	Attribute meaning to/about technology	Affect how people perceive and interpret the usefulness and role of technology	Butler & Hackney, 2015; 2021; Kokshagina et al., 2023; Purdy et al., 2019; Bijker, 1995; Orlikowski & Gash, 1994; Davis & Marquis, 2005; Sun & Medaglia, 2019; Scüssler et al., 2017; Guenduez et al., 2020; Wang et al., 2019; Amadoru et al., 2019; Kaplan & Tripsas, 2008
Policy	Define the problem setting	Affect how people perceive and give meaning to a certain policy issue	Van Hulst & Yanow, 2014; Schön, 1983; Rein & Schön, 1977; Rein & Schön, 1996; Van Hulst et al., 2014; Aukes et al., 2017
Social Movement	Induce social change	Affect how people perceive identity, interest, and possibilities for change	Benford, 2013; Snow & Benford, 1992; Snow et al., 1986; Snow et al., 2018; Benford & Snow, 2000; Campbell, 2004; 2005

3.4 Framing Mechanisms

Research suggest that mechanisms-based theorizing is one way to explore how processes, engaged in by institutional actors, influence the institutional environment and the organizational field (Butler et al., 2023). Institutional mechanisms are "structures, processes, or social artifacts" that "operate at macro-, meso-, and microlevels" (Butler & Hackney, 2021, p. 3), where actors employ combinations of coercive, normative and cultural-cognitive mechanisms to influence institutional change (Butler & Hackney, 2015; Butler & Hackney, 2021; Butler et al., 2023). One type of institutional mechanism is framing. Across literature, this mechanism is seen as a cognitive process (Butler & Hackney, 2015; Butler & Hackney, 2021; Butler et al., 2023; Campbell, 2004; Campbell, 2005). Building upon the review of frame analysis across IS, policy, and social movement research, the concept of framing mechanism draws particular inspiration from John Campbell (2004, 2005). In this dissertation, I explore and theorize upon the framing mechanisms that operate between the organizational field of crypto-assets and actors from its immediate institutional environment. Specifically, the way the working group employs framing mechanisms in the process of aligning meanings and interpretations about crypto-assets and the particular policy issue in focus.

Adopting the analogy of a mechanism put forth by Davis and Marquis (2005), where mechanisms are viewed as tools for explanation, and inspired by Campbell's (2004, 2005) work on framing mechanisms, I adopt the conceptualization of framing as "a cognitive mechanism of social change" (Campbell, 2005, p. 49). This conceptualization is of persuasive character (Lin & Silva, 2005) and holds elements of manipulation (Campbell, 2005) where actors' frames guide the mobilization of action. Framing mechanisms help in constructing the narrative (sensemaking, naming and categorizing, and storytelling) in a given setting and is part of an actor's or group's discursive strategy to influence institutional change. In this dissertation, the concept of framing mechanisms contributes to the understanding of the ongoing process and strategy of the working group to create, maintain and/or disrupt institutional arrangements in efforts to increase regulatory legitimacy of the emerging crypto-asset field. I argue that, while mechanism-based theorizing rests on different typologies, they are well suited to explain (not to confuse with predict) social, organizational and institutional change processes (Davis & Marquis, 2005). The explanatory power of mechanism-based theorizing, which is argued to be rather new in IS (Butler & Hackney, 2021), is effective when it comes to investigating meaning making activities and how these constructed meanings stabilize and sometimes institutionalize (Purdy et al., 2019).

As highlighted across literature streams, framing mechanisms are part of the discursive strategies used throughout the dynamic enactment and alignment of meaning in interactions (Lin & Silva, 2005; McGrath, 2007; Van Hulst & Yanow, 2014). Gaining insights into the discursive strategies "is important for bridging the micro/macro gap, because microlevel interactions form the building blocks of macrolevel actions that come to be taken for granted as institutional structures" (Gray et al., 2015, p. 116). Accordingly, framing can be used to explain both cause and effect of actions and is a generative concept suitable for temporal research studies (Campbell, 2004, 2005). While frames are defined as cognitive structures (Orlikowski & Gash, 1994), framing is viewed as the interactional meaning making process equipped to examine "communicative constitution, maintenance, and transformation of institutions" (Cornelissen et al., 2015, p. 14). In other words, the theoretical framing perspective, here including attention to the use of framing mechanisms, is well suited to engage with areas of institutional work.

From the interdisciplinary review of frame and framing analysis, it is known that mechanisms manifest across three distinct orientations: diagnostic framing; aiming to define the nature and underlying causes of a problem, prognostic framing; dedicated to proposing solutions and anticipate outcomes, and motivational framing; focusing on mobilizing support and justifying actions (Bijker, 1995; Campbell, 2004; Campbell, 2005; Snow & Benford, 1992; Van Hulst & Yanow, 2014). Specifically, framing mechanisms are theorized to either reinforce, or change frames of actors throughout crypto-asset policy development discussions. In conclusion, the theoretical foundations outlined in this section offers a comprehensive view of the complex dynamics between concepts of frames and framing in providing additional understanding to areas of institutional work. Moreover, the conceptual features of framing mechanisms constitute a framework aiding our analysis of how policy issues regarding crypto-assets are understood and addressed in working group meetings.

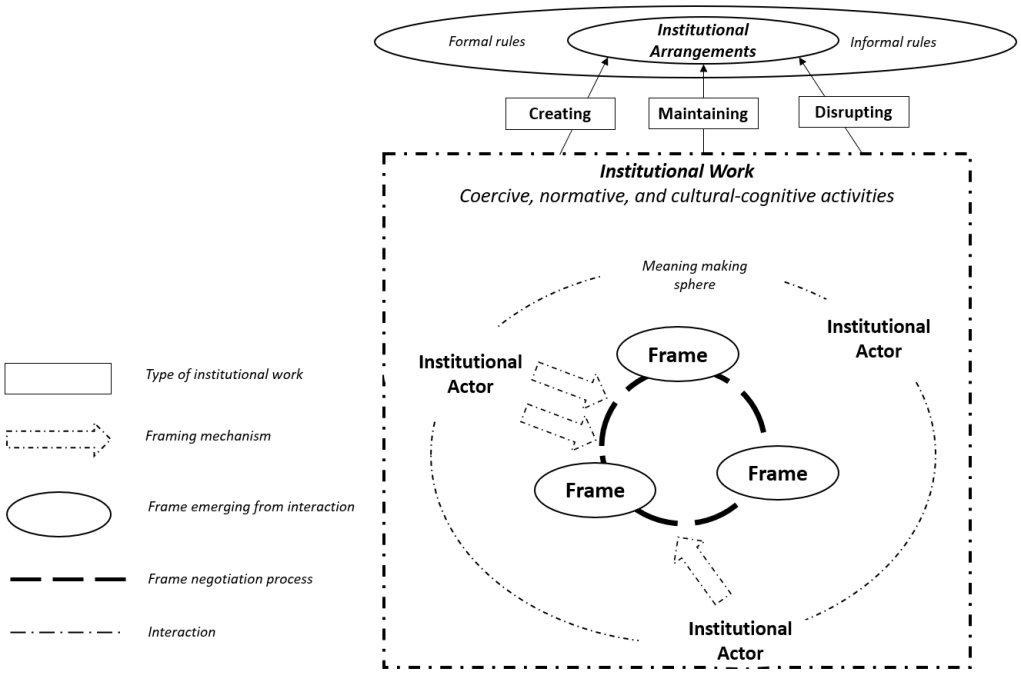
3.5 A Conceptual Framework to Explore Policy Development of Technology

This dissertation presents a conceptual framework that aims to bridge the increasingly recognized bottom-up approach to institutional theory (Butler & Hackney, 2015; Lawrence & Suddaby, 2006; Purdy et al., 2019), that of institutional work, and the interactive framing perspective (Bijker, 1995; Davidson, 2006; Van Hulst & Yanow, 2014), especially focusing on the use of framing mechanisms (Campbell, 2004, 2005). It should be seen as one step further to examine the interwoven character of institutional and technology change processes where frames and institutions are mutually constitutive. Institutional arrangements provide the context within which frames gain legitimacy, while frames shape the evolution of institutions. The foundational concepts of institutional work theory, where actors' active engagements in policy development aim to create, maintain and/or disrupt institutional arrangements (Lawrence & Suddaby, 2006), is combined with concepts drawn from an interdisciplinary review of frame and framing analysis. Table 2 summarizes these constructs that will aid the empirical analysis and the framework presented in figure 1 demonstrates the relationship between the concepts of institutional work, institutional actors, frames, and framing mechanisms. The focus of the framework is on the interactive and dynamic meaning making processes that occur as underlying forms of institutional work.

Table 2: Summary of Theoretical Concepts

Concepts	Description
Institutional Work	The purposive action aimed towards the creation, maintenance and/or disruption of institutional arrangements.
Frames	The perceptions and interpretations of the role, impact, and governance of technology, which holds discursive and dynamic elements of the use and choice of frames in action.
Frame contest	Frame contest appears when two or more frames are in conflict (incongruence) with one another.
Framing Mechanisms	Processes (of cognitive, normative or cultural-cognitive) through which actors shape perceptions and meaning associated with actions.
Diagnostic framing	Activities oriented towards defining the nature of the problem and understand underlying causes.
Prognostic framing	Activities oriented towards proposing solutions and predicting outcomes.
Motivational framing	Activities oriented towards mobilizing support and justifying actions.

Figure 1: A Conceptual Framework for Institutional Work on Developing Crypto-Asset Policy



In this dissertation, the framework is used to analyze the negotiation of meaning about crypto-asset and preferred policy action. Furthermore, the empirical dataset enables the investigation of the framing mechanisms employed by the working group. The framework emphasizes the dynamic interplay between agency and structure, which has been missing across the field (Currie, 2009). It highlights the strategic use of framing as an underlying form of institutional work. Institutional actors (from field level and institutional environment) engage in types of institutional work and employ different types of framing mechanisms to shape and reshape frames that underlie policy-technology discussions. Such engagement involves efforts to introduce, challenge or modify frames to influence the political agenda. While frames develop *in interaction* and evolve *through negotiation,* they do not *belong* to a specific institutional actor, instead they can be advocated by or contested by actors. The concept of framing mechanisms highlights how actors shape perceptions and interpretations associated with technology and policy action. Framing mechanisms serve as discursive strategic tools that influence how actors engage in institutional work.

Power relations play a vital part in the technology innovation process (Humphreys, 2005) and in the political decision making process (Russell, 1986). Different social groups can assert power through different discursive strategies in the interactive framing process. The interplay between institutional work and framing focus on framing as micro-mobilizing actions. Here meaning making is the underlying process conditioning actors' institutional work activities. Institutional meaning making is understood as both a subconscious and a conscious/purposeful process where strategic action plays a vital role in the negotiation of these meanings. In that sense, actors strategically employ framing mechanisms to advance their interest and influence the frames at play within the policy discussions. Framing strategies shape interpretations about technology and

the related policy issues and in that way influence policy decision making processes. This study is bounded to the meaning making sphere where the organizational field of crypto-assets interact with actors from its immediate institutional environment. It is a case of institutional work that delves into the bottom-up processes of interactive meaning making.

Inspired by Feenberg's (1991) critical outlook on the neutrality of technology where he claims that technology is contextually defined, and its design inherently political, this conceptual framework aims to further theory development of political dimensions in understanding technology trajectories, and by that continue to bridge the social construction of technology research agenda with that of institutional theory. Importantly, this case does not undermine certain aspects of technology determinism as it is recognized that not only social groups play a part in construction of technology. Therefore, the analysis also takes into account the opportunities and constrains of technology development that are embedded within broader socio-political and economic systems. In summary, this dissertation's conceptual framework is presented to expand the analytical approach of studies focusing on the coevolution of technology and institutions in three areas:

First, by drawing on institutional theory, specifically institutional work, this dissertation focuses on the bottom-up interactive meaning making processes, in which the investigation of framing mechanisms (Campbell, 2005) sheds light on the discursive strategies employed to shape and reshape frames throughout frame negotiation processes.

Second, by critically reflecting on the use of the technological frames concept in information systems research, highlighting the static and interactive approaches, the framework draws theoretical inspiration from the use of framing analysis in policy and social movement research to conceptualize framing. As a result, the framing analysis focuses on actors' attribution of meaning to/about technology, the definition of the problem setting within the policy context and the efforts applied to induce change. The interdisciplinary review of frame and framing analysis shows that diagnostic, prognostic and motivational framing techniques are used by actors in the framing negotiation process (Bijker, 1995; Campbell, 2004; Campbell, 2005; Snow & Benford, 1992; Van Hulst & Yanow, 2014).

Third, to adopt a process view to the otherwise static concept of a technological frame (Davidson, 2006), this conceptual framework provides an avenue for scholars to study the complexities of the interactive framing process by for example capturing frame shifts alongside greater contextual understanding of the socio-political and economic aspects of technology regulation.

In concluding the theoretical foundations, the next chapter focuses on the methodology, and more specifically the rationale for selecting crypto-asset policymaking as the empirical case for this dissertation. The first part will present the theoretical approach and philosophical assumptions underlying the work as well as zooming in on the case. The second part focuses specifically on data, including the data collection and analysis strategies applied throughout the analysis.

CHAPTER 4. METHODOLOGY

As an industrial PhD candidate working in a large European PayTech organization, I became embedded in different projects related to blockchain technology throughout my research. In the early stages of developing knowledge about the organization and the strategic goals related to innovation, I was involved in a project related to micropayments in the media industry. The idea was to provide customers with an alternative to monthly article subscriptions and my host company was chosen to develop the payment platform. However, initial interviews with project leaders led to the conclusion that: "It was just approved tech that no one really understood. The concept wasn't there yet" (INT1). Blockchain technology was thus seen as an explorative part of the innovative focus that was misaligned with reality. Additionally, every presentation related to the project referred to regulation as the biggest barrier for the industry in making use of the technology. The example of micropayments highlights the disruptive element of blockchain technology adoption; ultimately, the micropayment subscription model was shut down as it was a threat to current monetization models in the media industry. Based on the outcomes of the project and the enormous uncertainty regarding regulation, this led to my interest in understanding the policy debates surrounding the technology. In gaining such understanding, this knowledge could be shared with members of the host organization and provide expertise related to specific regulatory developments around crypto-assets.

Based on these initial considerations, I embarked on the journey to become a representative in a European working group focusing on the regulation of crypto-assets. The working group was established in 2015 with the goal to facilitate conversations between the growing crypto-asset industry and regulatory authorities. The founders of the group had partnered with a European lobbying organization that could help initiate these dialogs and manage the process. By the time I joined in 2019, the working group was composed of just a handful of fintech companies in the space of crypto-asset services. My host company had been one of the early companies in the group and after I joined the company, I was chosen as a representative going forward. As opposed to previous representations, my role became more observational because of a change in the host organization's priorities. As blockchain projects were deprioritized, focus shifted to developing knowledge about the direction of the technology, market, and regulation. After attending my first working group meeting in February 2019, I realized how such a research site provided an exceptional opportunity to study the direct interactions among the institutional actors from the emerging field of crypto-assets and policymakers in the early periods of policymaking. This research setting enables what Davis and Marquis (2005) refer to as a unique way to approach "problem-driven work on contemporary economic institutions" (p. 341) where "the birth of new industries (e.g., the Internet industry) and blending of old industries (e.g., information and communication technologies, financial services, media) provide particularly rich contexts for studying fields and their genesis, as these are situations where the admissions standards and rules of play are revealed and contested" (p. 341). My engagement with the working group, in the form of field observations and access to secondary data sources such as position papers and monthly reports, make up the core of this study's empirical data set and spans more than three years. These rich sources of data will be elaborated on further in the data collection section.

To stay close to the professional practice-oriented challenges related to policy uncertainty, this dissertation builds upon the principles of engaged scholarship as framed by Van de Ven (2007). The principles underscore bridging the gap between research and practice to address the twin goals of rigor and relevance. Within IS research, such knowledge gaps have been primarily studied through engaging methods such as design science research (Hevner et al., 2004) or action research (Avison, 2002) to address practical problems. In fact, the research proposal for this industrial PhD was structured around an action research design. However, because of the changing organizational structure in the host company (in which product development on specific blockchain projects was deprioritized), the research methodology changed to another form of engagement in the field (participant observation), outside the boundaries of the host company. These field engagements as a participant observer can be described through Van de Ven's (2007) notion of *informed basic research*, which aims to capture descriptions, explanations, or predictions of social phenomena and *collaborative basic research*, which deeply engages the researcher in the field context.

Based on these considerations, this case study is designed to reconcile the relationship between theory and practice, and research and action to make the research findings useful for science, practice, and policymakers. Engaged scholarship is a participatory research process that has a strong emphasis on engaging relevant stakeholders throughout the process. A main priority has therefore been to communicate knowledge and to discuss problems and possible solutions with experts and other stakeholders within the company. In the second year (2020) of this study, I conducted discussion forums on a bi-monthly schedule in the host company. These forums addressed specific issues (e.g., market uptake or regulatory hurdles) and provided for an opportunity to engage in rich dialogues and knowledge sharing with company stakeholders. The attendance spanned from strategy and product stakeholders to stakeholders from the legal department. In addition to these forums, two workshops were organized around possible projects as proof-of-concepts. The outcomes of these workshops resulted in the initiation of two projects to build a crypto-asset payment solution for the Austrian and Swiss market. The knowledge gained in the working group was of great value and informed the decision-making process regarding the establishment of a crypto-asset service provider (CASP) partnership and the internal legal approval of the projects.

The remainder of this chapter aims to explicate the theoretical and methodological approach and considerations of the research. First, a section outlines the theoretical approach taken. Next, a section on the philosophical assumptions reflects upon the ontological and epistemological assumptions made in this research. Third, the case study design is described including the field setting and case context.

4.1 Theoretical Approach

This dissertation aims to explore the way meanings were constructed regarding the development of crypto-assets within the context of European policymaking resulting in the MiCA regulation. Current research lacks the institutional context from which the technology emerges (Hedman et al., 2021) and hence, technology contextualization must be recognized as part of the wider socio-economic and political landscape (Currie, 2009). Drawing on institutional theory (in particular

institutional work) and framing analysis (the diagnostic, prognostic, motivational functions, and framing mechanisms), this study investigates the process of meaning construction, contestation and stabilization between institutional actors from the organizational field of crypto-assets and policymakers in the policymaking process leading up to MiCA. In more detail, the investigation explores the bottom-up interactive meaning making processes (Kokshagina et al., 2023; Purdy et al., 2019; Van Hulst & Yanow, 2014), in which the investigation of framing mechanisms (Campbell, 2005) sheds light on the discursive strategies employed to shape and reshape actors perceptions and meanings associated with action in the policymaking process of crypto-assets.

Frame and framing analysis emphasize the normative and cognitive elements in the study of social construction of knowledge and meaning (Surel, 2000) and exists across research disciplines. As an interdisciplinary theoretical perspective, frame and framing analysis have proven insightful in disciplines focusing on uncovering sensemaking processes within and as part of the institutional environment (Hawkins & Holden, 2013; Lis & Stankiewicz, 2016; Munir & Phillips, 2005). Outside the sphere of technology-centric research agendas, frame and more recently, framing analysis has an extended history within both policy research and social movement research (Benford & Snow, 2000; Rein & Schön, 1977; Van Hulst & Yanow, 2014). Within studies of technology, the concept of technological frames emerged during the 1980s through the introduction of the social construction of technology (SCOT) by Pinch and Bijker (1984). Parts of the theory were later adopted within the information systems field as technological frames research (TFR) (Orlikowski & Gash, 1994). In this dissertation, the interactive approach to frame analysis is adopted, referred to as framing analysis (Bijker, 1995; Purdy et al., 2019; Van Hulst & Yanow, 2014) where the interdisciplinary review of technology, policy, and social movement theory results in a broader analytical lens to explore the construction of meaning about technology within the institutional context of policymaking. The interactive approach allows not only to understand the developments of frames in action, over timer, but also the specific actions carried out by actors in the process of framing the technology to reinforce a certain preference for policy action. These processes are referred to as the use of framing mechanisms, which is a well-established concept from literature (Butler & Hackney, 2015; Butler & Hackney, 2021; Campbell, 2004; Campbell, 2005; Butler, 2024) as explained in section 3.3.

The SCOT lens has, in the past, been proposed for use in case studies of technological innovation (Winner, 1993). Recent works have provided extensions to the original account of the social construction of technology model in efforts to understand the social construction of technology "on a larger economic, political, and social scale" (Humphreys, 2005, p. 248) or to focus on digital technologies including more recent theoretical approaches to understanding human choices regarding the development of technology (Baalen et al., 2016). Yet, while Humphreys (2005) paid attention to the policy aspect and suggested adding meta-categories to the concept of social grouping due to the relativism and subjectivity of researchers' analysis, proper attention to politics and the institutional context regarding the construction of meaning about technology innovation remains undertheorized (Currie & Swanson, 2009; Hedman & Gimpel, 2010; Kaplan & Tripsas, 2008; Maitlis & Christianson, 2014; Munir & Phillips, 2005; Swanson & Ramiller, 1997; Weber & Glynn, 2006).

Agency is at the core of the theoretical approach of this dissertation and builds upon a growing body of institutional research focusing on the interactional dynamics of meaning making and the evolution of institutions based on frames and framing (Aukes et al., 2018; Butler & Hackney, 2015; Butler & Hackney, 2021; Kokshagina et al., 2023; Purdy et al., 2019). The concept of frames is used to guide the investigation of framing as part of understanding the construction, contestation and stabilization of meaning among social actors. The interdisciplinary conceptualization of framing and its functions (diagnostic, prognostic and motivational) aid the exploration of frame contests as they develop over time. The concept of framing mechanisms points towards the specific strategic discursive elements of the framing activities. The analytical framing approach enables the exploration of the challenges met by both policy actors and industry actors as they make sense of and construct meaning about crypto-assets and the future of crypto-asset markets. Inspired by earlier work on framing mechanisms (Campbell (2004, 2005), the analysis of mechanisms in this work focuses on the discursive strategy of the working group, and how they work to influence the formation and direction of policymaking of crypto-asset markets. This work aspires to bring bottom-up approaches such as framing and institutional theory (Purdy et al., 2019) through a process-oriented study (Langley, 1999) to explain the interwoven character of the evolution of institutions and technology innovation (Winner, 1993).

4.2 Philosophical Assumptions

This section aims to reflect upon the philosophical assumptions of the research approach. In this dissertation, the ontological assumption of reality is viewed as socially constructed. Crypto-assets are understood through the meanings that different actors assign to them (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). The epistemological assumptions of this work are based on the idea that knowledge is constructed through the interpretations and meaning making processes of the people studied (Hammersley & Atkinson, 2007). Considering these assumptions, the research approach is qualitative in nature and focuses on the ways in which the concept of crypto-asset is constructed through the way individuals—but more precisely, collective groups—make sense of and engage in various situations and meaning making processes around technology. The following is not an attempt to engage in comprehensive philosophical debates but is a way to inform readers about the beliefs that have motivated and formed the research, its focus, and choices with regard to data collection and analysis.

The underlying assumption for interpretivist work is that reality and knowledge are "gained only through social constructions such as language, consciousness, shared meanings, documents, tools and other artifacts" (Klein & Myers, 1999, p. 220). Interpretivist works focus on the complexity of human sensemaking as the situation emerges (Kaplan & Maxwell, 1994). In particular, within IS research, interpretive research methods are "aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influence by the context" (Walsham, 1993, pp. 4-5). Within the interpretive discourse, IS scholars have brought attention toward the following observations: (a) to pay more attention to critical reflection between the researchers and the participants, and (b) to not use a priori theory as a pattern for interpreting field data as this questions the researcher's ability to make sense of the

data (Schultze et al., 2000). Both observations are considered throughout this research to allow for the data to speak for themselves.

Naturally, the theoretical underpinnings of the social construction of technology model (SCOT) and the technological frames research (TFR), are to be found within the interpretive paradigm. Similar underpinnings concern the theories of framing from policy and social movement research. Through the concept of frames and framing, the emphasis in this study is put on the collective sensemaking processes and how they develop and change over time, as well as being influenced by the context of policymaking and actions of actors. The focus is process oriented, where the discursive strategies that different actors engage in is at the core. In this way, the objectives of the study are based on the philosophical assumption that actors construct meaning through both their interactions with technology and with existing institutional structures. The reason for choosing this theoretical lens is that the interactive approach of frame analysis – framing – is dynamic in nature, and frames are to be identified through interactions among various groups. The research inquiries into the processes of interaction (Kaplan & Maxwell, 1994), internally among group members, and between the organizational field and actors from its institutional environment such as policymakers.

After becoming acquainted with the formalities and the language used in policy debates in the working group setting, I recognized the value of being part of *the early discussions* (Tyre & Orlikowski, 1994) surrounding a new—and in some eyes disruptive—technology and its perceived impact on the European financial system (Davis & Marquis, 2005). The commitment to participant observation reflects the underlying philosophical assumptions stated earlier in this section and enabled me to collect data on the meanings and interpretations made about the technology through interactions. This approach empowered me "to develop a holistic understanding of the phenomena under study that is as objective and accurate as possible given the limitations of the method" (DeWalt & DeWalt, 2002, p. 92). This choice also builds on Bijker's (1995) strategic suggestion to study the emergence of technology frames through the interactions within or among groups. This *insider* view provides a mechanism to follow how meanings about the technology develop over time as they are tightly intertwined with the context of the legislative journey (Myers, 2013).

The analytical part of the work approaches the data through a thematic analysis (Braun & Clarke, 2006) that allows themes to emerge that help explicate actors' interpretations and actions about crypto-assets in the context of policymaking. To identify, analyze, and discuss meaning constructions and how they develop, change, and stabilize over time, the work introduces the concept of framing mechanisms (Butler & Hackney, 2015; Butler & Hackney, 2021; Campbell, 2004; Campbell, 2005). Framing mechanisms serve to conceptualize how the working group, through the attribution of meaning to technology, engage in strategic framing processes of the technology and future markets. To account for the complex and intertwined conceptual structures that are part of entering the field, *thick descriptions* are used throughout the analysis to describe and understand what is happening (Walsham, 1995).

4.3 Case Study Design

This is a case study on institutional work around policymaking of crypto-asset in Europe. The case presents a unique context to study the relationship between policy uncertainty and technology innovation (Davis & Marquis, 2005; Marcus, 1981). The case study design was chosen as "an empirical inquiry that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context" (Yin, 2018, p. 14). The case study approach also opens avenues for theorizing in new topic areas with both qualitative and quantitative opportunities (Eisenhardt, 1989). This work relies on qualitative evidence from participant observation combined with secondary data sources. Regarding theory-building, Eisenhardt (1989) emphasize describing the value of "the frequent overlap of data analysis with data collection" (p. 538). One way to allow for this overlap is through field notes in which researchers stay close to the data and process. Such an approach was followed throughout this study, where I maintained a research diary from each working group meeting, including subsequent reflections. More detail on the data collection process and considerations can be found in section 5.1. While crypto-assets are developing at rapid speed across various industries (Ioannou & Demirel, 2022; Ozili, 2022), the focus in this work is concerned with the application of the technology within financial service regulation and specifically within European financial service regulation.

4.3.1 Field Setting

As the chapter on *strategic research sites* in the book "The Social Construction of Technological Systems" (Douglas et al., 2012) noted, it can be difficult to study an emerging phenomenon from all angles. It is therefore the task of the researcher to choose a location in which the phenomenon can be explored. Given the emerging commercial field of crypto-assets, I strategically chose to locate myself in a working group setting exposed to the interactions among institutional actors from the organizational field and policymakers from the institutional environment. Institutional actors from the institutional environment in this study refers to actors on the supranational level such as policymakers from directorates in the EC. In this way I was exposed to key aspects regarding both industry and technology developments on the field level (technology advancements, emerging applications, and business models) and top-down policymaking initiatives (strategies and actions toward a governance framework as well as societal considerations of the impact of crypto-assets). The choice of research site allowed me to be embedded in the contextual heart of the policymaking process around crypto-assets. Another reason for this chosen nexus of involvement centers on the enormous focus on possible economic, social, and political implications of the technology from nation states and governments around the world (Adrian & Mancini Griffoli, 2019; Carstens, 2019). In that sense, this in-between setting provided the means to gain access to the construction of knowledge and actions from the supranational level through both direct interactions with policymakers and through secondary sources reporting about discussions on the supranational level. In that sense, this intersection provided an opportunity to study the framing processes that different actors engaged in over time.

More specifically, the working group provided the location and environment to collect data. Engagement in this group provided outstanding valuable insights into the way meaning was

constructed among working group members and policymakers as they engaged in discussions about and related to crypto-assets and the economy. Through field engagements, crypto-asset representatives of different organizations inquired into the underlying thought processes of various public statements and position papers from policymakers and other institutional actors during working group meetings. These reports were available through public sources; however, to explore why certain framing dynamics developed and stabilized, the working group meetings provided the environment and means for policymakers to explain their interpretation of the technology in detail and to comment on why certain actions were taken.

The working group meetings occurred bimonthly with physical representation in Brussels the first year but, due to the COVID-19 outbreak in February 2020, working group meetings moved to a virtual platform. Yet, the structure of the meetings stayed the same. Every meeting opened with remarks about policy updates presented by the group organizer and an introduction of new working group members. The first part of every meeting included only working group members for internal discussions usually dedicated to understanding who (policymakers) was attending that day, the attendees' background, and their role regarding policymaking on crypto-assets. Discussions also covered what topics would be relevant to explore with the policymakers and what the agreed viewpoint was from the working group. This alignment was sometimes clear; other times, it was less clear, which required additional time to unfold the disagreement. The second part of the working group meetings was directed toward meetings with policymakers or other representatives from the institutional environment (e.g., from member states). Typically, every working group session included two meetings of about 1 hour duration each, with a lunch or coffee break in between. In concluding every working group meeting, a final round of remarks and further considerations for action was always prioritized internally among working group members and the organizer. An example of working group meetings' agenda can be found in Appendix 1.

An important consideration when studying the construction of meaning over time is to be aware of how the context develops as well. The working group meetings were organized to initially reflect and discuss regulatory issues concerning crypto-assets (back then referred to as virtual currencies (vcs); see Appendix 1). In that sense, every working group meeting was *up to date* with both policy and market developments. This provided a foundation for working group members to stay informed about decisions or discussions occurring among policymaking bodies and facilitated rich internal and external discussion sessions. The external meeting sessions with policymakers often captured a certain framing mechanism temporally. Past, present, and sometimes possible future activities were debated as part of the working group members' inquiry into why certain interpretations about the technology and consequently framing efforts developed. Based on these insights, a rich empirical dataset emerged over three years of participation.

4.3.2 Case Context

As beforementioned, this is a case study of institutional work around policymaking on crypto-assets in the EU, in which the organizational field of crypto-assets and its immediate institutional environment is presented as the unit of the analysis. The role of the industry, in the working group,

was to serve as a collective voice for the organizational field of crypto-assets and impact potential policy actions in favor of the industry. The organizational field is here referred to as "those organizations that, in the aggregate, constitute an area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (DiMaggio & Powell, 1983, p. 148). Within the working group setting, representatives of the industry participate in what is referred to as 'institutional work' within institutional theory (Lawrence & Suddaby, 2006) where activities aim to maintain, create and/or disrupt institutions arrangements within an EU working group setting.

The working group was originally formed in 2015 with the objective to engage with policymakers as the policymaking process around crypto-assets had started in Europe. During my participation (2019-2022), more companies became members, and by 2021, the working group represented nearly every type of crypto-asset service available in the market. The group comprised a diverse field of companies, representing nearly every type of business in the crypto space such as wallet providers, exchange platforms, payment processors, market makers, and analytical platforms. Representatives were from a variety of European countries and collectively they formulated an organizing vision (Swanson & Ramiller, 1997) concerning the formation of policy and regulation of crypto-assets. While the internal meetings in the working group were more informal, external meetings with policymakers were very formal in nature. The focus element of the study is on the interactional framing processes among and between institutional actors where the case is bounded in and around the discussions in the working group setting. Therefore, it is the working group that sets the agenda for the meetings, and the negotiation of meaning is thus bounded to the development of these discussions. The context of this case focuses on the evolution of framing of crypto-assets from the perspective of the industry represented in the working group. The following sections aim to present an overview of the different institutional actors that were part of the frame contest or appeared as reference points during the discussions in the working group setting.

Different institutional actors were relevant throughout the policymaking process. The following only represents actors that were encountered either through direct interaction in meetings or through the relevance of their position papers made public. For example, the dataset collected includes only four of the directorate-generals (DGs) in the European Commission as these were part of negotiating meaning in this case. In addition, actors may appear consistently throughout the analytical chapters or be involved only in specific examinations of frame contests. Table 3 displays the composition and objectives of each relevant actor, which will be elaborated upon in the following sections. The identification of relevant actors functions as preliminary analysis to the exploration of framing over time. The actors were identified through the snowballing method, described in section 4.5.2. Appendix 16 outlines the official websites that have been drawn upon in extracting official group objectives. Appendix 2 provides an overview of field observations, engagements with guests, and the relevant topics of the working group meetings.

Table 3: Composition of Relevant Social Actors

Relevant Social Actor	Composition of group members	Objectives
Working Group	Crypto-Asset Service Providers (CASPs) registered in the EU, representing services such as: - Wallet providers - Exchange platforms - Payment processors - Market makers - Transaction-tracing companies	To advocate for regulation that will promote innovation in the crypto-asset ecosystem.
The Policymakers	European Commission - DG Grow - DG Connect - DG Justice - DG Fisma	To initiate, shape, propose, and enforce new EU laws and policies
The Law Makers	European Parliament groups - The Greens/European Free Alliance - Committee on Economic and Monetary Affairs (ECON)	To adopt European legislation (together with the Council). Additionally, the EP actively shapes legislation through reports
	Council of the European Union - EU member states	To represent member states; has formal role to adopt European legislation (together with the Parliament)
European Supervisory Authorities (ESAs)	European Securities and Markets Authority (ESMA) European Banking Authority (EBA) European Insurance and Occupational Pensions Authority (EIOPA)	To ensure effective and consistent regulation and supervision across Europe and advice EU bodies in the legislative process
Monetary Authorities	European Central Bank (ECB)	To establish European monetary policy, rules governing the issuing of the Euro, and price stability within the EU
International Intergovernmental Bodies	G20 Financial Action Task Force (FATF) Financial Stability Board (FSB) Committee on Payments and Market Infrastructure (CPMI)	To promote and safeguard international financial stability
EU Blockchain and Observatory Forum	European Parliament pilot project. Run by the Commission's DG Connect unit; American ConsenSys led the first edition through 2019 by winning a public tender	To produce and make recommendations on the role of the EU regarding blockchain technology and establish a center for expertise

The Working Group. In efforts to educate European regulators in shaping regulation that will promote innovation in the blockchain and crypto-assets space (POS WG1 [Position Paper for Working group 1]), crypto-asset companies joined efforts and created an official EU lobbying group dating back to 2015. The group is composed of a diverse group of companies, representing nearly every type of business in the crypto space such as wallet providers, exchange platforms, payment processors, market makers, and analytical platforms (POS WG1). Throughout the research, the working group grew in the number of members. Upon membership request, new potential members were asked to present their company and their goal in joining the group before a democratic vote among current members took place. With this growth, the group expanded to encompass nearly every crypto-asset business model available on the market by 2019. The development of this actor formed around shared meanings concerning the nature of the technology, legitimization of the industry and the commitment towards shaping technology agnostic regulation. The group believed in an ecosystem wide regulatory approach where certain business models or technology architectures where not to be singled out. As such, no coin, type of service provision or architecture were to be promoted over others during discussions with policymakers.

In general, the way the working group operated can be split into three areas. The first was internal discussions of the technology, market operations, and ways to approach policymaking on these accounts. Within this setting, many interpretations were shared and debated. The organizer of the working group came with enormous experience in the area of financial service regulation and the history of many directives. This experience was used when group members had questions about certain elements of the policymaking process. Also historic elements were used to explain how policymakers might approach the field of crypto-assets. Besides discussing interpretations, this internal setting also discussed group strategy. Who should the working group invite to the meetings? Which position papers should they create and push to policymakers? What should their opinion be on global stablecoins? These strategic elements were usually discussed at the end of every session so next steps could be followed up upon through email correspondence. The second area of operation was external meetings with guests. Most of these meetings were with policymakers in specific DGs in the European Commission. These discussions were usually more formal; however, group members were not reluctant to state their honest opinions. For instance, in a working group meeting in early 2021, a working group member commented on the knowledge capacities of regulators stating “you can see time and again that regulators are not really adapt in understanding technology and what challenges it brings” (WGm6, February 2021).

The third focus was on issuing position papers on different topics related to the policymaking of crypto-assets. Different members worked on different papers, but every paper was always approved by all members. These papers laid the groundwork for the discussions with policymakers where specifics could be discussed, and the position papers sent out following the meetings. Between 2019 and 2022, the group gained increased attention from policymakers as it represented the knowledge of the new industry, which was noticed among policymakers, expressed through statements such as “we value very much this group here. as it represents a really good picture of the crypto ecosystem” (PM6, September 2020 [Policymaker 6]). Over time,

instead of the working group inviting policymakers, policymakers began to ask for meetings with the working group through word of mouth or from other policymakers. In addition, members of the working group were often called upon by national regulators to provide input on certain initiatives. During the policymaking period, the working group had become a respected voice through their networking activities (Fawcett & Daugbjerg, 2012; Schneider et al., 1995), and in that sense, seen as a relevant actor in framing crypto-assets from the perspective of the new industry.

The Policymakers. The European Commission's main responsibility is to initiate legislation (ec.europa-eu). In that way, it operates in the stage prior to that of the Parliament and the Council and therefore engages many stakeholders in the process of creating policy proposals. Within the Commission there are six departments, also referred to as Directorates-General (DGs), which have distinct responsibilities[5]. In this research, the DGs engaged with through working group meetings are DG GROW, DG CONNECT, DG JUST, and DG FISMA (see Appendix 2).

DG GROW is a department looking at the internal market, industry, entrepreneurship and SMEs in Europe.[6] This group promotes competition throughout the European market and from engagements in the working group meetings, it was clear that the group saw opportunities in crypto-assets. This was evident throughout working group meetings as a policymaker stated, "I was the first to person to try to convince people that cryptocurrencies are actually real currencies and here to stay*"* (PM2, March 2019). Overall, the knowledge of the crypto-asset industry in DG GROW was rather high compared to meetings with other guests. An example to be drawn upon is a discussion between a policymaker and the working group about the classification and definition of crypto-assets: "A crucial point is how to treat utility tokens for future legislation… should there be a differentiation between ICOs and other types*"* (PM2, May 2020). In that way, through meetings, this group expressed an understanding of the way the decentralized token economy works.

DG CONNECT is a department looking at communications networks, content, and technology.[7] This group was invited to working group meetings due to their engagement with the blockchain technology throughout Europe and the connection with the EU Blockchain Observatory and Forum. In that way, as explained in one meeting, they are "raising knowledge on the threats and opportunities of these technologies" (PM7, May 2019). In their work on blockchain technology, the focus was on building skills in the domain throughout Europe, yet there were also concerns regarding resources. For example, in a working group meeting, a policymaker asked the working group to explain "how much effort will it take to trace something in the public blockchains, financially, analytically?" (PM7, July 2019). In that way, while also looking at opportunities, many unknowns were still apparent from meetings with this unit.

[5] ec.europa-eu, accessed 01/03/2024

[6] https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/internal-market-industry-entrepreneurship-and-smes_en

[7] https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/communications-networks-content-and-technology_en

DG JUST is a department looking at justice and fundamental rights, and consumers.[8] This group engaged with the working group on General Data Protection Regulation (GDPR) compliance issues as stated in a working group meeting; "how to implement GDPR in the context of blockchain*"* (PM4, February 2019). The focus was therefore oriented toward understanding the processing of personal data on a blockchain and what potential consequences this could have on the existing GDPR enforcement. Regarding the applicability of EU law on crypto-assets, this unit contributed towards the Commission's work on a *"*balanced and harmonized*"* approach to deal with crypto-assets (PM5, December 2019). In addition, the group also considers what actions to take in terms of possible implementation of the FATF travel rule and "assess how the GDPR aspects shall be taken into account*"* (PM5, December 2019).

DG FISMA is a department looking at financial stability, financial services and capital markets union[9]. In their 2020-2025 strategic plan,[10] the unit states their plans regarding initiating work on a regulatory framework for crypto-assets. The result of this initiative was also discussed through working group meetings: "We are about to put on the table a proposal for markets in crypto-assets*"* (PM6, September 2020). This group was thus very relevant in drafting the proposal of MiCA and the additional follow-ups concerning specific elements of the regulation. During the research, this unit was the most represented throughout working group meetings, which reflects the relevancy of both working group members' interests in understanding and affecting the work of the unit, but also policymakers' interest in getting feedback from the industry.

The Lawmakers – **The European Parliament**. The overarching objective of this group is to adopt European legislation together with the Council. The European Parliament consists of 705 members (MEPs) representing all member states in the European Union. The MEPs are elected in member states every 5 years and can sit as independent MEPs or join political groups11. Throughout this research, the groups referred to throughout meetings or reports were mostly the Greens/European Free Alliance. In the last parliamentary election in May 2019, the Greens experienced enormous growth and became the fourth largest group in the European Parliament. This was noticed during working group meetings, where the discussion regarding energy consumption in decentralized networks led to a member pointing out how "the Green party was successful in the European Parliament election in May, so this topic will get even more attention" (WGm1, May 2019). The aim of the group is to foster sustainability throughout Europe and therefore represent a critical voice in the discussions around the environmental impact of some consensus mechanisms in crypto-assets. Besides political groups, MEPs also join committees that are specialized units. The committee of relevance to this research is the Economic and Monetary Affairs Committee (ECON), of which the rapporteur and shadow rapporteur are members. The ECON committee was in charge of discussing amendments to the legislative proposal from the Commission and issuing reports on the topic. In that way, both the Greens and ECON constitute

[8] https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/justice-and-consumers_en

[9] https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/financial-stability-financial-services-and-capital-markets-union_en

[10] https://commission.europa.eu/system/files/2020-10/fisma_sp_2020_2024_en.pdf

[11] europarl.europa.eu, accessed 01/03/2024

different actors, yet they both represent the overall relevant parliamentary group. Throughout the analysis, it is made clear if one group posits a radical interpretation of technology that it is distinct to that group.

The Lawmakers – **Council of the European Union**. The Council of the European Union consists of one representative from each member state. The representative depends on the type of legislation that is being discussed so that ministers operate within their areas of responsibility. It operates together with the European Parliament in adopting legislation in the European Union and its presidency shifts every 6 months12. The Council is included under the main group of law makers despite the understanding that the Parliament and the Council make up two different legislative bodies that have to agree on the legislative proposal. Throughout working group meetings, different representatives were met with due to the rotation of presidency.13 It was clear that over time, countries in charge of the MiCA file wished to close it (reach agreement between member states) within the time of their presidency, which is 6 months. Yet, as pointed out "MiCA is a file full of difficult concepts ..the aim is to have clarity" (LM1, February 2021 [Lawmaker 1]).

The Supervisors. The overarching objective of the European Supervisory Authorities group, also referred to as the ESAs, is to ensure effective and consistent regulation and supervision across Europe. Despite different responsibilities, they share the same goal in monitoring financial innovation and providing advice to the European Commission throughout their examinations. The ESAs consists of the following three supervisory groups: (a) The European Securities and Markets Authority (ESMA), which is responsible for securities and capital market supervision, (b) The European Banking Authority (EBA), which is responsible for supervision of the European banking sector and focuses on maintaining financial stability in the EU, and (c) European Insurance and Occupational Pensions Authority (EIOPA), which is responsible for ensuring public confidence in the EU's insurance and occupational pensions sectors. These supervisory groups began operations on January 1 2011 because a new supervisory model following the financial crisis of 2008 was needed in Europe14. Throughout the analysis, the ESAs constitute a relevant actor even though ESMA and EBA issue opinion reports separately (EBA, 2019; ESMA, 2019). That is because, collectively, these subgroups share the same overarching goal regarding sufficient regulation in the EU. This group's position papers were often the main reference points for the internal discussions among working group members. The public reports were brought up and debated throughout working group meetings because these provided the initial advice for policymakers to create their interpretation of crypto-assets.

The Monetary Authorities. The European Central Bank acts as the monetary authority in Europe with the objective to establish European monetary policy and rules governing the issuing of the Euro and price stability within the EU. In other words, it protects the Euro, the European financial infrastructure, and instruments. In doing so, its tasks involve defining and implementing monetary

[12] consilium.europa.eu, accessed 01/03/2024
[13] https://www.consilium.europa.eu/en/council-eu/presidency-council-eu/, accessed 01/03/2024
[14] finance.ec.europa.eu, accessed 01/03/2024

policy, maintaining the payment systems (TARGET2), issuing banknotes, maintaining financial stability, and performing banking supervision. Besides these concrete tasks, the ECB must, by law, also perform a consultative role as its opinion is required for EU legislation that falls within its competence15. In this case study, the role of the ECB regarding framing crypto-assets started in May 2019 as the group issued a public position paper on the topic (ECB, 2019). This report framed crypto-assets as different to fiat money in which the provision of crypto-asset services should be followed closely and regulatory assessments made: "Still, there could be avenues for the regulation, at EU level, of crypto-assets business at the intersection with the regulated financial system, i.e., aimed at crypto-asset 'gatekeeping' services, namely crypto-assets custody, and trading/exchange services" (ECB, 2019, p. 29). Throughout working group meetings, discussions circulated around the way the ECB viewed crypto-assets, for instance, in regard to classification: "They [the ECB] want to put crypto-assets outside European law" (WGm10, March 2019). The ECB's role in the financial ecosystem in Europe is one of importance, and therefore the opinions issued publicly matters in the negotiation of meaning.

The International Intergovernmental bodies. The G20 or Group of Twenty is an intergovernmental forum composed of the world's largest 19 economies as well as the European Union. It was formed after the global financial crisis in 1999 and operates to address major issues related to the global economy, such as international financial stability, climate change mitigation, and sustainable development[16]. One of the bodies that provides advice to the G20 is the Financial Stability Board (FSB), which was officially formed at a G20 summit following the 2009 financial crisis. It is a global organization that promotes international financial stability and coordinates national financial authorities and international standard-setting bodies while providing recommendations to develop strong financial regulation[17]. The group consists of 68 member institutions, including several central banks and supervisory authorities and is hosted and funded by the Bank for International Settlements[18]. The Bank for International Settlements (BIS) is owned by 62 central banks from around the world. Its formation dates back to 1930 attempts to settle the question of German reparation payments following World War I and developed into an international hub for central banks. The organization's main objective is to support the world's central banks and other associations in their work toward monetary and financial stability[19]. They pursue this through a research organ that investigates trending topics and makes research available through BIS publications while also collaborating with academia and pursuing peer-reviewed publications. Beyond the research, BIS also acts as a bank for central banks. That is, it provides services from postwar reconstruction and financial cooperation reparations to banking services such as opening accounts, launching funds, and offering new instruments to assist the functions of a global financial system for central banks[20]. The organization has played a significant role in shaping the world's monetary and financial system.

[15] ecb.europa.eu, accessed 01/03/2024
[16] g20foundation.org, accessed 01/03/2024
[17] fsb.org, accessed 01/03/2024
[18] bis.org, accessed 01/03/2024
[19] bis.org, accessed 01/03/2024
[20] bis.org/history, accessed 01/03/2024

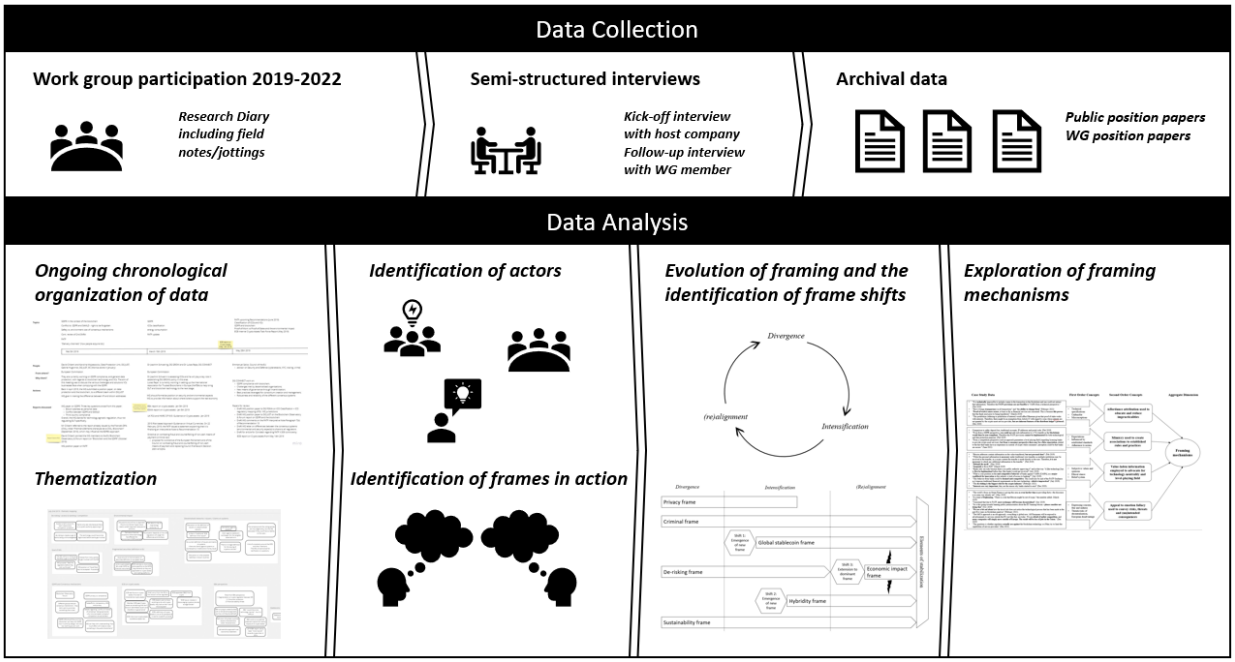
Together, the G20, the FSB, and the BIS form a relevant actor that shares the objective to promote and safeguard international financial stability. While in particular FATF was a relevant group on in its own due to the Travel rule, these groups are merged due to the impact they had on policymakers decision making progress in MiCA regarding stablecoins, and in particular global stablecoins. In that way, their relevance is apparent following the announcement of Libra as pointed out in a working group meeting by a policymaker that regarding the Travel rule and Libra, "there are intense discussions at the international level, but also EU level" (PM5, December 2019).

The EU Blockchain Observatory and Forum. The EU Blockchain Observatory and Forum is a European Commission initiative to accelerate blockchain innovation and the development of the blockchain ecosystem and economy within the EU. The forum aims to help cement Europe's position as a global leader for this transformative new technology. The objective is to produce and make recommendations on the role of the EU regarding blockchain technology (eublockchainforum.eu). Its work addresses different themes related to blockchain technology and it disseminates information through workshops, video conferences, and/or research reports. During the first edition from its creation in 2018, the forum was run by ConsenSys, a leading American Ethereum software company (consensys.net). The responsibilities were to facilitate activities around four areas: mapping, analysis and reporting, education and knowledge sharing, and events and interactive discussions. It is important to keep in mind that the results of these activities are not the opinion of the European Commission, but the opinions of the content creators themselves. In that sense, this forum provides a type of platform for different types of engagements with blockchain technology. Throughout working group meetings, especially in the beginning, this group kept being referred to by guests (see Appendix 11 for example). The relevancy is thus to be found in how this group published material on crypto-assets, which is then picked up by policymakers and part of their interpretation process.

4.4 Data Collection

The following two sections provide a transparent account of the data collection process (including the types of data sources), the data analysis strategy, and the considerations and reflections regarding data quality. Figure 2 visualizes the research journey in connection to the overall data collection and data analysis strategy employed.

Figure 2: Research Journey



Data collection took place both in a physical setting and a virtual setting, which will be elaborated on in the next section. Data were collected over three years from early 2019 to the beginning of 2022, with some secondary sources dating back to 2018. The core of the dataset gathered consists of participant observations throughout 26 working group meetings (see Appendix 2). The primary source of data consists of my own observations during working group meetings supported by meeting minutes drafted by the assistant organizer during meetings and circulated post meetings. While the meeting minutes provide contextually rich summaries, in terms of content, of the discussions, direct quotes as well as signs of emotions from actors were noted down in my own research diary. Secondary data sources were used to triangulate the discoveries and provide additional data points unattainable in working group meetings. The empirical body is obtained to provide evidence from different perspectives through the interpretive process. In accordance with Walsham's (1995) note of being aware of the role of the researcher in interpretive studies, mindfulness regarding the subjectivity involved in participant observations is crucial, as he notes, "interpretive researchers are attempting to assess other people's interpretations, filtering them through their own conceptual apparatus, and feeding a version of events back to others, including in some cases both their interviewees and other audiences" (p. 77).

While my engagements in the field provides a unique insider view to the developments, subjectivity is inevitable both in the data collection and the analysis process. To justify interpretations, rich descriptions have been used throughout the analysis (Walsham, 1995). Besides the observational foundation of the research, position papers from both the working group and from public groups were gathered. These include actions, statements, and developments in ongoing debates among policymakers, member states, and/or other actors, external to my own observations. An example of this is the 2019 position paper by the ECB. While the working group never met directly with a representative from the ECB, their position paper and framing of crypto-assets was still a point of heavy debates in working group meetings. Therefore, these types of data points were noted down and used as evidence to support the analysis of working group responses. Only data sources discussed in working group meetings are included in the case to bound the dataset around the institutional work activities engaged in by the working group.

The data collection process spans over a critical time in the development of policy frameworks for crypto-assets. Beginning my PhD journey in early 2019 when the crypto-asset market was still somewhat immature, non-systemic, and most discussions were concerned with money laundering and terrorist financing, the topics and importance of the area shifted drastically just 6 months into my research. The major turn took place when Facebook announced the Libra digital currency project in July 2019 (later renamed to Diem). This announcement was a point of no return in regards to studying meaning constructions, and the research advantageously builds on the collection of data prior to and after this announcement. In addition to the July 2019 activities, the COVID-19 situation also pushed everyday activities online, cash-use declined tremendously, and the outlook toward a *cashless society* had never seemed closer (add ref). Further, 2020 was a year for large incumbent industry players to get involved in exploration and developments of crypto-assets. The big PayTech players, Visa, MC, PayPal, Tencent, and Alipay all initiated services or products focusing on the crypto-asset market (add ref). The span of data collection thus captures the *years of disturbance and change* in between the blending of new and old industries (Davis & Marquis, 2005), and provides for rich understanding of the emergence of policymaking regarding crypto-assets as well as how and why actors strategically employed certain framing mechanisms.

4.4.1 Field Observations

Over the course of three years, I attended bi-monthly (and sometimes extraordinary) working group meetings. In total, 26 working group meetings were attended throughout the study. Most meetings spanned between 4-6 hours with the exception of a handful that ended earlier because of cancellation of a meeting. A total of 114 hours of field work was conducted, resulting in 110 pages of field notes (see Appendix 3 for example). During the first year, from February 2019 to March 2020, meetings took place in Brussels. Following the worldwide outbreak of COVID-19 in March 2020, meetings were organized virtually throughout the remaining part of the study in spring 2022. Undoubtedly, this changed the observational characteristics as expressions and physical gestures were more difficult to observe. Yet, the advancements of telecommunications allowed for video meetings that (to a certain extent) enriched the author's observations. The virtual format also inhibited the informal conversations that took place before and during lunch

breaks. However, other benefits emerged through the online format (e.g., increased attendance as more working group members were able to participate because of ease of access). Additionally, my role as participant observer changed as the informal settings disappeared. In some ways, the virtual format allowed for an even more neutral observing role. However, during introductions at every meeting with guests, I made attendees aware of my role as a participant observer and my affiliation with the university and the company. An example of field notes is provided in Appendix 3 to illustrate the rich observational data.

Research Diary. From day 1 of entering the working group, I created a research diary. The diary consisted of field notes, also referred to as *jottings* (Emerson et al., 1995) about what went on in the meetings such as quotes from discussions, short explanations of a particular topic, references to other materials as well as my own interpretation of the *mood* in the room. For example, quite often working group members showed frustration or a sense of hopelessness, which I made sure to consider, accompanied by a precise description of what went on. In combination with meeting minutes, the diary provided the grounds to write in-process memos following the meetings as a way to both reflect on the meetings and proactively initiate analytical categorization (see example in Appendix 4), i.e., thematic mapping (Corbin & Strauss, 1990; Miles & Huberman, 1994). Practically, the memos were thematically organized on an ongoing basis in the Miro software (see example in Appendix 5). These memos and mappings provided the means to find patterns between data points over time as topics reoccurred or interpretations changed. In that sense, this mapping was also a sort of record-keeping of what went on, which, through further analysis, then turned into how and why things occurred as they did. Over the three years of observation, monthly working group sessions resulted in about 110 pages of field notes (jottings) and 150 pages of in-process memos.

4.4.2 Interviews

While the primary source of data was field observations, two semi-structured interviews were conducted in the process. After many informal conversations and discussions during in the first month at the host company, I conducted an official kick-off interview with a project manager for one of the blockchain projects. The aim of this interview was to get an overall understanding of the challenges met in the process and which type of problems still existed. The interview formed around the main topic: What are the learnings of designing, developing, and implementing a blockchain based micropayment solution from the perspective of a Nordic payment service provider? While the interview itself is not part of the data analysis, it contributed to the initial problematization that is part of the engaged scholarship research process. Like the initial interview, a follow-up interview was conducted with a member of the working group in May 2022. The aim of this interview was to cross-validate the author's findings and gain additional insights into the establishment of the working group. During the interview, additional information was shared concerning the output and possible implications to the crypto-asset industry. This information is included in the analysis of implications. Prior to both interviews, interview guides were sent to the interviewees. The length of the interviews were 35 minutes and 67 minutes, respectively, and both were recorded and transcribed. Appendix 6 shows an overview of the interviews.

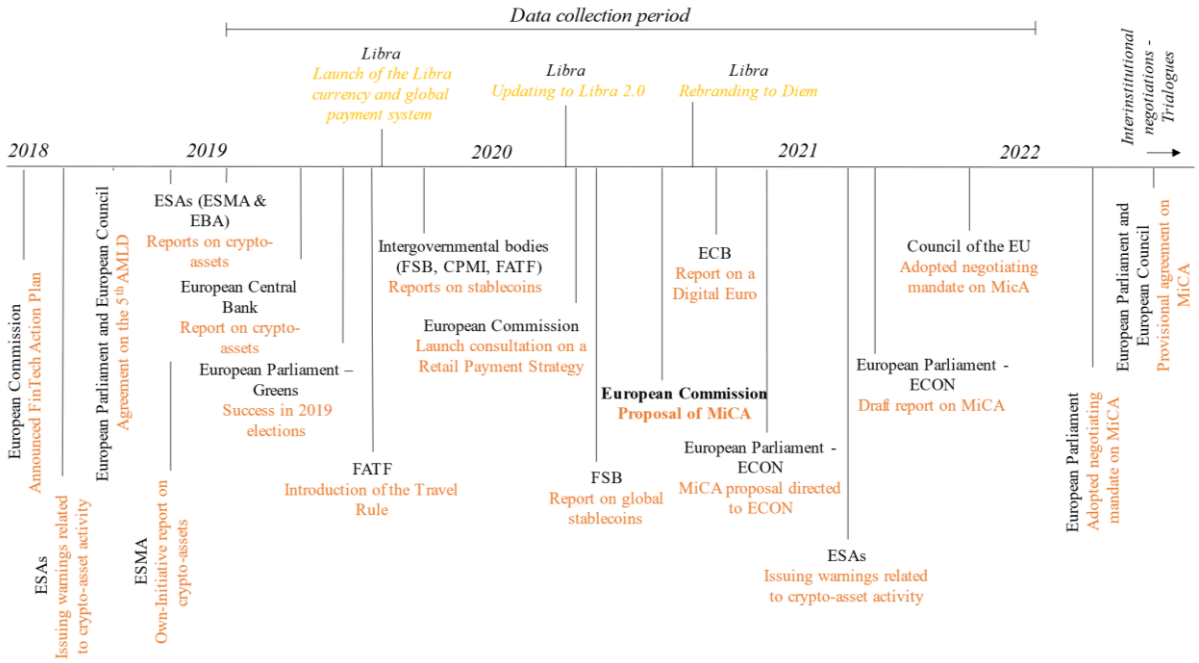
4.4.3 Secondary Data Sources

In addition to the field observations and interviews, this study also uses archival data: public position papers by specific institutional bodies and position papers drafted by the working group. In total, the data set builds on 10 public position papers and 15 position papers by the working group. The public reports collected in this study configure as data points for the analysis of working group responses to specific issues. The reports detail specific institutional actors' understanding of crypto-assets as well as proposed policy actions. The discursive strategies of these reports support the analysis of framing choices taken by the working group in their interactions with policymakers. These reports provide an excellent gateway to understand interpretive processes within an institutional setting where, the secondary sources provide an additional perspective in combination with my field observations. The aim is to illuminate a broader understanding of the process and the perceptions about the technology from different actors to ultimately examine the framing mechanisms used by the working group throughout their institutional work activities. The working group's position papers are used primarily to complement the analysis of the evolution of framing over time. In other words, they provide rich information about specific issues (e.g., consensus mechanisms). Appendices 7 and 8 show an overview of these data sources. The secondary sources are drawn upon only because references were made to these groups. In that way, the reports were mentioned throughout the working group meetings and constitute an important part of the interpretive process of the working group itself as members debate the context and actions proposed in the reports.

4.4.4 Summary of Data Collection

This two-fold data collection strategy—participant-observation and archival data—allowed me to build a vast body of empirical data. The complexity of this study is supported by the depth of the data, in which much of the data is also used to chronologically organize what happened and when. Figure 2 exemplified the research journey and how data points, including the different types of data collected, were structured to create the foundation for further analysis. Figure 3 provides an indicative timeline of the EU institutional environment during the data collection period. The timeline illustrates the types of reports drawn upon in this study and overall initiatives from actors of the working group's immediate institutional environment.

Figure 3: EU Indicative Timeline



Notes. ESAs = European Supervisory Authorities; ESMA = European Securities and Market Authorities; AMLD = Anti-money Laundering Directive; EBA = European Banking Authority; FATF = Financial Action Task Force; FSB = Financial Stability Board; CPMI = Committee on Payments and Market Infrastructure; ECB = European Central Bank; MiCA = Markets-in-Crypto-Assets; ECON = European Parliament Committee on Economic and Monetary Affairs.

4.5 Data Analysis Strategy

This section deals with the analytical considerations made throughout the research. It includes the reflections made during data collection and the tools I used in the analysis. From the first working group meeting, I explored issues with an open mind which allowed a broad aspect of themes to develop. Similarly, the kick-off interview was a way to allow exploration and to develop a strategy that would allow me to engage with the main problematics faced by the host company according to one of the principles of 'problem formulation' in engaged scholarship (Van de Ven, 2007).

4.5.1 Evolving Structure of Working Group Meetings

The following aims to provide insights into the way the working group meetings were organized, which will serve as the foundations to understand the data analysis strategy applied.

Working Group Meetings Between 2019 and Fall 2020. Between the beginning of 2019 and fall 2020, working group meetings were organized very strategically along two rationales. The first one was to invite specific policymakers that had crypto-assets on their task list based on either their location in the conversations (which policy group they belonged to and what their agenda was) or the national supervisors. The goal set out by the working group was to understand how the guests perceived different themes related to crypto-assets and to get insights on possible actions that were lined up in the future. Prior to inviting guests, these invitations were discussed

and agreed upon among working group members and organizers at the end of every working group meeting. The second rationale focused on understanding the different public reports that were issued and mainly targeted the issues brought by the technology (EBA, 2019; ECB, 2019; ESMA, 2018; ESMA, 2019). To deep dive into the specific issues of the reports, representatives from these groups were invited. To summarize on the two rationales, meeting invitations were organized either to explore the general themes and actions from stakeholders assigned to look into it (e.g., possible GDPR issues), or to investigate and unfold specific thought structures that shaped the public reports. In both cases, the agendas of the meetings were discussed in the working group before the arrival of the visitors. In that way, a preliminary categorization of themes developed concurrently with data collection (Glaser & Strauss, 1967), specifically from my observations of meetings and issues brought forward in public reports.

Working Group Meetings Between Fall 2020 and Throughout 2021. In September 2020, the first MiCA draft was published by the European Commission (European Commission, 2020). This draft proposal automatically structured discussions around specific articles and provisions. From fall 2020 on, the working group started to examine particular issues that needed to be addressed with policymakers. As a result, multiple position papers were developed to put forward the opinion of the industry (Appendix 8). Alongside position papers, meetings with policymakers went on and the focus narrowed to targeting specifics of the draft. The goal was to debate these with stakeholders involved in the policymaking process (rapporteurs, MEPs). Many of the themes categorized earlier continued into this new phase, but some also became less important, while new ones emerged. As the drafting process continued among policymakers, different changes were made to the MiCA proposal. These recorded changes were accessible through public sources, which were then discussed in the working group meetings, yet it was not always possible to understand why certain directions were taken. In support of official statements and actions, my observations within the working group therefore led to rich explanations of the reflections and actions policymakers made in the process of drafting the regulation. These observed dynamics represent what Purdy et al., (2019) refer to as "the construction and negotiation of meaning through interactions" (p. 410).

Overall, the dynamic nature of the empirical data set called for a structured analytical approach. Going into depth on the analytical journey, the analytical operations are divided into four parts. The first analytical step was organized around a chronological sorting of data and identification of relevant actors. The relevant actors are presented in section 4.3.2 as part of the case context. The second analytical step explores the identification of frames negotiated in action, where the findings are illustrated through three periods of frame contests: divergence, intensification, and stabilization. The third analytical step investigates the frame shifts and rhetorical settlements (stabilization elements) whereas the fourth step of the analysis explores the framing mechanisms employed by the industry working group in their attempt to reinforce or change frames and actions of the contester. Each part will be expanded upon in the following sections.

4.5.2 Temporal Organization of Data and the Identification of Institutional Actors

The first step in the analytical journey started throughout the data collection process. A preliminary thematization strategy was chosen due to my longitudinal engagement with the data which required an overlap between the data collection process and analytical components to understand the data throughout the process (Eisenhardt, 1989). In addition to initiating thematic categorization following working group meetings (Appendix 5), an initial chronological timeline was kept. To chronologically thematize the data, a timeline in the Miro[21] software was kept to note down topics discussed, guests and why they were invited, actions identified if relevant to the discussions, reports discussed and a short summary of the meetings held that day (see snapshot in Appendix 9). Data were sorted in NVivo (see example in Appendix 10) for further coding procedures, which will be further elaborated upon. This sorting was done by grouping agendas, research diary notes and position papers into monthly datasets (Appendix 10). This preliminary data analysis was done in order to be able to move back and forth between the developments as the dataset quickly grew in size.

Following the chronological sorting explained and visualized in Appendix 9, I was able to identify and map groups that were part of the discussions. The context in the timeline provided me with a first set of groups including the policymakers that came to the meetings as guests and the groups behind the public reports issued. Additional groups were mapped based on the course of the observations where some groups' actions were discussed in depth (e.g., the role of the EU Blockchain Observatory and Forum; Appendix 11). Bijker (1995) refers to snowballing sampling as a method to locate relevant social groups (in this case labelled actors), that consists of "two rules: 'roll a snowball' and 'follow the actors'" (p. 46). While data in this dissertation has been collected primarily through observations and not interviews as Bijker (1995) referred to, the methodological solution can still be applied due to the vast amount of data, exposure by the working group and length of the study. The sampling and identification approach of this work is similar to the effect of the snowballing sampling as the working group discussions brought up issues and challenges in relation to a broad array of groups attributing opinions about the technology. In that way, the working group discussions *followed the actors* over a long period of time and allowed for both the appearance and disappearance of groups.

The first round of mapping identified 23 groups/actors (Appendix 12). Some actors were present throughout the entire process, whereas some appeared throughout the years (e.g., the Intergovernmental bodies). Therefore, to not lose sight of any potentially important groups, the list was narrowed down only at the end of the study. From 23 actors, 7 meta groups were derived to form relevant actors that shared the same overall objective within the group. The 7 meta groups were analyzed through three aspects: (a) a short description, (b) relevance of the artifact to the group, and (c) significance. Significance was based on factors such as political dominance, being continuously referenced/cited, or the fact that some groups (especially concerning policymakers) worked on a specific crypto-asset political file. An example of this process is visualized in

[21] Miro: The Visual Collaboration Platform for Every Team (Miro.com)

Appendix 13, where the European Banking Authority (EBA) and European Securities and Markets Authority (ESMA) group is merged due to their shared view on the approach to the technology. Some groups are more confined than others, for example, the group of monetary authority group has only one stakeholder, the European Central Bank (ECB). Some groups share an overall objective, such as to make laws, but have many different stakeholders within. This is accounted for through the descriptions of the groups in section 4.3.2. While the analytical aspect of the identification was based on the data collection, the description of the groups is supported by external references.

This first analytical step allowed me to organize the first section of the findings as 'stage-setting'. Especially the chronological ordering of data allowed me to provide a narrative of the initial discussions that took place regarding the fitness of the European regulatory landscape where the framing of the ESAs and the ECB configured as the main reference points during working group discussions. To initiate the analysis of the interactive framing contest that took place in the working group meetings, the first part presents the framing of these two relevant supranational actors (ESAs and ECB) identified upon engagement with the group in the beginning of 2019. The public position papers by these actors constitute the foundations for the discussions in the working group setting as I joined in the beginning of 2019.

4.5.3 The Identification of Frames Negotiated in Action

Following the first analytical step, a thematic analysis of the data was performed to distinguish the themes into more meaningful categories imposed by the data (Corbin & Strauss, 1990). A preliminary categorization of themes was created throughout the observations (Eisenhardt, 1989), as illustrated in Appendix 5. To build upon the preliminary thematization done through observations, a more in-depth categorization of themes was later performed (Corbin & Strauss, 1990) as shown in Appendix 15. By allowing themes to emerge from the data, a large amount of themes gathered over time. To analytically engage with the framing dynamics observed, that is explore frames in interaction, data was coded following the Gioia, Corley, and Hamilton (2013) method to uncover rich insights on the diagnostic, prognostic and motivational framing functions through first and second order concepts to derive at aggregate dimensions presenting the frames. Due to the chronological sorting of the data points, each reference was kept in NVivo and tied to a specific file showing the date and type of data source (see example in Appendix 10). This organization of data and codes was important to allow for the temporal analysis of framing dynamics where meaning construction cannot be isolated from the context.

Moving from the identification of frames towards the exploration of frame contests, an inspection into the differences across the framing of issues between actors was made. Throughout the engagements with the working group, effective issue-framing (Yanovitzky & Weber, 2020) was employed by the industry as agenda setters. Therefore, the issues raised and debated in meetings with policymakers often let to the identification of the different frame contests. Here it is important to note that institutional actors have distinct objectives and roles to fulfil within the European financial system. Consequently, meanings about crypto-assets were given from different political backgrounds. To account for this in the analysis, the framing dynamics captured focus on the

contest between the framing activities of the working group and actors from its immediate institutional environment with the working group as agenda setters on issues identified as important to the development of the crypto-asset field. For example, the working group brought up the issue of FATF's recommendation regarding the transfers of crypto-assets, which led to the identification of the criminal frame concerned about money laundering and terrorist financing. To illustrate the negotiation of meaning within these contests, the codes developed were refined to reflect who was advocating or contesting a certain frame. A frame contest was identified if there were any differences between the way actors diagnostically, prognostically and motivationally framed the issue regarding crypto-assets. Table 4 in the findings chapter presents an overview of the frame contests.

4.5.4 The Investigation of Frame Shifts and Rhetorical Settlement

To account for the evolution of framing, I committed myself to investigate framing processes over time through a dual process. As Davidson (2006) argued, researchers should focus more on the structural elements of frames and avoid only using *snapshots* of frames while also considering the institutional context of the frames. First, it is known that events in context provide deep insights into what forces shape the phenomenon (Van de Ven & Poole, 2005). This perspective recognizes how frames are bounded in the institutional context (Scott, 2001) and it is an attempt to connect macro-processes ongoing in the public sphere to the framing processes on the field-level. Again, the observational field notes provided a first indication of a timeline, which had been mapped in Miro throughout data collection (Appendix 9). Second, on the account of frame shifts, this analytical step builds upon the previous identification of frames and frame contests to map the shifts in the framing of crypto-assets observed from changes in the interactive framing dynamics between the working group and policymakers. These changes were observed through rhetoric, arguments repeated, and evidence used to support the construction of meaning. In addition, the types of process underlying each frame shift was identified according to the categorization of Snow et al., (1986).

Due to the timeline of my PhD, I was not able to continue my participation in the working group throughout the continued negotiations of MiCA, instead, I decided to include elements of stabilization as an example of closure mechanisms, or as labelled; rhetorical settlements in the policymaking process. Inspired by Bijker's (1995) concept of rhetorical closure, the analysis explored and took account of changes to the way definitions developed. Such closure elements were found both in the spoken language, but specifically in the MiCA draft where definitions were formulated and proposed directly.

4.5.5 The Exploration of Framing Mechanisms Employed by the Working Group

In efforts to explore the underlying elements of the institutional work activities engaged in by the industry working group where they construct, contest, and stabilize frames, I shifted the unit of analysis from the policy issue to the framing actions by the working group. In other words, to explore the actual *doings* of framing. The concept of a framing mechanism is here used to aggregate actions and to illustrate the ways in which the working group reinforced or tried to change both interpretations of and consequently policy actions towards crypto-assets. The

identification of framing mechanisms took place across issues and provides evidence on how the content within a frame was generated, in other words, how meaning was constructed in a compelling way in efforts to gain control of the narrative. The approach to analyzing framing mechanisms is purely inductive (Kaplan, 2008), and carried out through the Gioia et al., (2013) method from data to mechanisms. From first to second-order concepts, the type of actions and information used were grouped into aggregated framing mechanisms. These framing mechanisms should be viewed as elements supporting the discursive strategy of the working group in their framing of crypto-assets.

4.6 Data Quality

The analysis of this dissertation aims to convey the field experiences of my engagement with the working group. To convey these in a rigorous and reliable manner, the following describes and reflects upon the data quality measurements applied throughout the research.

First, the findings being conveyed are from the perspective of the working group engagements. A different field setting would have engaged with a different set of actors from another working group or institutional body with another goal. In that way, the data collected represent the process of being a participant observer in that specific research setting. One example of the ways in which this data represents only one perspective of the policymaking process is the recognition of events. While this research aims to account for exogenous and endogenous influences on the development of policymaking, there may have been additional processes that could have influenced directions that were not recognized within the working group discussions. Another example builds upon Klein and Myers' (1999) *principle of contextualization*, which emphasizes the importance of considering the social and historical contexts of the research setting. To understand the framing processes, I made efforts to pay attention to the situation and context in which the actors found themselves. This was done by recognizing that framing mechanisms should be conceptualized not only through how actors frame technology but by taking account of the institutional context they find themselves in. This recognition emphasizes how this study is about seeking meaning in context. As for choice of research method, the principle of contextualization, "requires that the subject matter be set in its social and historical context so that the intended audience can see how the current situation under investigation emerged" (Klein & Myers, 1999, p. 73). Participant observation allowed me to be present in the working group over a long time, instead of only gaining snapshots of the policymaking process (i.e., through interviews).

Second, while the chosen research method, participant observation, is of more objective character than interviews, the principle of interaction between me as the observer, and the working group involves critically reflecting on how the data were socially constructed through the interaction with working group members (Klein & Myers, 1999). It must be acknowledged that the working group members are interpreters as well, yet through the engagement, it is my interpretations of how actors interpreted technology and policy issues in the room. To minimize any confusion regarding the aim of the analysis and the research methodology, the aim is to investigate actors' interpretations of technology and policy issues in the policymaking process of crypto-assets using

an interpretive research methodology in which the complexity surrounding the human sensemaking process is captured (Kaplan & Maxwell, 1994).

In general, two quality measurements were used in actively seeking objectivity throughout the research process: reflexivity and triangulation. Reflexivity by the researcher refers to the acknowledgement of the researcher's own biases (Finlay, 2002). The research diary provided the means to constantly reflect upon the process, thoughts, and possible biases. In addition to the verbal interactions, my research diary also includes notes about the mood in the room in, written down in that specific moment and situation. Again, such interaction is an account of my own interpretation of working group members' reactions in a particular situation. As for possible biases, one specific acknowledgement throughout my engaged participation was the concern about observer bias (Roller & Lavrakas, 2015), in which a researcher can unintendingly influence the process and outcome. Reflecting upon this bias early in the process, I decided to not provide my own interpretations about the situation within working group discussions. This meant that I became more of an observer than a representative of my organization, but it reduced any possible impact on the research. I was able to make this choice also due to the reprioritization of blockchain projects at the host company in which focus shifted towards market observation.

Triangulation refers to the use of multiple sources of data (Flick, 2007). This quality measure is important in interpretivist work where additional data sources support and strengthen the claims made by the researcher. In this case, the meeting minutes, public reports, and position papers were used in conjunction with my own reflections about the data gathered from observations. In that sense, comparison between events referred to in working group discussions or statements made by various actors were triangulated through public reports and WG position papers. Despite the data quality measures applied, subjectivity is undeniably a part of the process.

Regarding the data quality measures in the data analysis, in interpretive work it is important to be able to convey field experiences in a truthful manner (Roller & Lavrakas, 2015). During the analysis, these field experiences were translated into written text in the form of field notes and in-process memos, which were then further analyzed. An important aim has been to provide rich description (Walsham, 1995) to allow readers to engage with the content. In that way, some content is more descriptive in nature, which then allows for an understanding of the interpretive process. In addition to the rich descriptions, careful consideration regarding the write-up of the analysis takes inspiration from works such as Golden-Biddle and Locke (1993) in the creation of a narrative that is appealing and convincing to readers. Through the rhetorical strategies of authenticity, plausibility, and criticality, the aim has been to outline both a descriptive account of what actually happened in these meeting rooms and to demonstrate that I had "been there" (Golden-Biddle & Locke, 1993, p. 163). As well as a prescriptive account of how and why interpretations were made, it is critical to emphasize my position as a participant observer such that the experiences are my own interpretations of what went on in the meetings.

The last reflection upon data quality has to do with the step of theorizing the findings. Inspired by Klein and Myers's (1999) *principle of abstraction and generalization*, this process involves conceptualizing and abstracting specific findings from the research to be discussed in relation to

theory. This involves taking aspects of the interpretations that were identified through contextualization and creating abstract categories to better understand how they relate to broader concepts. This was done through for example naming the frame contests in respect to the social issue at hand (for example criminality), instead of the specific policy issue (AML). In addition, while the examination of the framing mechanisms is from a specific context, it may be possible to identify patterns that can be applied to other contexts as well. This principle helps in thinking more broadly about the implications of the findings and how they might be relevant beyond the specific research setting.

CHAPTER 5. FINDINGS

The empirical findings are structured into three parts. Part one lays the groundwork for the findings by delving into the role of the working group and the state of policy work as I entered the group in early 2019. This part also presents a summarized interpretation of the two reports published by the European supervisory and monetary authorities in January 2019, which laid the foundations for the working group discussions with policymakers. Navigating through this first part sets the stage for findings presented in part two and three. Part two presents the evolution of framing during policymaking of crypto-assets in the EU. The empirical analysis led to the identification of seven frames: privacy frame, criminal frame, sustainability frame, de-risking frame, global stablecoin frame, hybridity frame, and economic impact frame, and two frame shifts: frame amplification and frame extension. In addition, the analysis of frame shifts led to the identification of three periods in which the frame negotiation process took place. These are labelled: divergence, intensification, and stabilization. Part three presents the evidence of the four key framing mechanisms employed by the working group to mobilize and influence policy action. These are: affordance attribution, mimicry, value-laden information and appeal to emotion fallacy. Throughout the chapter, authentic voices are integrated in the findings to illustrate views and minimize potential bias.

5.1 Part One: Setting the Stage

The role of the working group in relation to the early policy discussions, was to provide input to the process from an industry perspective. During this period, the working group focused on the creation and adjustment of public governance mechanisms that would be in favor of the crypto-asset industry. By establishing relationships with policymakers (Fawcett & Daugbjerg, 2012) and building trust (Schneider et al., 1995), the working group advocated for proportionate regulative measures of the industry as the work concentrated around "as much about promoting business opportunity as mitigating risk" (WGo, July 2019 [Working Group organizer]). In doing so, the main strategy of the working group concentrated on gaining insights into the interpretive frames of the policymakers and on educating policymakers in order to increase their knowledge base in favor of the industry. As the working group pointed out "we feed the regulators before they even pick up the pen" (WGo, July 2019). The point of departure for the working group in early 2019 focused on *what* problems crypto-assets created in different contexts and *how* they can be addressed with policymakers. Accordingly, the industry sought to engage in dialogues with policy members around the nature of the technology and existing European financial regulation.

In the early stages, it was unclear how the European Commission would approach the structural issue of decentralized security regulation, as "there is no EU law on securities, it is all on national level" (WGo, March 2019). From the view of the policymaker, "ICOs [crypto-assets] are economic opportunities that are non-systemic" where "the market is still too young and regulation risks hindering growth" (PM2, March 2019). It was clear that some policymakers believed in a balanced approach to regulation recognizing that "we are in the middle of a cultural change, we need to understand the technology before we can regulate it" (PM2, March, 2019) and that "they(member states) need to understand that we are not living in that trajectory any longer

[referring to traditional finance]" (PM2, March 2019). While the working group shared this perspective with the policymaker, a member of the working group tried to explain why policy analysis is very difficult at this point in time:

> There are so many new definitions that also overlap. In that way it is difficult to even talk about and it makes the process much harder! We have ICOs, we have virtual currencies, stablecoins, we have virtual assets, we have virtual asset service providers, custodial wallet provides. (WGm1, March 2019)

An area of concern was the rhetoric used to frame the new technology and the new roles and markets it enables. The policymaker claimed that this difference in rhetoric should be viewed as a political and ideological battle rather than a technical one and opined that "the entire debate about whether cryptocurrencies [crypto-assets] are currencies—from an economic point of view—I think it clearly is. This is not a question about economic debate, it is a question about belief" (PM2, March 2019). A similar comment about the political and ideological framing contest of crypto-assets followed in a later 2019 meeting. In this meeting, the working group was, together with a policymaker, discussing the ECB's publication on crypto-assets (ECB, 2019), in which a new definition of crypto-assets appeared. The policymaker stated that "everybody is creating a definition that supports their policy area. So, the classification of crypto-assets is more political than technical at this point in time" (PM1, May 2019). In essence, the main issue at this time was that the definitions and classifications were driven from fundamentally different perspectives (sometimes political, sometimes technical, and sometimes economic) in attempts to capture the new aspects of crypto-assets and comparing an emerging technology and its affordances to traditional financial assets and markets.

Throughout the analysis of the early stages of policymaking, a clear picture of this political framing contest emerged from the data. The contest was not about *whether* the emergence of crypto-assets needed to be addressed within EU financial service regulation scope, but more about *when* and *how* to apply appropriate measures to include crypto-asset markets. The policymaking of crypto-assets became a heated political battle within the working group setting, with the goal to debate the future of crypto-assets as an industry. The foundation for the discussions in the working group was the official reports issued by the ESAs and the ECB, in which the working group enquired into policymakers' interpretation of the reports, findings, and their perceptions about the technology.

Prior to presenting the specific frame contests and processes engaged by the various actors in Part 2, the following sub-sections provides a summarized interpretation of the reports issued by the supervisory and monetary authorities in early 2019. To understand the framing process between 2019-2021, these reports are important data points.

5.1.1 Status Quo of Policy Action in the European Union

In 2018, the European Commission (EC) laid out its Fintech Action plan[22] as part of a strategy to develop a more competitive and innovative EU financial service sector in which they recognized the emergence of crypto-assets as: "Technological innovation has led to new types of financial assets such as crypto-assets" (European Commission, 2018, page 3). The report advised the European Supervisory Authorities (ESAs) to initiate investigations in the area. Based on this advice, both the ESA group collectively, as well as two out of the three supervisory groups (ESMA and EBA) launched investigations into the emergence of crypto-assets and published reports throughout late 2018 and early 2019 (EBA, 2019; ESMA, 2018; ESMA, 2019). In addition to the Fintech action plan and ESA investigations, the European Central Bank (ECB) had also established an internal crypto-asset task force, which resulted in a May 2019 publication turning attention to "deepen[ing] the analysis around virtual currencies and crypto-assets" (ECB, 2019, p. 5). With these initiatives, actors from the European supranational environment aimed to assess the existing regulatory appropriateness in relation to crypto-assets (EBA, 2019; ECB, 2019; ESMA, 2018; ESMA, 2019). These supranational groups play an influential role in shaping the views for the EC to engage in discussions around policy developments on crypto-assets. The following two sub-sections aims to provide a background analysis of the views that dominated the initial reports from the ESAs and the ECB. This is to illustrate how the supranational actors engage in different framing activities in constructing meaning about crypto-assets and appropriate scoping of EU financial service regulation to recommend and/or guide policy developments in the area.

5.1.2 The European Supervisory Authorities

With the European Commission's mandate (Fintech Action plan), the ESAs started to investigate crypto-assets. My observations in the working group painted a clear picture of the significant role of ESAs as an important actor in the framing process due to the structure of political processes in Europe. That is because when the Commission formally publicizes statements and opinions on a specific topic, these typically rest on formal reports such as those of the ESAs. In that way, meanings that are constructed on the level of the ESAs are often adopted by the EC. The framing activities that the ESAs engaged in at this point in the political process thus feed into the policymaking process later initiated by the European Commission. The activities mainly focused on official reports advising the EC, but also reports that were warning consumers, had been published over the years. In late 2018, ESMA, one of the ESA actors had issued an own-initiative report (OIR). This report was followed by official individual supervisory reports in the beginning of 2019 (EBA, 2019; ESMA, 2019). While OIRs are not part of the formal decision-making procedure, they are seen as a significant precursor to the initiation of legislative procedures. In that way, they become part of the discussions where meaning making unfolds.

[22] FinTech Action plan: For a more competitive and innovative European financial sector COM/2018/0109 final.

In the official 2019 reports, the starting point of the assessment was the status quo of current financial legislation.

> Considering the novelty of the phenomenon, the evolving business models and the fact that the existing regulatory framework was not designed with these innovations in mind, we believed it appropriate for ESMA to examine and advise policymakers on the risks and issues raised by ICOs and crypto-assets and the extent to which these are addressed by the existing regulatory regime. (ESMA, 2019)

The ESAs developed their understanding of how and where crypto-assets fit into the European market structure based on traditional financial structure. ESMAs' main goal was to examine whether crypto-assets are financial instruments, and EBA's goal was to investigate whether crypto-assets are E- money or funds as defined under existing regulation (EBA, 2019; ESMA, 2019).

The issues raised from the supervisory group describe how risks around crypto-asset markets concern market integrity, consumer/investor protection and money laundering and terrorist financing. These risks are identified based on how crypto-asset markets are fundamentally different, both in terms of instruments and infrastructures, in comparison to markets operating with traditional financial instruments and infrastructures (EBA, 2019; ESA, 2019). ESMA's and EBA's framing activities focused primarily on highlighting the issues around the technology. ESMA's analysis found that the technology poses disintermediated access to financial markets and enable new types of technology-mediated market operations (ESMA, 2019). In the report, ESMA interpret and frame crypto-assets as new types of interpretive-hybrid financial instruments, leading to new types of decentralized business models that could increase the risk of dealing with non-liable operators. The EBA's analysis highlight that "crypto-assets are not banknotes, coins or scriptural money" (EBA, 2019, p. 14). However, the findings also point out that some types of crypto-assets pose characteristics that "will qualify as 'electronic money' and will therefore fall within the scope of the EMD2" (EBA, 2019, p. 14). Framing crypto-assets as outside the remit of existing EU financial service regulation (except for the ones qualified as e-money under EMD2), disqualifies them to be defined as funds under the second payments service directive (PSD2). Consequently, the analysis by the EBA proposes that crypto-assets cannot be defined as a means of payment because only funds qualify as payments (PSD2).

As a conclusion to the challenges outlined, ESMAs' 2019 official advice to the Commission states that a bespoke regime for the crypto industry is premature and that "acknowledging them as financial instruments would grant them potentially unwanted legitimacy" where "the needed supervisory tools and resources may not be in place" (ESMA, 2019, p. 21). Instead of a standalone crypto-asset regulatory framework, ESMA advises expanding and clarifying existing financial law to include crypto-assets based on DLT. The EBA similarly concludes that "crypto-asset-related activity in the EU is regarded as relatively limited and, at this time, such activity does not appear to give rise to implications for financial stability" (EBA, 2019, p. 3), yet also recognized that "some crypto-assets/activities do not appear to fall within the scope of current EU financial services law and are highly risky" (EBA, 2019, p. 29). As a result, the ESAs' initial investigations found that crypto-assets did not pose any stability risk to the financial system, at least not yet

(EBA, 2019; ESA, 2018; ESMA, 2019). Instead, efforts were made to mobilize support around consumer/investor protection and market integrity risk. These frames had already started to mobilize since 2014, where the EBA and also the ESA collectively had published opinion papers on crypto-assets to discourage traditional financial institutions such as credit, payment, and electronic money institutions from holding, selling, or buying crypto-assets as part of their business (EBA, 2014), where the EBA identified 70 risks associated with crypto-assets (EBA, 2014). Additionally, the ESA group jointly issued warnings such as a 2018 report entitled: "ESMA, EBA and EIOPA warn consumers on the risks of Virtual Currencies" (ESA, 2018).

5.1.3 The European Monetary Authority

As a result of the internal crypto-asset task force established in 2018, the European Central Bank (ECB) also reported its position on crypto-assets in a report titled "Crypto-Assets: Implications for financial stability, monetary policy, and payments and market infrastructures" (ECB, 2019). The framing activities of the ECB concentrated on establishing clear boundaries between markets in crypto-assets and traditional financial markets. As stated in the beginning of a position paper, "there is currently no international agreement on how crypto-assets should be defined" (ECB, 2019, p. 7*)*. Given the lack of a common definition, the ECB proposed a new definition of crypto-assets: "A crypto-asset is defined as a new type of asset recorded in digital form and enabled by the use of cryptography that is not and does not represent a financial claim on, or a liability of, any identifiable entity" (ECB, 2019, p. 3). Furthermore, the report argued that crypto-assets are "fundamentally different from various forms of financial claims" (ECB, 2019, p. 8), and what makes crypto-asset a new asset class is not the underlying DLT technology, but in fact "the lack of an underlying claim/liability" (ECB, 2019, p. 8). This interpretation and definition of crypto-assets (technological frame) enabled the ECB to challenge both public and other actors' perceptions of crypto-assets as money by reasoning that "the absence of any specific institution (such as a central bank or monetary authority) protecting the value of crypto-assets hinders their use as a form of money" (ECB, 2019, p. 9). The missing claim and lack of liability of crypto-assets was framed as problematic because the ECB's view on a sound monetary framework is built on the grounds that issuers of money are known entities/institutions and that financial transactions are supported by claims.

Overall, the report by the ECB focused on two strategies. First, it advised regulating the boundaries between the current financial system and the crypto industry*:* "Still, there could be avenues for the regulation, at EU level, of crypto-assets business at the intersection with the regulated financial system, i.e., aimed at crypto-asset *gatekeeping* services, namely crypto-assets custody, and trading/exchange services" (ECB, 2019, p. 29). In that way, future regulation would focus on the so-called gatekeepers and ringfence the crypto-asset industry. Second, the ECB advised to focus on safeguarding the current financial intermediaries/infrastructure if they come to interact with decentralized networks:

> A way to (indirectly) regulate crypto-asset gatekeeping services and, at the same time, safeguard the regulated intermediaries/infrastructures with which those decentralized networks may interact, would be to (at least) subject decentralized networks (and the cryptographic algorithms and protocols they are built upon) to a minimum set of

> principles, such as: (i) technological integrity; (ii) algorithms/protocol service performance and transparency; (iii) stress-tested operational security and cyber-resilience; (iv) regulatory compliance. (ECB, 2019, p. 29)

The ECB's framing of crypto-assets argues that "crypto-assets do not fulfil the function of money, neither do they entail a tangible impact on the economy nor have significant implications for monetary policy" (ECB, 2019, p. 3). The ECB interpretation disqualifies crypto-assets to be viewed as any existing form of money or means of payments. This framing strategy resonates well with the political rhetoric of the ECB, which is to protect the Euro as well as European financial infrastructures and instruments.

In conclusion, if the majority of crypto-assets do not qualify as neither traditional financial instrument nor money, how are they then to be defined and regulated under European law? While the decentralized security structure in the EU is a solution to some member states that proactively regulate crypto-assets, it is the main cause of increasing regulatory arbitrage challenging the European vision of harmonized regulation across member states. As observed in the analysis of the early stages of policy discussions, both the ESAs and the ECB identify various risks around crypto-assets that can be linked to their fundamental differences as instruments and infrastructures (artifacts and information systems) compared to the existing financial realm. Appendix 17 provides an overview of these early interpretations of: crypto-asset definition, risks, future regulatory efforts, financial stability, and monetary policy from the EBA, ESMA, and ECB.

5.2 Part Two: The Evolution of Framing

While part one sat the stage for the early discussions and recommendation for policy actions in the EU, this second part presents the findings of the frame negotiations that took place in the working group between 2019-2022. As a natural presentation technique to understand the empirical findings over time, this section presents the frames, their construction, contestation, and stabilization, chronologically. Frames originate, emerge and evolve due to frame shifts, persist and/or dissipate over time and across periods. To illustrate this evolution, frames are presented in the period in which they either originate or emerge from a frame shift. The three periods are identified through the analysis of frame shifts and capture the main characteristics of the meaning negotiation process taking place in that context of time. The three periods are labelled: divergence, intensification, and stabilization.

Period 1 (divergence) is characterized by divergent meanings, where the privacy, criminal, de-risking, and sustainability frames are negotiated. This period spans the period between January 2019 until July 2019. Period 2 (intensification) is defined by the intensification of meaning negotiations where a frame shift of amplification lead to the emergence of the global stablecoin, which consequently causes two frame shifts, both conceptualized as extensions of the existing de-risking frame, leading to the development of the hybridity and the economic impact frames. This period spans the period between July 2019 until September 2020. In period 1 and 2, crypto-asset policymaking was in development, without a concrete formulation of policy actions from the European Commission. As a result of intensified discussions on crypto-asset policymaking, the proposal of the MiCA regulation draft in September 2020 indicates the beginning of period 3.

While period 3 (stabilization) does not introduce any new frames, meanings about crypto-assets continue to be negotiated in connection to specific MiCA articles. This changes the framing approach of the working group, exemplified by the dominance of the economic impact frame, and is best described by the characteristics of alignment efforts. Finally, as part of the stabilization period (despite the continuation of the institutional negotiations on the MiCA file), elements of stabilization are presented to provide evidence of rhetorical closure/settlements. The third period spans the period between September 2020 and March 2022. The next three subsections will introduce the periods. Each period will be concluded with a visual presentation of the frame negotiation process that occurred during that period.

5.2.1 Period 1: Divergence

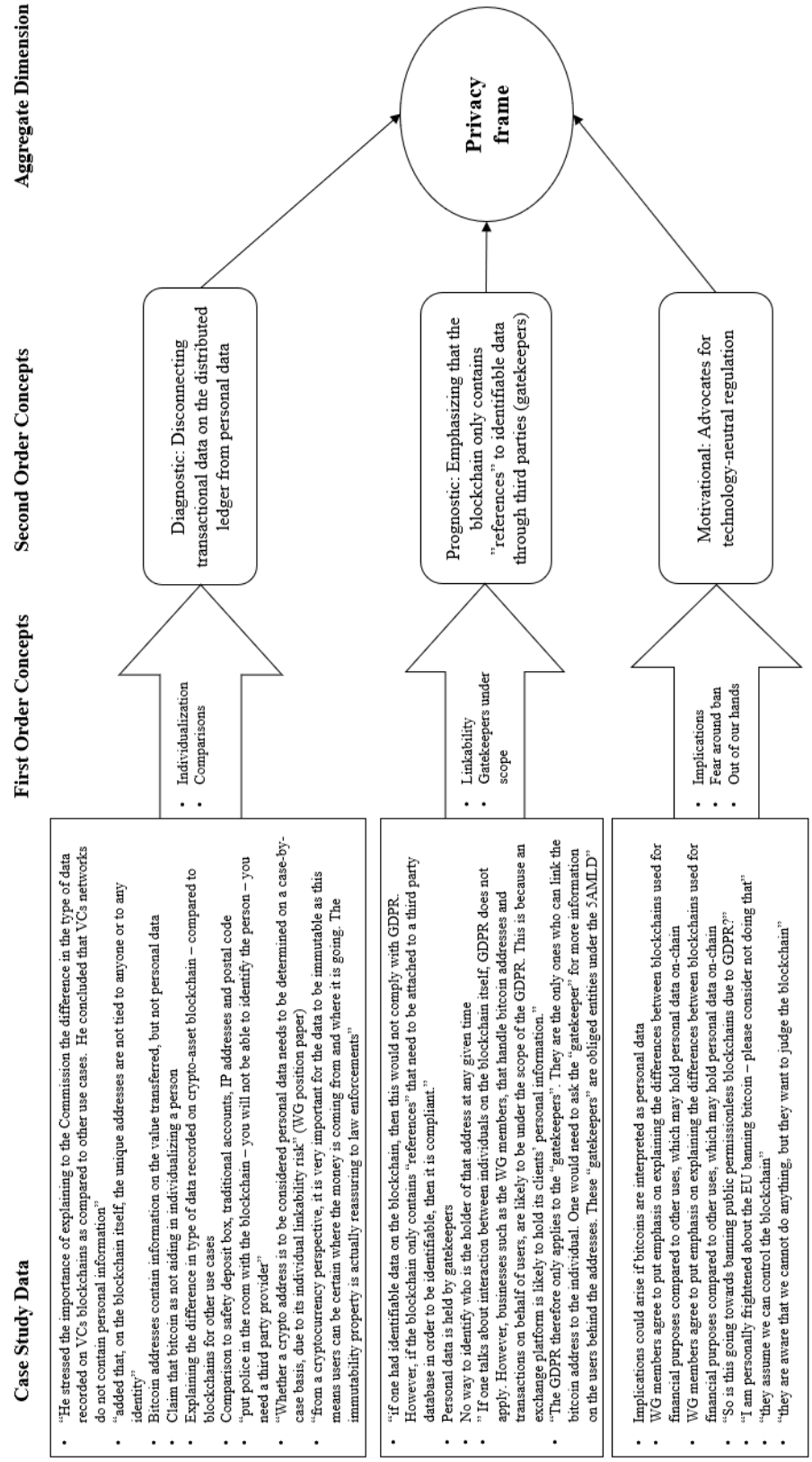
In the years up to 2019 and the beginning of 2019, divergent framing activities had begun to develop across EU member states. The lack of a standardized definition of crypto-assets, and the fact that crypto-asset market activity was largely unregulated[23], led to actors interpreting both the technology itself, but also existing legal frameworks from multiple perspectives. As framed by a working group member, "the problem is that to include investment tokens under MiFID, we need a coherent definition of what a security is—but this is not possible, because every country has different laws" (WGo, March 2019). The decentralized structure of European securities regulation left the respective NSAs with the responsibility to interpret and determine whether different crypto-assets would qualify under European law. The existing condition and structure of EU financial service regulatory landscape was considered a barrier for introducing effective crypto-asset governance mechanisms. This was shared across the working group and different policymakers from DG GROW and DG FISMA as expressed in the beginning of 2019.

As a consequence of the lack of a definition of crypto-assets at the EU level, the National Supervisory Authorities (NSAs) approached the application of existing regulation differently, where some deemed crypto-assets as financial instruments under "The Market in Financial Instruments Directive 2004/39/EC" (MiFID)[24], as e-money under "The E-money Directive 2009/110/EC" (EMD2)[25], or completely outside of existing regulation. This meant that the interpretation of crypto-assets depended on local translations of the existing MiFID and EMD2 directives, which added an additional layer of complexity to the discussions. Consequently, different national regulatory approaches and initiatives were competing, and regulatory arbitrage started to emerge. This was a main concern for actors on the supranational level as well as for the industry due to a lack of level-playing field. The complexity of many crypto-asset business models made this a difficult task for NSAs who were unfamiliar with the emerging technology and based their work and evaluation on their experience with the traditional financial world.

[23] AMLD5 had been extended in 2018 to include virtual assets.
[24] In Europe, The Market in Financial Instruments Directive 2004/39/EC (MiFID) came into force in 2007 with the goal to provide a better framework for oversight of large and interconnected institutions (World Bank MiFID report, 2010). Instead of having one European securities definition by law, the MiFID directive is implemented by the 27 member states' national supervisor.
[25] In Europe, the first e-money directive 2000/46/EC was adopted in the fall of 2000 before it was replaced in 2009 with directive 2009/110/EC (EMD). The second EMD widened the service scope of issuers of e-money

Due to the decentralized security model within the EU and a lack of knowledge about crypto-assets and market activities, the interpretive flexibility of crypto-assets was high among member states. This resulted in challenges both for the industry and for the supranational institutions such as the European Commission in developing policy. On the supranational level, a "risk of member states making national laws for crypto" (PM7, July 2019) was threatening the European vision for a harmonized regulatory landscape. On the industry level, through observing working group members advocating for consistent supervisory approaches across member states, the emerging crypto-asset industry was facing different knowledge levels and interpretations of their business models in search for compliance. As a result, this divergence among member states created a fragmented European market resulting in regulatory arbitrage, frustrating the industry, due to an uneven level playing field. In this first period of divergence, a total of four frames were identified in the discussions between the industry and policymakers. Three out of these four frames were contested by the working group and are labelled: the privacy frame, the criminal frame, and the sustainability frame. The analysis also led to the identification of a frame constructed and advocated by the working group, which is labelled the de-risking frame. Following Gioia et al. (2013), evidence is presented to demonstrate the identification of specific frames. Figure 4 exemplifies the efforts by the working group to contest the privacy frame of the policymakers. This analysis supports the diagnostic, prognostic and motivational framing activities of the working group as described in detail in the content description of each frame.

Figure 4: Sample of Evidence for the Privacy Frame



The Privacy Frame. The 'privacy' frame identified the personalization of crypto-asset addresses as well as the data erasure possibility to be potentially problematic. Both of these identified problems relate to specific articles of the General Data Protection Regulation that was put into effect in Europe in May 2018. The working group opposed this framing of the technology and claimed that "bitcoin is not aiding in individualizing a person" and that "the GDPR therefore only applies to the *gatekeepers* as they are the only ones who can link the bitcoin address to the individual" (WGm 3, February 2019). From my observations of the working group, these concerns weighed heavily on the members as they feared a possible implication for certain types of blockchains to exist within the boundaries of EU compliance. Working group members strongly argued that "virtual asset [crypto-asset] networks do not contain any personal information" and that "the addresses are unique and not tied to anyone or any identity" (WGm9, February 2019). The working group shared the interpretation that crypto-asset addresses only hold information regarding the value transacted and, if the information was to become personalized, it had to be linked by a third-party service provider in which crypto-asset users would have to identify themselves when creating an account. During meetings with policymakers, working group members raised these concerns. They applied a range of comparisons to other cases such as Google maps addresses, safety deposit box, traditional accounts and more in order to change the interpretation of crypto-assets. While the comparisons helped to create a sense of shared reality, the core of the challenge seemed mired in the fact that what constitutes personal data is widely interpreted in European courts.

During these initial discussions on personalization of data and European privacy laws, references to two research reports on the topic were made in different working group meetings, one from a national data protection agency and another from an EU appointed forum, the EU Blockchain Observatory and Forum. In particular, the report from the EU Observatory and Forum provided initial suggestions on how to view data protection in connection with crypto-assets (EU Blockchain Observatory and Forum, 2018). Through observing the discussion on the topic in an internal working group meeting in 2019, working group members (WGm 1, 2, 3, 9, 10) were convinced that the report had taken quite a technology-specific approach and framed permissioned networks as more compliant than public networks (both Bitcoin and Ethereum are public networks). The working group members raised serious concerns regarding this technology-specific approach and were afraid that these views would influence the regulators to regulate only parts of the industry. This would be contrary to the goal of the working group, which was to promote a technology-agnostic regulatory framework.

The Criminal Frame. A second frame that emerged was the 'criminal' frame focusing specifically on the money laundering and terrorist financing aspects of crypto-assets. This frame was one of the first to gain momentum in Europe and had been at the center of most of the discussions (in terms of AMLD5) for the working group leading up to the beginning of my participation. In my post-hoc interview with a working group member, I explored the emergence of this frame in Europe. In my inquiry into the level of understandings policymakers had prior to my participation, the working group member explained:

> The rush (referring to regulating before understanding) came from Paris. The Paris attacks (end of 2015). So, when the terrorist hit Paris, then there was a theory, which was never proven, that the anonymous debit cards that was used to rent the cars that was used in the attacks, could have been somehow funded from bitcoin. Anonymous debit cards, crypto-assets, called virtual currencies back then. Let's reign it in and get AML implemented as well as terrorist financing governance. This led to the AMLD5, directly. (INT1, WGm 6, May 2022)

The criminal frame, while being constructed by unknown entities in various media outlets, was shared by ministers of the EU (the Council) and later policymakers in what became known as the Fifth AMLD package targeting crypto-assets (then called virtual assets).

In 2019, the industry reframed the issue around criminality to be around traceability of crypto-assets. The discussions in working group meetings revolved around the Financial Action Task Force's (FATF) plans to update its approach to crypto-assets (then called virtual currencies) as outlined in the recommendation:

> Countries should ensure that originating VASPs obtain and hold required and accurate originator information and required beneficiary information on virtual asset transfers, submit the above information to beneficiary VASPs and counterparts (if any), and make it available on request to appropriate authorities. (Recommendation 15 Paragraph 7: (b) R.16, FATF 2019)

This rule required the provision of beneficiary information (receiver of the crypto-assets) in a crypto-asset transfer. As the organizer of the working group explained, the recommendations by FATF does not automatically transfer into European law but must be implemented. Through working group meetings, members voiced their opinions about the possible obligations they would meet as service providers, if Europe were to adopt the recommendation into European law. The arguments formed in the working group focused on framing the FATF obligations as; technically unfeasible, non-compliant with GDPR, and not required due to the nature of the direct transfers of crypto-assets. Despite the efforts by the working group, in the summer of 2019, FATF issued the so-called travel rule, which targeted the transfer of virtual assets (crypto-assets)[26]. The framing activities of the working group on the matter thus shifted towards influencing how the EU would implement this recommendation.

The Sustainability Frame. Beyond the privacy and the criminal frame contests, a sustainability frame was constructed concerning the energy consumption issue of crypto assets. This frame was shared by the EBA in their 2019 advise to the Commission. The EBA references a 2018 annual report by the Bank for International Settlements that used the use of energy as way to highlight "the economic limitations inherent in the decentralized creation of trust" (BIS, 2018, p. 91). While energy perspective surfaced via academic research on Bitcoin production (Hayes, 2015), online

[26] 2019 Guidance for a Risk-Based Approach for Virtual Assets and Virtual Asset Service Providers (VASPs)

forums such as the digiconomist.net focused on *energy per transaction*[27]. In a working group meeting, the organizer emphasized that "all references link back to this source (referring to the digiconomis.net)" (WGo, March 2019). The point of reference was a comparison of the electricity needed to clear a transaction between the known VISA payment network and bitcoin. The research estimated that the Bitcoin network requires 555,000 times more electricity to clear a transaction than VISA (digiconomist.net). A third source that inspired the energy discussion was the EU Blockchain Observatory and Forums paper on GDPR, which "seem[ed] to favor POS" from the perspective of the working group (WGo, February 2019). During multiple meetings, the working group framed the issue around the EU Blockchain Observatory and Forum (even though appointed by the EU Commission) as "a conflict of interest," as the working group organizer pointed out (WGo, February 2019). At time of publication, the American company ConsenSys was leading the Forum. While ConsenSys was appointed by the EU Commission, the working group worried about its affiliation with Ethereum. This affiliation, the working group believed, caused the EU Blockchain Observatory and Forum to frame energy consumption as lower in P-O-S compared to P-O-W networks. Such framing was opposed by the working group that aimed towards technology-neutral regulation of the ecosystem.

Due to the increasing focus on sustainability, not just in general, but also within financial services, this frame was difficult for the industry to challenge. A working group member found it difficult to explain the technicalities around the issue and voiced how, "the world's focus on Green Finance is giving this area an even harder time in providing facts—the discourse is in some way already set!" (WGm10, May 2019). In an earlier external working group meeting in 2019, a policymaker had agreed with the working group on the matter and said "you cannot analyze a new technology in this way when you don't know what risks emerge later . . . [because] the problem is that we talk about Bitcoin and environment but forget that there are so many more solutions that will solve these initial problems" (PM2, March 2019). The policymaker continued by stating, "that is what innovation is really about" (PM2, March 2019). The debate concerning the environmental footprint of crypto-asset networks was, from the perspective of the working group, a matter of comparison, as a working group member questioned, "what is too much energy?" (WGm7, March 2019). For the working group, it would be very detrimental for the industry if any form of regulation would target the *type* of crypto-asset architecture based on their views of energy consumption. As a collective, the working group was determined to keep all technological solutions available, and therefore set out early to "debunk the myth" as one member expressed it (WGm2, March 2019).

Despite frame alignment with some policymakers who were pro innovation, other opinions emerged in support of the sustainability frame in which it seemed to only gain relevance and support around the world. An example is the success of the Greens in the May 2019 European Parliament elections, which led to increased attention on sustainability in finance in general. Members in the working group were anxious to understand what this framing of the technology meant to the future of crypto-assets. "It is kind of frightening," one member said after a meeting

[27] The digiconomist.net is an online platform that provides in-depth analysis, opinions, and discussions regarding the social and environmental impact of Bitcoin digital assets, accessed March 20th 2019

in early 2019. “There is a risk that Bitcoin might be out of scope” the member added (WGm10, March 2019). The working group was therefore assessing ways to justify the existence of the technology and strategically reframed the problem in terms of *security tradeoff*, *energy production* and *renewable energy* as a member argued how “there is a misconception on the view of consensus, and that it actually promotes renewable energy” (WGm2, May 2019). The goal, seen from the perspective of the working group, is for consensus mechanisms to be secure as stated in their October 2019 position paper (POS WG6). To be secure in this way means that the system can be trusted to carry out transactions; therefore, framing the problem as a trade-off between energy and security became the main strategy in the working group’s efforts to limit the strong opinions against distributed networks that had started to specifically target P-O-W systems, namely Bitcoin.

The De-Risking Frame. The fourth frame identified in period 1 was constructed by the working group. This is labelled the de-risking frame and focus on the risks of de-legitimization and lack of banking relationships experienced as industry hurdles. Prior to my engagements, the working group had issued position papers advocating for lower risk levels in responses to the Supranational risk assessments (SNRA). An outcome of this work was when “the commission, in the first Supra National Risk Assessment (SNRA) deemed VCs as less risky than prepaid cards” (WGo, March 2019). Within days of this publication, members of the WG had much easier access to financing from banks” (WGo, March 2019). While work on the SNRA II was ongoing, the main framing activity of the working group during the first period focused on problematizing the issue for policymakers and enquiring into “what the EBA intends to do regarding bank accounts and bank relationships for VASPs [CASPs] and token issuers” (WGm8, July 2019). This was done through narrative accounts of how industry representatives felt discriminated in their efforts to establish banking relationships. An example of such an account is the following:

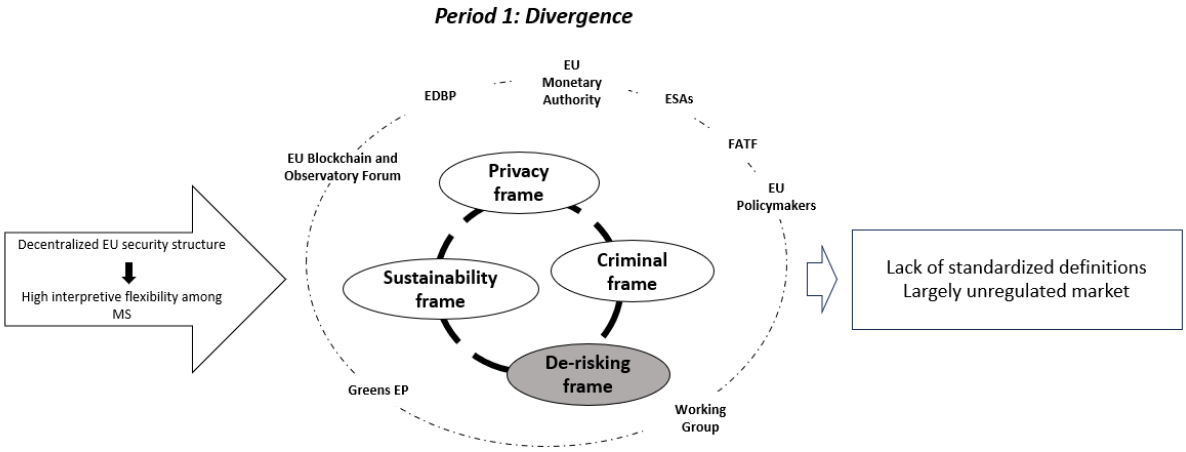
> Looking at stimulating private sector growth, one needs the private sector in order to move forward with innovations. However, exchanges, for example, struggle to form relationships with banks as these do not understand how blockchain technology and cryptocurrencies function. As there is no blessing from the public authority on the use of cryptocurrencies, banks do not want to understand it and only consider the space as a risk. (WGm8, July 2019)

In efforts to mobilize support from policymakers, the working group framed this issue as “anti-competitive behavior of banks against VASPs” causing “a major roadblock for innovation in this industry” due to the fact that “banks only see risks because there is no public authority approving it” (WGm15, July 2019). While the policymakers did not directly contest the framing of the industry group, they mostly believed these issues came from “a lack of understanding” and “lack of resources” (PM7, July 2019). Often the standpoint on these issues was a question of supervisors’ risk appetite, in which many held conservative beliefs.

To conclude, the period of divergence came to dominate the frame negotiation process in the first half of 2019. The decentralized EU security structure led to high interpretive flexibility among member states, resulting in different framing activities by institutional actors. Institutional meaning and decision making was in its early phases exemplified by the variety of frame contests

taking place. Consequently, divergent meanings, a lack of standardized definitions and a largely unregulated market continued to be the bottleneck for both the working group and policymakers as regulatory arbitrage progressed. Figure 5 visualizes the frames in negotiation during period 1, where the grey highlight of the de-risking frame marks the frame advocated by the working group.

Figure 5: Frame Negotiations in Period 1



5.2.2 Period 2: Intensification

In the summer of 2019, a press release announced: “Introducing Libra: a simple global currency and financial infrastructure that can empower billions of people” (Libra Association, 2019). Accompanying the press release was a minute-and-a-half video (Libra.org) illustrating the main purpose behind the newly proposed global digital currency. In the beginning of the video, the visuals show a physical call switching office, an old rotary phone, and paper mail being sorted while a voiceover asks the question, “remember when these where fast?” It then quickly switches to the introduction of microchips, computers, a fax machine, and a mobile phone being used by a businessman and a young man in a restaurant while the voiceover states how “technology has improved the world around us”. Yet, the voiceover continues to ask, “why is it simple to send any of these [referring to digital messages the phone], but not money?”. The visuals then zoom out to space and highlight the view from a satellite in which the entire world is visible. From here, the video speeds up and showcases different aspects of digital and global life before introducing money while the voiceover remarks “What if we made money truly global, stable, and secure?”. The video illustrates how money is entangled with everyday life activities, from shopping to celebrations to sending money to family, and puts emphasis on rural parts of the world. In the conclusion, the voiceover introduces Libra as “a new global currency, designed for the digital world. It’s powered by blockchain, making it safe and accessible, no matter who you are or where you are from”. The Libra Association envisioned value to be stabilized against a basket of fiat currencies and transacted through a global blockchain network in which the Libra Association (100 members) would act as nodes to approve transactions (Libra Association, 2019).

Frame Shift 1. The launch of the Libra currency project proposed a theoretical possibility (social affordance) of crypto-assets as a global currency and caused the first frame shift in the frame negotiation process. The frame shift was observed among actors from the institutional environment, specifically among international intergovernmental actors. In mobilizing support across the world, also at the EU level, the global stablecoin frame emerged. The frame shift is conceptualized as a type of frame amplification according to Snow et al., (1986), which can relate to both value amplification and/or belief amplification. The underlying reasons causing the frame shift is described in more detail in the following paragraphs as a result of Libra intensifying the frame negotiation process.

The Global Stablecoin Frame. During the six months following the announcement, Libra became the main topic of discussion for many international authorities as well as EU policymakers and regulators. The scope of the Libra digital currency project, as projected in the whitepaper and video, was to capture the global financial market through the development of a global, stable digital currency. During observations, I noted how stablecoins became the main topic on many policymakers' and regulators' agendas compared to the limited attention it had received during working group meetings in the beginning of 2019. The frame of global stablecoins emerged on the backdrop of the Libra announcement and intensified the policymaking process in Europe in three ways.

First, the problematization of crypto-assets shifted from a more local to a global focus. International intergovernmental bodies began to participate actively in the frame contest as a policymaker remarked in a working group meeting:

> Facebook's announcement of the Libra project has led to intense discussions at the international level, such as at the G7 and G20, but also at the EU level. They are looking at the so-called stablecoins and at what consequences these may have in terms of financial stability. (PM5, December 2019)

By the end of 2019, many international groups had joined the crypto-asset frame contest with their own framing of the potential issues. Within the first year of my observations, framing activities developed from talking about a niche ecosystem, to a market with the potential to become globally systemic quite rapidly. Throughout working group meetings in the second half of 2019 and the first half of 2020, a new sense of urgency developed for policymakers to focus on stablecoins, where it was noted how international bodies "call for an international harmonized approach to deal with stablecoins" (WGo, November 2019).

Consequently, throughout Europe, policymakers started to believe that regulators should take action regarding stablecoins as they "represent an important extension of tokens' spectrum" (PM2, May 2020). In addition, the scope of future regulatory work will focus on "differentiation amongst different types of stablecoins—global/smaller, architecture, governance mechanisms, the reserve and more" (PM2, May 2020). Especially international intergovernmental bodies (FSB, FATF, G20) were active in developing the concept of global stablecoin arrangements. Thus, this group (intergovernmental bodies) drifted from having been peripheral/supporting actors in the framing contest to becoming significant contributors in the construction of the global stablecoin frame.

Suddenly, they were leading discussions regarding stablecoins and more specifically, the FSB coined the term *global stablecoins*, referring to "stablecoins with a potential global reach and the ability to rapidly scale in terms of users/holders of the crypto-asset. This term is also descriptive and does not necessarily denote a distinct legal or regulatory classification" (FSB, 2019, p.1).

International actors participated in the construction of the global stablecoin frame, where actors such as the Financial Action Task Force (FATF) and the Committee on Payments and Market Infrastructures (CPMI) engaged in amplifying elements of the criminal frame with the global stablecoin frame. FATF's two concerns were mass-market adoption and person-to-person transfers with the absence of a regulated intermediary. Those aspects could cause serious consequences for "regulators' ability to detect and prevent money laundering and terrorist financing" (FATF, 2019). CPMI raised general concerns regarding stablecoins of any size, focusing on AML efforts, cybersecurity, consumer/investor data protection, and tax compliance. The globalization of stablecoins could amplify the aforementioned challenges (mentioned in the criminal frame) and additionally challenge competition policy, financial stability, monetary policy and, in the extreme, the international monetary system (CPMI, 2019). In conclusion, international intergovernmental bodies framed stablecoins as a global problem and thus recommended tackling these challenges at the global level. Collectively, this group problematized the potential scale and reach that global stablecoin arrangements could achieve and thus become a systemic part of the international monetary system.

Second, the announcement of Libra shifted attention back to the issues of financial stability and monetary policy, which had, only a few months earlier, been analyzed as "relatively limited and, at this time, such activity does not appear to give rise to implications for financial stability (EBA, 2019, p. 4), "not pose an immediate threat" (ECB, 2019, p. 28) and "nor significant implications for monetary policy" (ECB, 2019, p. 21). The reintroduction of these silent issues, now diagnostically and prognostically framed differently (as a potential threat compared to not a threat), quickly spread across groups and became important to the framing of the global stablecoin frame. From that point in time, it was almost impossible to talk about crypto-assets without mentioning the risks to financial stability or monetary policy. The financial stability issue was also discussed in relation to trust. Trust in the sense of trust in the institution of money. A September speech, "Money and private currencies: reflection on Libra" was given by the Executive Board of the European Central Bank (ECB, 2019, September). In this speech, highlighting the importance of public trust in money was the key message:

> Money and trust are inextricably intertwined as money and the state. Money is an "indispensable social convention" that can only work if the public trusts in its stability and acceptability and, no less importantly, if the public has confidence in the resolve of its issuing authorities to stand behind it, in bad times as well as in good. (ECB, 2019)

With the ECB framing the proposal of Libra as a market innovation that seeks to replace the euro with alternative settlement currencies, they made efforts to portray the main characteristics of the existing monetary standard as trust. The emphasis on trust was not without precedent. Over the years, the tech giant Facebook had been involved in the Cambridge Analytica case that specifically deemed them *untrustworthy* in the eyes of regulators and the mainstream public:

> I will today talk about Libra, Facebook's newly announced private currency. It is scheduled for release in the first half of 2020 by the very same people who had to explain themselves in front of legislators in the United States and the European Union on the threats to our democracies resulting from their handling of personal data on their social media platform. (ECB, 2019)

The second intensification around the emerging global stablecoin frame, reintroduced the issues of financial stability and monetary policy. In addition, the monetary authority (ECB) problematized the substitutability potential of global stablecoins with public money in relation to trust in the institution of public money.

The third way that the Libra announcement intensified the policymaking process in Europe was the approach to regulation. Prior to Libra, policy development focused primarily on establishing periphery control through regulatory mechanisms such as AML, GDPR and FATF. Based on observations from some of the first meetings in the beginning of 2019, there seemed to be a preference, inspired by the ESA reports (EBA, 2019; ESMA, 2019), towards addressing crypto-assets by extending existing law. This was the case for the AMLD5 that came into effect in 2020 and the FATF recommendation in June 2019. This was also the perception of the working group, as the working group coordinator explained, "from my understanding they [Commission] don't want to do a regulation. They want to fit ICOs [crypto-assets] onto existing laws" (WGo, March 2019). With Libra, this approach changed, and a form of urgency developed towards establishing strict regulatory control of crypto-assets. This urgency was reflected in events, speeches and public opinion papers from various national and supranational actors. In a report by the FSB, it was questioned whether existing regulatory and supervisory approaches were adequate in addressing financial stability and system risk concerns that could arise from the individual components of a stablecoin arrangement or their interaction as an ecosystem as a whole (FSB, 2019).

In a working group meeting in December 2019, group participants discussed an event that had taken place at the European Parliament, called 'Stablecoins Going Mainstream' where the discussion evolved around the changing approach of EU regulators. Through conversations in the working group meeting, it was mentioned that the European Commission was, as of December 2019, already "working on future legislative initiatives on crypto-assets" (PM5, December 2019) due to the increasing attention toward regulation of the space. With emerging developments of private sector crypto-asset offerings, the framing activity of this group shifted toward preferring stricter regulation. Until the unveiling of Libra in June 2019, intergovernmental bodies had been focusing on supporting international bodies in their work on anti-money laundering policies. However, in the summer of 2019, the focus of this group changed dramatically, and their shifting strategy was recognized among EU legislators, as a policymaker made clear in a working group meeting in the end of 2019: "The travel rule and Facebook's Libra announcement have led to intense discussions at the international level, but also at the EU level" (PM5, December 2019).

In a position paper aimed to answer the FSB's "Stablecoins Consultation" in December 2020, the working group shared the view of the FSB regarding systemic risk and financial stability concerns of global stablecoin arrangements due to "the amount of potential reachable customers and the

embedded consequent lack of transparency" (POS WG11). Yet, the members pointed out that "the same systemic risk cannot be posed by 'normal' stablecoins" and provided their definition of a stablecoin:

> A stablecoin is usually a token that is a digital representation of value that is designed to maintain a stable price. It can be attached to a legally established currency, a basket of currencies, or to any other kind of physical or virtual asset. When attached to a legally established currency, a stablecoin can currently fall under national e-money legislation under certain conditions, such as a pre-funded nature or a redeemability option. (POS WG11)

The major problem posed by stablecoins, from the working group's perspective, is that they do not fall under current EU law (5th AMLD) as they do not qualify for the definition of virtual currencies. The working group therefore advised policymakers to extend the definition to include the transfers of stablecoins and, in that way, provide additional regulatory clarity. However, due to the increased attention to monetary policy and financial stability from intergovernmental bodies, a lack of a bespoke regime for crypto-assets seemed to have become a bigger issue than extending existing periphery regulation.

Frame Shift 2. Following Libra, policy analysis accelerated in the EU. This acceleration led to the initiation of a public consultation by the European Commission in the end of 2019 on the future of European crypto-asset regulation. As a consequence of the increasing dominance of the global stablecoin frame, a shift in the working group's framing activities was observed. This second frame shift in the frame negotiation process is conceptualized as a frame extension according to Snow et al. (1986). The frame extension is an extension of elements prior belonging and emphasized through the de-risking frame. Accordingly, this frame shift relates to shifts in framing by the working group. More specifically, the continued high interpretive flexibility, increasing attention to global stablecoin arrangements, and various classification attempts by policymakers caused a subtle shift in the framing efforts of the working group that lead to two extensions of the de-risking frame: a hybridity frame and an economic impact frame developed as a result. These two frames are presented next.

The Hybridity Frame. While the working group had emphasized the inherent functionalities of blockchains in the context of crypto-assets when contesting both the privacy frame and the criminal frame during the beginning of 2019, a shift occurred in the beginning of 2020. The industry had proclaimed the advantages of the traceability functionality in relation to both the privacy and the criminal frame, yet a continued sense of *lack of knowledge* triggered the working group to focus more intensively on debating the hybridity frame. The lack of a standard definition was still present in spring 2020, however, through working group meetings with policymakers, it was clear that there was a developing approach from policymakers in viewing crypto-assets across three categories: investment, payment, and utility (PM2, May 2020). The debate in the European Commission was on "whether some of them should stay out of the scope of the Regulation" (PM2, May 2020), as the policymaker put it. At this point, the main question revolved around how to apply a framework to utility tokens as these could take many forms because of their hybrid nature. In that sense, it was difficult "putting all utility tokens into one strap of regulation, as the token

economy is decentralized" (PM2, May 2020). Instead, the policymakers shared the idea of a cascading system that would "depend on the size and use of the product" (PM2, May 2020).

The main issue regarding regulating crypto-assets *depending on use* (proposal by policymaker) was the hybrid nature of crypto-assets afforded by the transferability functionality inherent in blockchains. A working group member emphasized that "[we] can easily turn a token into a payment token and therefore separating payment tokens from other tokens does not make any sense" (WGm6, May 2020). The working group had already questioned the practical implementation of such classifications in an earlier working group meeting (March 2019). The discussion focused on the distinction between the use of money for payment vs. investment. "If I take 200 Euro cash and put in my wallet, how can we separate if I'm storing them there for vacation or for investment?" one member said (WGm7, March 2019). "Yes, that's the real discussion, and I'm not sure," the working group organizer replied (WGo, March 2019). Then "what actually is saving?" the working group member probed (WGm7, March 2019). While many working group members believed that "depending on *how* you use the instrument [referring to crypto-assets], that's how it should be regulated" (WGm7, March 2019), they also recognized how difficult it would be to apply to reality. Especially because "it is very difficult to determine hybrid tokens [crypto-assets] as they hold different functionalities" (WGm1, March 2019).

The Economic Impact Frame. In addition to the hybridity frame, another frame gained momentum as a response to regulatory urgency formed on the national and supranational levels. Over the course of the years of observation, an economic impact frame started to be more observable, constructed by the working group. The industry became more direct in framing the economic aspects of their preferences for policy action, and thus started putting emphasis on the economy that crypto-assets enable in terms of Europeanization, job creation and industry development. The main issues, seen from the perspective of the industry was the restricted access to banking, de-legitimization and industry risk-labelling. These issues relate to a broader challenge referred to as the de-risking phenomenon; "namely financial institutions restricting access to or withdrawing from providing financial products or services, or servicing a particular customer or category of customers, so as to avoid any kind of related risk" (POS WG12). The increased focus on the impact of policy action towards the future economy of crypto-asset service provision is observed and conceptualized as a type of frame extension (Snow et al., 1986). Over time, the de-risking frame extended into a frame where focus shifted to highlighting the issues of both impractical obligations (obtaining beneficiary information) and other possible economic impact areas of regulation.

In a summer 2019 working group meeting, the issue was debated internally among working group members. One member believed that "banks only see risks because there is no public authority approving it" and in that way "it [the technology] has to first be legitimatized before they [the banks] would get involved" (WGm8, July 2019). Over time, the attention to the de-risking phenomenon grew (also from other types of financial services, not only related to crypto-assets) and in June 2020, the EBA made a call on input on de-risking and its impact on access to financial services. The working group members responded to this call by outlining the specific issues they had faced in operating their crypto-asset business in Europe (POS WG12). In the position paper,

the working group stated how banking relationships represent the essential link between crypto-asset service providers and the customers. That is because, for customers to gain access to the crypto-asset space, they first need to transact with a service provider, but this step was often blocked by banks. In that way, the inflow to the crypto-asset economy depends on legitimization of the industry which would decrease risk levels and ensure access to banking for crypto-asset business.

In terms of the high-risk qualification that often occurred to crypto-asset businesses, the working group relates this to knowledge, or lack thereof, of the crypto-asset industry and the service provision practices, which the following quote from the position paper outlines in more detail:

> The banks in question have little understanding of our industry and also seem to be unaware of the processes we have in place to adhere to the 4th and 5th AMLD; as a consequence, crypto related businesses are automatically classified as high risk without any clear understanding of how their business operate. (POS WG12)

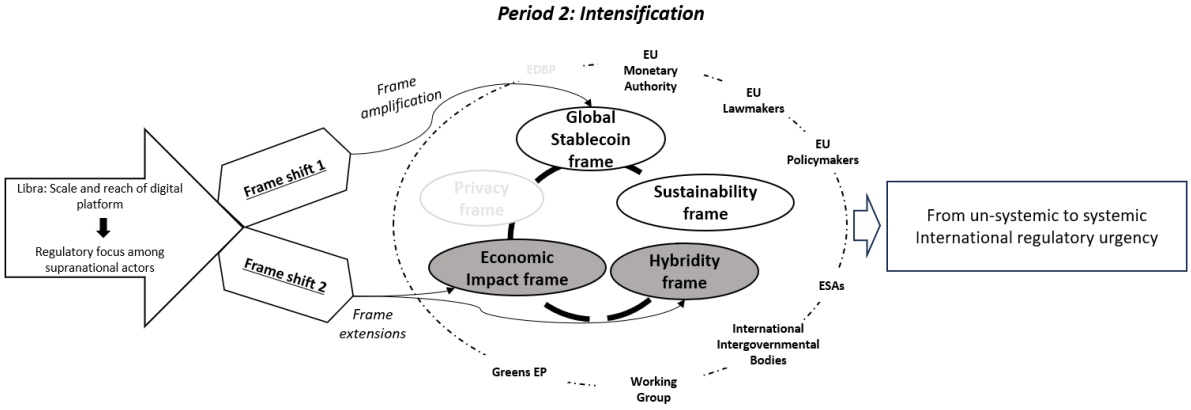
Prior to my participation in the working group, the group had exerted efforts to bring down the risk profile in both the Supranational Risk Assessment I and II. However, the high-risk qualification referred to in the previous quote was evident in the majority of the national and supranational actors' perceptions about crypto-assets. Some groups' framing activities fueled the risk debate more than others. For example, since its initiation of interest in crypto-assets, ESAs have pointed toward its risks and intimidated consumers and incumbents to prevent engaging in any activity in the area (ESA, 2018). International intergovernmental bodies have likewise engaged in risk-focused activities concerning money laundering risk from stablecoins and other emerging assets (FATF, 2019).

From the perspective of the working group, the focus on risks dominated the discussions, and thus the over time, emphasis on the possible economic impact became central to the work of the industry, as illustrated by the following question of a working group member to a policymaker; "what is your position on the anti-competitive behavior of banks against VASPs [CASPs], as a major roadblock for innovation in this industry is lack of access to banking?" (WGm8, July 2019). In a follow up comment, the group organizer opinioned how "this behavior from banks could be deemed anti-competitive. This could also be said of the FATF Guidance as it imposes traditional financial requirements on this new technology, which is impractical" (WGo, July 2019). In that way the economic development frame came to include issues that were previously referred to within a different frame contest, for example the working group contesting the criminal frame. Where emphasis had earlier been directed towards highlighting the impracticalities of the compliance requirements put forward by policymakers, such as the technical feasibility of the regulatory requirements towards obtaining beneficiary information, framing, of the industry, now shifted towards putting more weight on the competitive implications of potential policy actions.

To conclude, the period of intensification marks major shifts in the frame negotiation process taking place between the summer of 2019 until September 2020. The introduction of Libra, the idea of a global digital currency, accompanied by the scale and reach of digital platforms led to regulatory focus among supranational actors. Institutional meaning making shifted, exemplified

by the frame shifts (amplification and extension). As a consequence, the intensification of frame negotiations that shifted attention to the systemic risks of global stablecoin arrangements caused international regulatory urgency. This intensification also had impacts on the framing activities of the working group as shown through the second frame shift. This second shift indicate the extensions of the de-risking frame into the hybridity and the economic impact frame (marked in dark grey in figure 6). In addition to the frame shifts and evolving frames between period 1 and period 2, the examination also led to realizing the dissipation of the privacy frame (marked in light grey in figure 6). This dissipation was caused by the dominance of the global stablecoin frame characterized by elements of the criminal frame. As such, the conflict between the privacy and the criminal frame became of less importance within the context of financial service regulation where anti-money laundering guidelines overrule some GDPR recommendations. Figure 6 visualizes the frame shifts, and the frames in negotiation during period 2.

Figure 6: Frame Negotiations in Period 2



5.2.3 Period 3: Stabilization

As a result of many consultation reports during 2019 and 2020, the European Commission shared its *Digital Finance Strategy Package* in September 2020. In this package, a new bespoke regulation for Markets-in-Crypto-Assets (MiCA)[28] was proposed. In a December 2020 working group meeting following the publication, a policymaker explained the rationale of the MiCA proposal and the reason for shifting from extending current regulatory financial frameworks to creating a new regulatory framework for specifically crypto-asset markets:

> We need to look at those regulations [referring to existing ones] in light of digitalization, in light of digital transformation and make sure that the body of rules [referring to existing regulation] work in a digital context. MiCA is an example of something that could come out of such reflections. We assessed the market; we assessed the rules. If things don't work, we propose new changes. That's what MiCA does. (PM2, December 2020)

Instead of extending or modifying existing financial regulatory frameworks to apply to crypto-assets, the legislative bodies of the EU collectively chose to create a new regulatory regime and

[28] EUR-Lex - 52020PC0593 - EN - EUR-Lex (europa.eu)

harmonize standards across markets in the European Union. Initial framing of the technology and policy work suggested perimeter control of the industry. However, because of the developing *spectrum* of crypto-asset (realization of social affordances) and the manifestation of the global stablecoin frame, a shift in attitudes led to a changing approach of policymakers. Such change resulted in a paradigm shift establishing inside control of the industry through a standalone binding legislative act - the MiCA Regulation. Period 1 and 2 illustrate how inherent properties of the technology and proposed materializations of its use (technical and social affordances) projected socio-political challenges to the existing understanding of monetary sovereignty. The third period captures the frame stabilization period, where the industry group discusses specific articles of the draft regulation in order to align meanings and preferences with policymakers.

Up until the MiCA proposal, the industry group had focused on a variety of issues across official reports, opinion papers and knowledge about the different DG's work programs. This approach shifted when MiCA was drafted as the MiCA text provided a concrete set of meanings that were either agreed with or contested by the industry group. Out of the 126 articles in the first MiCA draft, only nine areas of concern were contested by the working group. The majority of the concerns were found to relate to what developed into the economic impact frame constructed by the working group throughout period 2. In this period (period 3), I introduce the frame alignment processes that the working group participated in and present two important areas of concern for stabilization observed up until when data collection ceased in late 2021.

Following the publication of the MiCA draft proposal, the economic impact frame (extension of the de-risking frame) gained more dominance as the main perspective used in the industry's framing activities. The increase in significance came about due to the more concrete regulatory measures outlined in MiCA. While it is quite a common reaction that an industry prefers regulation that will be advantageous to the field, the frame contest observed between policymakers and the working group came about due to the dominance and amplification of the global stablecoin frame that developed in response to Libra. The framing strategy shifted towards framing crypto-assets, not only in terms of specific de-risking activities, but as a broader frame of economic impact from the proposed MiCA regulation. Elements of the global stablecoin frame held profound economic disadvantages for the industry, which was contested through the economic impact frame. The following outlines the two main areas of concern highlighted by the industry group in late 2020 to the fall of 2021.

Access to Banking. Over time, the concern from the working group regarding access to banking came to be reflected in the MiCA draft proposal. MiCA enforces a layered model of banking and financial services where some crypto-assets (EMT business models) require banking relationships to gain access funds. As for EMTs, the MiCA proposal states that:

> Holders of electronic money as defined in Article 2, point 2, of Directive 2009/110/EC are always provided with a claim on the electronic money institution and have a contractual right to redeem their electronic money at any moment against fiat currency that is legal tender at par value with that currency. (European Commission, 2020, p. 17)

This imposes a requirement for CASPs to hold customers' funds in fiat bank accounts and always be able to redeem at par. In the months following the MiCA announcement, the issue of banking intermediation was brought up and debated heavily with policymakers in many working group meetings (December 2020; June 2021; September 2021). In a working group meeting at the end of 2020, the working group proposed implementing a "provision in MiCA guaranteeing access to banking for CASPs because they are required to have their funds there", as one member put it (WGm6, December 2020). Another way to deal with this issue, which was proposed through the working group's position paper on MiCA, was to have "national central banks guarantee access to banking for CASPs may banks not allow it" (POS WG13).

The many discussions on the topic combined with my observations regarding the frustration from working group members illustrate the intensity of the frame contest between the global stablecoin frame shared by national and supranational actors and the economic impact frame constructed by the working group. The framing activities of the ECB (nature of claims and liability), the ESAs (high risk profiles), and the international intergovernmental bodies (risk of stablecoins) are mirrored in MiCA that enforces the intermediating role of banks through ensuring a one-to-one relationship between units of crypto-assets and units of fiat funds. In a working group meeting in the beginning of 2021, working group members debated whether such obligations in MiCA could actually open up access to the crypto industry if banks were to be more involved. Despite this window of optimism, a working group member expressed, "on the one hand they [the banks] are killing the market, on the other hand, they are starting to look for possibilities to add crypto wallets to their systems" (WGm11, February 2021). The industry working group framed the issue in terms of accessibility in which *time to market* would be shortened for banks compared to crypto-asset companies because of the requirement of a banking relationship. This argument was grounded on the fact that MiCA enables banks to provide crypto-asset services without an obligation to notify the authority in their member state, whereas CASPs are obliged to provide such notification. Following the meeting with the policymaker, working group members internally agreed that "the de-risking is the biggest risk for the crypto industry" (WGm6, February 2021).

Prohibition of Interest. The prohibition of interest was another concept that emerged with the proposal of the MiCA regulation:

> To ensure that asset-referenced tokens are mainly used as a means of exchange and not as a store of value, issuers of asset-referenced tokens, and any crypto-asset service providers, should not grant interests to users of asset-referenced tokens for time such users are holding those asset-referenced tokens. (European Commission, 2020, p. 24)

From the observations, the issue of prohibiting interest in crypto-asset business models encompassed far more complicated matters than simply constraining certain types of business models in the crypto-asset economy. From the working group's perspective, the direct implication of such provision targeted so-called lending platforms (e.g. Blockfi and Nexo), which provide lending services similar to banks. With these services, customers can store their crypto-assets and, in return, gain interest. This is similar to deposits in traditional bank accounts. A working group member described these services as "the next generation of innovation" (WGm13, December

2021), but by prohibiting interest, these services would be illegal. The working group was discussing this provision when one member intervened and said, "interests are very important, they are the reason why banks started to exist" (WGm14, December 2021). From his understanding of the proposal, "crypto companies would be restricted from this kind of business" (WGm14, December 2021).

Aside from prohibiting certain types of business models, there was a second impact of this prohibition. Crypto-asset protocols 'pay' interest as a function of operations, which is the case of proof-of-stake (POS) and proof-of-work (POW) systems. In the crypto-asset industry, this type of *interest* is instead referred to as *staking* and was described by a working group member as "fundamental to the operation of consensus mechanisms" (WGm13, December 2021). The other working group member explained if it is prohibited, "no one has an interest in participating in the system" (WGm14, December 2021). In trying to interpret the meaning of such prohibition, a third member said that "this is not interest in a classic way" (WGm12, December 2021) and exemplified how bitcoin miners get rewarded for mining while staking is the reward in POS systems. Once more he stated, "it is not interest in the traditional sense" (WGm12, December 2021).

The Commission's view on this issue seemed to originate in the global stablecoin frame: to limit the use of stablecoins and limit deposit and credit-oriented business models. A working group meeting in 2021 shed light on why such policy arrangements were proposed. Due to some member states being worried about the fact that some stablecoins could pose functions similar to fiat currencies, a distinction between types of stablecoins seemed to be the solution to limit any risks, as voiced by the guest: "if it [referring to stablecoins] has those functions [referring to functions of fiat currencies], it might be a risk to monetary sovereignty" (CM1, April 2021 [Counsil member]). However, from the interpretation of the working group, such prohibition would "kill the technology" as one member expressed (WGm13, December 2021). The debate in the meeting, therefore, turned towards questioning whether "regulators actually are against the blockchain technology or if they try to limit the capabilities of service providers" (WGm13, December 2021). As the MiCA discussions went on during 2021, both the Council's, MEPs', and Parliament's work on the interest prohibition matter did not change drastically. Observing multiple meetings with policymakers during 2021, the working group repeatedly attempted to realign their economic impact frame with the policymakers global stablecoin frame to remove these provisions in the regulation. However, in March 2022, the final version of the MiCA regulation was approved in Parliament, and the prohibition of interest remained. Despite realignment attempts by the industry, these provisions were not changed.

To understand the possible consequences of the lack of frame alignment on the matter, I arranged an interview with a working group member following my observations in the working group in May 2022. The working group member interpreted the provision as a misunderstanding about the nature of the technology from regulators:

> I'm very disappointed that they do not allow for interest because they don't understand it. They don't understand that everything proof of stake is built on interest. That all the efficiencies that you build in these systems and platforms actually are based on carrying interest. They view interest in an old-fashioned way of something to do with providing the

> consumer of just storing things [referring to staking] that they should deserve something from that. And, of course, they should. It's really detrimental for a lot of things that they don't understand why it is because they have not really studied it. And we have been telling them for such a long time that it's a bad idea, but now it's more and more clear that it is really a bad idea. (INT2, WGm6, May 2022)

From the perspective of the working group member, the real misunderstanding of this provision relates to how the POS system operates, where in the eyes of regulators, *staking* was interpreted the same as interest. In following quote, the working group member explained in detail how POS systems *grant interest*: "Proof of stake requires you to stake something. In order to stake something, you'll receive proceeds which would be defined as an interest. So, you will receive interest. Now, in principle, you can see proof of stake is out of the window if you are not able to provide an interest" (INT2, WGm6, May 2022).

Through a comparison to how interest is shared with consumers in the traditional banking economy, the working group member expressed deep frustration on how this will not be allowed in the crypto-asset economy:

> If you deposit an asset with someone and that someone uses it to generate profit through means of various things like classical banking. So, it's not allowed to provide the consumer with their fair share of that value creation. That is insane. That is just allowing in principle that banks can charge you interest, but you can never receive the money. That would be the same thing as saying that. And I actually think that's bad for consumers and I don't think it's fair. So, there are several things in the prohibition of interest, which has unintended consequences. (INT2, WGm6, May 2022)

Due to potential existential consequences of this, the impact on the technology and future crypto-asset markets is uncertain, and it is unknown what will happen to POS systems. The working group member continued to explain, "they don't know what they are doing" and how markets may "just ignore the problem, pretend it's not there" (INT2, WGm6, May 2022):

> There might have been reasons for why it was illegal in the first place. But if the society defines it as being okay, then it's okay. That's a problem with lawmakers in principle. It's derived from a society and the society defines what the laws are. The society decides across the board that something is allowed. Then it is allowed as a society. Unless it (law) can be enforced. But this cannot be enforced. (INT2, WGm6, May 2022)

From the findings of this case study, the global stablecoin frame challenges the economic impact frame of the crypto-asset field where the future frame alignments will be a main determinant of the direction of the field, here including technology and business model developments. In other words, if the prohibition of interest is enforced on the protocol level, the majority of crypto-assets will not be able to function as they do today. Based on the observations, especially in 2021 working group meetings, there was a shared sense of agreement among working group members that if technical knowledge on this issue had been or was to increase among regulators, such an outcome would have changed their framing strategy. Besides the function of granting interest on protocol level, as explained by working group members, the next generation of crypto-asset innovations involves granting interest on crypto-asset deposits and lending. Such business models would serve as the crypto-asset industry's answer to banking services.

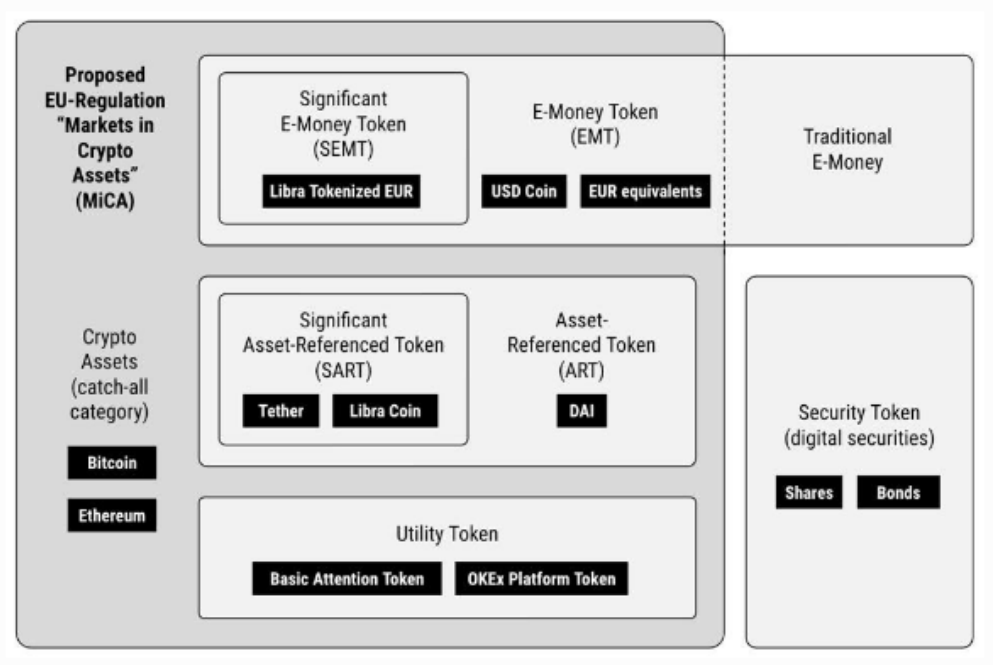
The Commission's strategic vision of prohibiting interest related to the issuance or service provision of ARTs and EMTs was to "guarantee the stability of the Euro" as the working group organizer put it (WGo, December 2021). This vision was supported by the dominance of the global stablecoin frame where regulators did not want financial instability and currency substitution. During this period the hybridity frame was contested as MiCA limits the crypto-asset (ART and EMT) function of a store of value, "they discourage people from having their savings in crypto" (WGo, December 2021). The implications of the prohibition of interest for the crypto-asset industry are that the business models behind ARTs and EMTs become unattractive and issuers providing these services will most likely not reside or seek an EU MiCA license.

Elements of stabilization. Along with MiCA came a definition and classification of crypto-assets. This exemplifies the formation of a dominant interpretation of crypto-assets following a long period where multiple interpretations coexisted (Pinch & Bijker, 1984). The rhetorical closure (Bijker, 1995) is observed as an element of stabilization which provides actors with a shared reference for future interpretations. The stabilization of dominant interpretations around classification also denotes the political character of technology interpretation where, from the perspective of the working group, the categorization is an "artificial distinction" (WGm6, June 2021). This element of stabilization can be tracked from the domination and spread of the global stablecoin frame, which contests with the economic impact frame advocated by the industry.

Definition of crypto-assets. The MiCA regulation did not implement the recommendation from FATF, but instead, through working group meetings in late 2021, a new anti-money laundering (AML) regulation was mentioned to replace the AMLD5 (October 2021; November 2021). An important observation can be made in the definition of crypto-assets and its rhetorical stabilization through the years. In brief, the first crypto-asset targeted legislation in Europe, AMLD5, used the term virtual currency. FATF then used the term virtual asset and crypto-asset instead of virtual currency or crypto currency, as referred to among the public, to provide a technology-neutral definition (FATF, 2018). Then, in 2019, as evidenced in the ESAs' and ECB's reports, the term crypto-asset became widely used. As a result of the rhetorical stabilization, MiCA used the crypto-asset terminology and limited the definition to assets 'using distributed ledger technology or similar technology'. Consequently, the new AML regulation adopts the MiCA definition of crypto-assets. In 2022, following the adoption of the definition, the ECB responds to this change in an opinion piece: "The ECB welcomes this change, as the term 'virtual currencies' could lead to misperceptions as to the nature of those types of assets, which are not currencies" (ECB, 2022, p. 14). What started as the root cause of interpretive flexibility (the lack of a definition), legally stabilized on a definition of crypto-assets as governmental bodies and monetary authorities wished to withdraw the connotation of currency and any association to money when talking about crypto-assets.

Classification of Crypto-Assets. The classification of crypto-assets in the MiCA regulation is a result of a complex interpretive journey exemplified in the previous sections. MiCA divides crypto-assets into the three categories of utility tokens, asset-reference tokens (ARTs) and e-money tokens (EMTs), while also allowing for a general category of crypto-assets to exist without any issuer. Figure 7 illustrates this categorization.

Figure 7: MiCA Classification of Crypto-Assets



Note. Adopted from Philipp Sandner (2020).

While the category of EMTs and the provisions in MiCA bridges to the second e-money directive (EMD2) where e-money is defined as funds, and thus fall under the PSD2, ARTs do not qualify as funds. Through observations in a working group meeting in 2021, these discrepancies were discussed with a policymaker. The working group explained how such composition of regulation (referring to how only EMTs and not ARTs are subject to PSD2, despite their similarities) led to a strange future for the uses between types of crypto-assets. Aside from the crypto-asset industry voicing its frustration regarding the classification and bridging, traditional payment service providers (PSP), such as Mastercard, also shared concerns regarding the payments context when using either EMTs or ARTs, as the following quote illustrates:

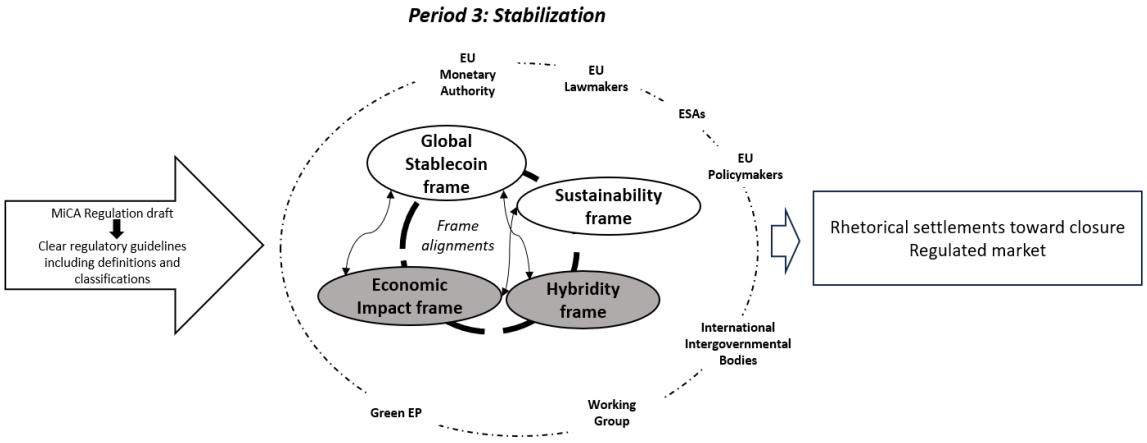
> We are concerned that the consumer protection for payments made with asset referenced tokens, are different to protections for payments made with e-money tokens. Article 43 in MiCA states that 'e-money tokens' are deemed electronic money for the purpose of Directive 2009/110/EC' (EMD2). This means that e-money tokens fall within the definition of 'funds' for the purposes of Directive 2015/2366/EC (PSD2). In turn, this means that all consumer protections for payments in PSD2, such as those for lost payments, incorrect payments, limits on liability for fraudulent transactions, consumer focused dispute resolution and so on, apply to payments made with e-money tokens. The Regulation recognizes that asset referenced tokens "often aim at being used by their holders as a means of payment to buy goods and services" (recital 9). However, under the current proposal, payments made with asset referenced tokens would not benefit from the same consumer protections as e-money tokens or other 'funds.' This is because asset

> referenced tokens do not fall within the definitions of funds under PSD2. (Mastercard, 2021, p. 1-2[29])

As both CASPs and PSPs outline, the impact of restricting the definition of funds to EMTs in the MiCA regulation generates an uneven market between types of crypto-assets. One can argue that, as a consequence, the ART business model becomes rather unattractive as ARTs do not benefit from traditional payment regulation. As a result, the classification of crypto-assets in MiCA is more of a political classification than a technical one.

To iterate, the period of stabilization indicates the development and maturation of institutional meaning and decision making on crypto-assets. The announcement of the forthcoming MiCA regulation, which included the draft proposal that was to be negotiated among institutional actors, provided clear regulatory guidelines including definitions and classifications of crypto-assets, roles and responsibilities of crypto-asset service providers, and types of regulated crypto-asset services. Definitions and terminology in the draft proposal enabled frame negotiations to be more specific where actors targeted a certain preferred policy outcome. The period of stabilization should not be seen as a result of the choice to regulate through a standalone regulation. Instead, it captures the process where institutional actors work to align frames across areas of concern and rhetorically settle interpretations about crypto-assets. The working group continued to advocate for the economic impact and hybridity frames (highlighted in grey in figure 8) throughout alignment attempts, particularly focusing on contesting the global stablecoin frame. Figure 8 visualizes the frame negotiation process and alignment efforts during period 3.

Figure 8: Frame Negotiations in Period 3



In concluding part two of the findings, we have gained a better understanding of how the negotiation of meaning about crypto-assets developed through periods of divergence, intensification and stabilization. We have also learned that negotiations can intensify and accelerate institutional meaning and decision making into a specific and focused policymaking trajectory. Table 4 presents a summary of each frame that includes the evidence of the differences

[29]https://www.mastercard.com/content/dam/public/mastercardcom/eu/europe-lfi/public-policy/pdfs/Mastercard_MiCA.pdf

between advocates and contesters of a frame, the frame shifts, and the trajectory of frames. Next, part three will present the empirical findings of the framing mechanisms employed by the working group.

	Privacy frame	**Criminal frame**	**Sustainability frame**	**De-risking frame**	**Global Stablecoin frame**	**Hybridity frame**	**Economic Impact frame**
Actors advocating/sharing the frame	EU policymakers, EDPB, European Blockchain Observatory and Forum	EBA, ECB, FATF, EU policymakers	The Greens and the Socialists of European Parliament, EBA, European Blockchain Observatory and Forum	The working group	ECB, FSB, G20, FATF, CPMI, EPP of European Parliament	The working group	The working group
Definition of frame	Crypto-assets as a potential data protection issue	Crypto-assets as a money laundering and terrorist financing issue	Crypto-assets as an energy consumption issue	Crypto-asset market discrimination due to high risk-assessments	Crypto-assets as a monetary sovereignty, financial stability, and monetary policy issue	Crypto-assets are hybrid financial instruments and categorizations are artificial	Crypto-asset market discrimination due to focus on risks of global stablecoins
Diagnostic framing (advocates)	Crypto-asset's distributed ledgers potentially have inherent data protection issues (individualization and data erasure)	The transfers of crypto-assets pose risk to money laundering and terrorist financing standards	Some consensus mechanisms of distributed ledgers have high energy consumption levels	De-risking measures are the biggest risks for crypto-asset service providers	Global stablecoins could become systemically important in and across one or many jurisdictions, including as a means of making payments.	Separating between investment and payment tokens is an artificial distinction	Restricted access to banking, de-legitimization, and industry risk-labelling
Diagnostic framing (contesters)	Disconnecting transactional data on the distributed ledger from personal data	Traceability property allows for identification of illicit activity	The crypto-asset industry is one of the greenest industries	Crypto-asset business models are high risk to both investors and consumers	Global stablecoins could become systemically important, yet not all stablecoins pose those risks	Crypto-assets could have similar functionality to fiat currencies	Crypto-asset business models are high risk to both investors and consumers
Prognostic framing (advocates)	Private permissioned ledgers may be more compliant than public permissionless ledgers	More transparency in crypto-asset transactions	Proof-of-stake consensus mechanisms are more environmentally friendly than proof-or-work consensus mechanisms	Legitimization and enablement of access to funds (either via commercial banks or central banks)	Full transparency of global stablecoin arrangements must be provided upon issuance	Regulation should focus on the use of the instrument	Lowering risk measures to ensure Europeanization, job creation and industry development

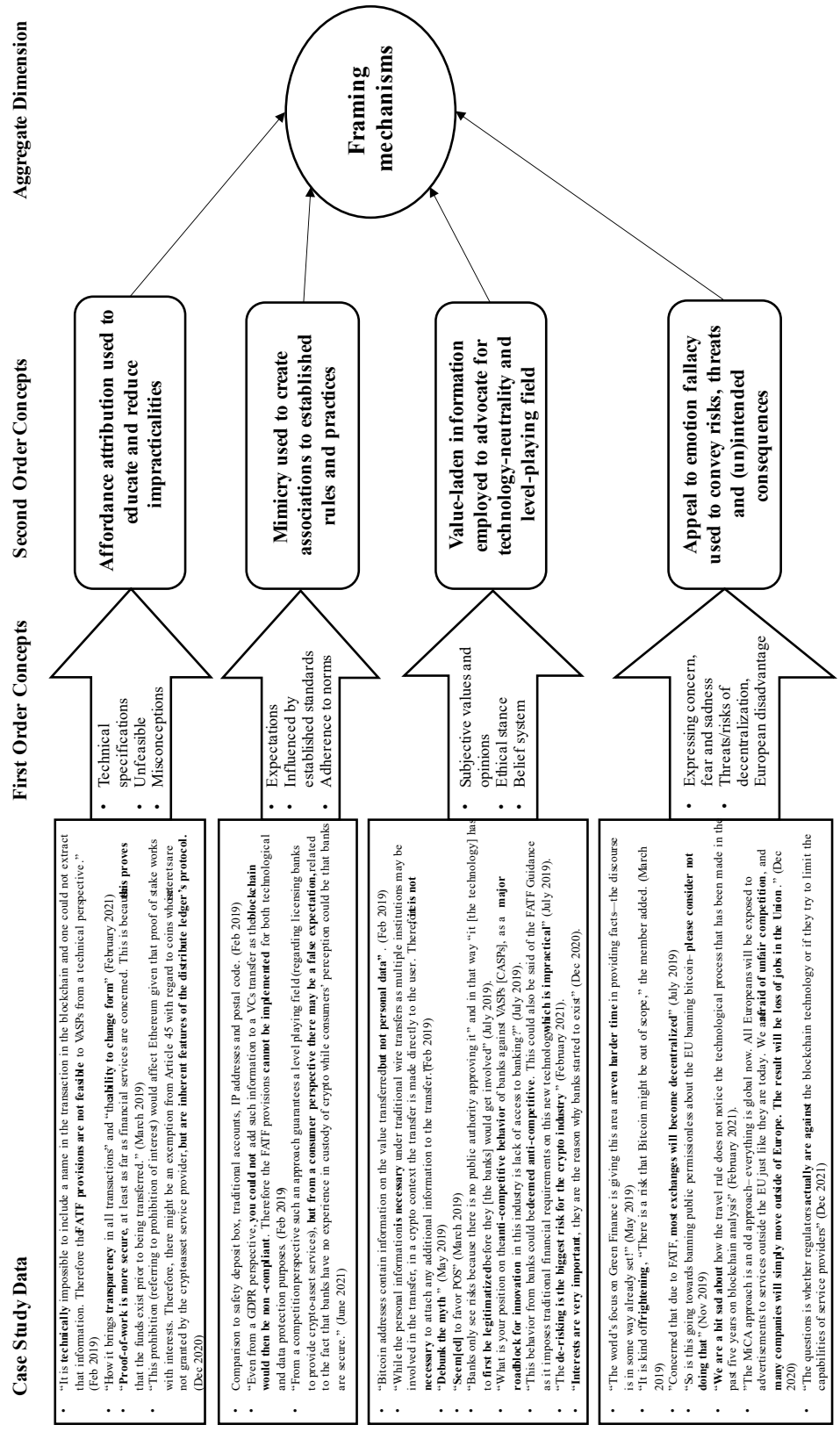
Prognostic framing (contesters)	Emphasizing that the distributed ledger only contains references to identifiable data through third parties (gatekeepers)	The use of blockchain analysis tools help exclude most illicit transactions	Reframes the discussion to be about energy production, not energy consumption	No solution outlined - Balancing act between innovation and protection	Not all types of crypto-assets cause systemic risk	There may be buckets to deal with the different characteristics and risks of tokens	No solution outlined - Balancing act between innovation and protection
Motivational framing (advocates)	Calls for the EDPB to perform analysis	FATF issues global recommendation to comply with standards	Calls to promote energy sustainable crypto-asset distributed ledgers	Mobilize support for deeming measures anti-competitive	Urges regulatory efforts around global stablecoin issuance	Justifies the hybrid functionality of crypto-assets	Mobilize support for deeming measures anti-competitive and against the EU vision of a strong market
Motivational framing (contesters)	Advocates for technology-neutral regulation	Urges policy makers to consider new technological developments	Advocates for technology-neutral regulation	ESAs risk warnings over time	Urges balanced regulatory approach to protect innovation	Not detected in data	EBA calls for input on de-risking
Frame trajectory	Originates in 'divergence' period and dissipates in the 'intensification' period	Originates in the 'divergence' period whereafter elements extends into the global stablecoin frame in the 'stabilization' period	Originates in the 'divergence' period and persists throughout the 'stabilization' period	Originates in the 'divergence' period, extends into the hybridity and the economic impact frames in the 'intensification' period and persist throughout the 'stabilization' period	Emerges in the 'intensification' period and persists throughout the 'stabilization' period	Emerges in the "intensification' period and persists throughout the 'stabilization' period	Emerges in the "intensification' period and persists throughout the 'stabilization' period

5.3 Part Three: Unfolding the Framing Mechanisms

In addition to outlining the evolution of the framing contests (part two), the final aim of the analysis went beyond the exploration of frames and conflicts to identify the framing mechanisms employed by the working group in their attempts of framing and reframing the different issues. Following Gioia et al., (2013), figure 9 presents the evidence demonstrating the purely inductive approach (Kaplan, 2008), from case data to framing mechanisms. The analysis results in the identification of four aggregated framing mechanisms that were employed by the working group in cross-combinations, temporally, across frame issues. These were*:* affordance attribution, mimicry, value-laden information and appeal to emotion fallacy. They involve what Campbell (2005) refers to as "the strategic creation and manipulation of shared understandings and interpretations" (p.49) aiming towards changing interests, belief systems and possibilities for change. Throughout the construction of frames in interactions, the working group employed either one or multiple of these framing mechanisms to reinforce the frames they were advocating or in the attempt to contest other frames. The following introduces each framing mechanism in its own right before three subsections present a narrative account of their use.

The framing mechanism of affordance attribution involves the attribution of positive or negative connotations to the functional and social properties (affordances) of crypto-assets. The mechanism was identified from discussions that were focused on the technicalities of crypto-assets where the working group framed certain policy directions as unfeasible to the nature of the technology. In general, the working group focused on highlighting features and functionality of the novel technology to educate policymakers and reduce possible regulatory impracticalities to the emerging crypto-asset industry. Due to the expertise of the working group, the use of this framing mechanism was often supported by a variety of facts or technical specifications. The framing mechanism of mimicry entails importing definitions and associations to already established rules and practices within financial service regulation onto crypto-assets. The working group framed certain regulatory expectations to gain regulatory legitimacy. In using this framing mechanism, the working group applied rhetoric of the *known world* to that of the new world. The framing mechanism of value-laden information highlights the subjective nature of framing efforts by the working group. Here, underlying belief systems and ethical stances support the advocacy for technology-neutrality and a level-playing field of the new industry. The framing mechanism of appeal to emotion fallacy involves leveraging emotions such as concerns, fears and sadness to convey the risks, threats and unintended consequences of proposed policy action. While affordance attribution, mimicry and value-laden information can be considered cognitive mechanisms (value-laden information mechanisms can also encompass emotional dimensions), appeal to emotion fallacy is an affective way to achieve understanding and compassion. Figure 9 illustrates examples from case data leading to the discovery of the four framing mechanisms employed by the working group.

Figure 9: Framing Mechanisms Employed by the Working Group



5.3.1 The Use of Framing Mechanisms in Combination

First of all, even though the formal stages of policymaking require discussions to undergo both technical and political rounds, the findings indicate that the technical sensemaking process in the trilogues (interinstitutional negotiations between the European Commission, European Parliament and the Council of the EU) were rushed due to the urgency of regulating global stablecoins. Initially, the framing mechanism of affordance attribution was used predominantly by the working group to support the knowledge creation of the policymakers. Here, references to the nature of crypto-assets' information systems and artifacts were used to reinforce the inherent properties of the technology in support of a certain argumentation by the working group. For example, in efforts to divert focus to away from viewing the traceability negatively in light of data protection matters, the working group instead attributed a positive connotation to traceability by framing it as a solution to the criminal frame constructed by supranational actors. Over time, the industry continued to educate policymakers across different issues, e.g., on the abstract distinction of payment tokens due to the hybrid nature of crypto-assets or on the misunderstanding of interest being an "inherent feature of the distributed ledger's protocol" (WGm1, December 2020). Following the draft proposal of MiCA, the framing mechanism of affordance attribution reinforced the unfeasible and impractical consequences of specific recitals and articles. While MiCA exemplified a rhetorical closure to political issues, the technical process of meaning making had not stabilized and was(is) still ongoing.

In many scenarios, the working group contested frames using multiple framing mechanisms at the same time. In contesting the criminal frame and the proposed solution by FATF to counter money laundering and terrorist financing, the working group used a mix of affordance attribution, mimicry and value-laden information framing mechanisms. This three-folded strategy aimed to convey technical unfeasibility, non-compliance to existing rules and innovative capabilities to reduce impracticalities and ensure a technology-neutral regulation. Due to the unchanging FATF recommendation over time, the working group started to also appeal to emotion fallacy as they instead communicated how "we are a bit sad about how the travel rule does not notice the technological process that has been made in the past five years on blockchain analysis" (WGm6, February 2021). While the unchanging criminal frame let to the working group to shift towards appealing to emotion fallacy, the development of the frame contest concerning sustainability showed a different change in response by the working group.

From initially expressing concerns and fears over the increasing support of possible banning P-O-W consensus mechanisms (and with it Bitcoin), the working group started to use value-laden information to redirect the debate to be about energy production and comment how the crypto-asset economy "is one of the greenest industries" (WGm1, September 2021). The strategy behind using the value-laden information framing mechanism and "debunk the myth" (WGm3, May 2019) when contesting the sustainability frame resonated with the working group's interest of having a technology-neutral regulation but also resonated with the general technology-neutral approach in the creation of new governance mechanisms by European regulators. This point brings up the notable conflict that appeared throughout the policymaking process; how to create

technology-neutral regulation around technology that due to its inherent properties projects itself in a social-political frame.

In order to create some sense of shared understanding, familiarization and belonging to the world they know, using the terminology of Van Hulst and Yanow (2014), the working group often employed mimicry framing mechanisms to compare crypto-assets with already known technologies, practices or rules/regulation. Mimicry is a known cultural-cognitive mechanism within institutional work theory (Butler & Hackney, 2015; Butler & Hackney, 2021; Kokshagina et al., 2023; Lawrence & Suddaby, 2006). One way the working group used it was to argue for why crypto-asset addresses (numerical expression on the distributed ledger) should be viewed similar to safety deposit boxes, traditional bank accounts, postal codes or Google Maps. The comparisons made were to known technologies that were not considered applicable under the GDPR. In combination with value-laden information framing, the working group therefore argued how "bitcoin addresses contain information on the value transferred, but not personal data" (WGm, February 2019). Over time, the use of mimicry expanded to motivate certain changes to the MiCA text as they reframed policy issues in ways that resonated with the Union's vision of providing consumer protection. An example of this was found in the argumentation of why incumbents should also undergo a licensing process in order to be able to provide crypto-asset services. Here, the working group reasoned that "from a competition perspective such an approach guarantees a level playing field [regarding licensing banks to provide crypto-asset services], but from a consumer perspective there may be a false expectation, related to the fact that banks have no experience in custody of crypto while consumers' perception could be that banks are secure" (WGm1, June 2021). This example highlights how the working group build on mimicry to argue that CASPs are better providers of consumer protection.

5.3.2 Embedding Technology under Existing Regulation

Throughout the interactions with policymakers, the working group also used mimicry to associate crypto-assets artifacts with the existing definitions of funds and means of payments. The aim of such association was to include crypto-asset services under the existing regulation for payment services set out in the second payments service directive (PSD2). The associations defined in public reports were published from a variety of political stakeholders, sometimes directly attempting to define crypto-assets, and sometimes in relation to other regulatory developments around financial services. During the initial period, the working group applied the work of the Financial Action Task Force (FATF) as well a proposal adopted by a European Parliament plenary vote in an effort to frame crypto-assets funds to gain the rights belonging to the institutionalized practice of 'means of payment'. The FATF was an international actor that had begun its work on the definition of (then called) virtual assets in 2019. In a working group meeting, the FATF definition was discussed internally among members and the reference made to funds in their definition of virtual assets caught the attention of the group as one member voiced, "this is interesting because if virtual assets are defined as funds, we can issue prepaid instruments on the basis of funds" (WGo, March 2019). Alongside the work of FATF, the European Parliament plenary adopted a proposal for a "directive on combating fraud and counterfeiting non-cash means of payment", which put crypto-assets in association with *non-cash means of payment* (plenary

vote, March 2019). Again, the working group interpreted this kind of wording as something that "can somehow be read as endorsing the fact that crypto is a payment, or at least part of a payment" (WGo, March 2019).

5.3.3 Rhetorical Resonance and Metaphors

On the backdrop of the Libra announcement, the economic impact frame became more visible throughout interactions with policymakers. To reinforce this frame, the working group drew on rhetoric of *anti-competitiveness* and metaphors of *roadblock of innovation* to deem the action (or the lack of action) from banks and supranational actors (FATF) unethical. Questions to policymakers were direct such as: "what is your position on the anti-competitive behavior of banks against VASPs [CASPs], as a major roadblock for innovation in this industry is lack of access to banking?" (WGm6, July 2019). The use of value-laden information to stimulate the ethical stance of policymakers was used mainly to draw attention to the creation of a level-playing field for the emerging crypto-asset industry where access to banking (de-risking) was viewed as "the biggest risk for the crypto-industry" (WGm6, Feb 2021). As a response to the dominance of the global stablecoin frame, the findings reveal a subtle shift in the industry's framing strategy, intensifying the use of framing mechanisms strengthening and enforcing the economic impact frame.

In conclusion, it is worth mentioning that the employment of framing mechanisms by the industry working group was a conscious act. The four framing mechanisms expanded upon in this section support the main discursive strategy set out by the working group in their pursuit to create favorable regulatory outcomes for the industry. Prior every meeting with policymakers, the working group discussed views and arguments for each issue that was to be brought up. In cases where views differed within the working group, the argumentation was decided to be more neutral instead of suggesting a preferred solution. A notable approach by the group is to be found in their attempt to resonate with the wider EU institutional visions of technology-neutrality, consumer protection, Europeanization and fair level-playing field throughout their framing of issues. Especially the resonance to the creation/protection of a strong European economy 'against' the global economy was created through the appeal to emotion fallacy mechanism.

5.4 Summary of Findings

In negotiating meaning with policymakers, the working group participated in a frame contest, or more accurately, there were multiple frame contests within the policymaking process on crypto-assets. While my participation in the working group did not extend into the final hours of debating the MiCA regulation, the three years of engagement provided invigorating insights into how institutional meaning and decision making took place through interactions between industry representatives and policymakers. The findings indicate that regulators of technology, and specifically digital technologies, are facing new challenges in balancing innovation and protection. While many regulators are reluctant to regulating an emerging field, the case of crypto-assets highlights how emerging technologies can embed inherent political properties that projects themselves in a socio-political frame, triggering proactive regulatory action. As a summary of my analytical journey, the following paragraph describes a reflection made by a working group

member in the period of stabilization. This reflection sums up the institutional meaning making process, as seen from the perspective of the working group.

A Paradigm Shift. During a February 2021 working group meeting, a member referred back to 2019 and the initial assessments from policymakers on the impact of the emerging crypto-asset industry. The following quotes and narrative account are from WGm6 exclusively. The member noted how policymakers concluded that "there was not really an effect to the traditional financial markets from a stability or risk perspective". Instead, the concern was mainly on anti-money laundering (the criminal frame) in which the EU decided to *ringfence* the space with the AMLD5. In AMLD5, obliged entities are the ones that deal with transactions between traditional fiat money and crypto-assets. In other words, as noted by the member, there were "boundaries between the two worlds". However, "now there is a new appetite to go into the industry and regulate from the inside", the working group member continued to explain and phrased this as "a completely new ballgame" especially for policymakers who are "used to the classical financial world". By referring to how traditional systems such as SWIFT (global financial messaging system) can be seen as "a trust relationship," the member expressed that "it really doesn't make sense [to apply such old frameworks to a new space] without considering the functionality provided by this new technology". The working group member believed that "this [new regulatory approach] requires regulators to level up in terms of understanding of how technology works", for example "how it brings transparency in all transactions" and "the ability to change form". As a concluding remark, the member said that the MiCA regime shows how "we are moving *into a new paradigm* when regulating from the inside".

The findings of this research shed light on the evolution of frames and framing activities between representatives from the organizational field of crypto-assets (collectively through working group) and policymakers as well as on the framing mechanisms employed by the working group in the frame negotiation process. In combination these findings provide nuanced insights and understanding of the way institutional actors dynamically interacted in the construction of the crypto-asset concept that came to be defined through the MiCA regulation. In the following subsection, the findings are summarized across three reflections on the frame negotiation process. These are: shaping of a known world, resonating with the political vision, and dynamically responding to change that contribute to our understanding of institutional meaning and decision making in policy-technology contexts.

5.4.1 Understanding Institutional Meaning and Decision Making in Policy-Technology Contexts

With the goal to explore the institutional work engaged in by the emerging field of the crypto-asset industry, the first research question guided the analysis to focus on the construction, contestation and stabilization of meaning. Figures 2, 3 and 5 portray this interactive meaning making process over time. The second research question guided the analysis to focus on the use of framing mechanisms in the process (figure 9). Combined, the findings of this research contribute to the understanding of institutional meaning and decision in a policy-technology context. The findings are presented through the identification of seven frames, two frame shifts

and four framing mechanisms over three periods of divergence, intensification and stabilization. The framing mechanisms are considered an integral part of the framing process and used in combination *throughout* the periods.

Shaping A Known World. Initially policymakers and other supranational actors (ESAs, ECB) deliberately framed crypto-assets around policy issues that were named, selected and categorized in efforts to shape a knowing world (Van Hulst & Yanow, 2014). The meaning construction process occurred around familiarized concepts to navigate the uncertainty around emerging technology. To begin with, the interpretations about crypto-assets circulated around mainly the three policy issues of privacy (protecting citizens' data in crypto-asset information systems), criminality (fighting the illegal financing of criminal and terror activity), and sustainability (creating energy-sufficient financial systems). While these frames of the policymakers developed in parallel, the industry constructed a contesting frame; the de-risking frame focusing on lowering risk assessments on crypto-asset companies. To convey meaning about crypto-assets and align the industry's interests with that of policymakers, the discursive strategy of the industry included the use of different framing mechanisms. For example in period 1, in contesting the criminal frame and the proposed solution by FATF to counter money laundering and terrorist financing, the working group used a mix of affordance attribution, mimicry and value-laden information to reinforce the meaning of the de-risking frame by advocating for interpretating crypto-assets as less risky compared to other financial products with the aim to change the risk-perceptions towards positive possibilities for action.

Resonating with the Political Vision. In addition, the findings show how actors frame crypto-assets in the broader socio-political debate concerning sustainable finance (green finance). Here, the institutional context plays a big role in how crypto-assets were perceived and framed throughout the policy negotiations, where resonance to the political vision was an important rhetorical element. Especially, the analysis indicated how the success of the green party in the parliamentary election of May 2019 played a factor in the volume and momentum of opinions on the matter and in consequence, the reframing efforts by the industry. This was observed throughout working group meetings where the energy consumption vs. energy production and the security trade-off were discussed extensively. This frame was particularly agenda-setting and difficult for the industry to contest, so as to not lose the trust of policymakers, where trust-building is seen as an important factor in attempts to successfully align frames (Schneider et al., 1995).

The challenge of contesting the sustainability frame became clear through a shift in the use of framing mechanisms by the working group. To not only appeal to emotion fallacy, expressing fears and concerns about a possible regulation of technical features (P-o-W mechanisms) of crypto-asset information systems, the industry started to contest the sustainability frame by framing crypto-assets in terms of their subjective values of the crypto-asset industry being *greener* than traditional finance and advocating for technology-neutral regulation as an ethical stance to the developments. Without doubt many people today, also members of the working group, support transitional measures towards greener industries, yet the framing of this issue required a balanced approach by the industry to fit into the opportunity climate and temperament of this specific point in time (Campbell, 2005, p. 46-47) due to sustainability being not only a field issue, but a societal

issue. While not possible to directly confirm from this research, the work performed by the industry group to reframe this issue, in terms of energy production and technology-neutrality, may be part of different actions leading to the trialogue's conclusion of not embedding specific measures regarding energy consumption into MiCA. negotiation of meaning, occurring over many years, around both features of technology and its implications in the broader socio-political environment portrays the political dimension to technology development.

Dynamically Responding to Change. The longitudinal observations led to the identification and analysis of shifts in the framing of crypto-assets. The first shift was detected following the 2019 Libra announcement. This frame shift is conceptualized as a type of frame amplification according to Snow et al., (1986), which can relate to both value amplification and/or belief amplification. It is clear from the findings that the values associated with public issuance of money and trust were highlighted and idealized by different supranational actors (intergovernmental actors, ECB, EPP European Parliament). These actors thus used value amplification to mobilize support for regulatory action against global stablecoins where financial stability was portrayed as a threat to the world. In addition, many actions were taken (public position papers, speeches) to focus attention and amplify certain beliefs and historic events that were associated with Facebook, such as the lack of trust due to the 2018 exposure of the Cambridge Analytica case, in which Facebook allowed the exploitation of personal data from its platform. The mobilization of support caused this frame shift and led to the emergence of the global stablecoin frame that came to dominate the institutional meaning and decision making from then on.

A second frame shift was revealed by the analysis and conceptualized as a type of frame extension (Snow et al., 1986). This shift led to the extension of the de-risking frame into a hybridity frame and an economic impact frame. The emergence of the hybridity frame was not a result of an abrupt shift, but a subtle shift due to industry's impression of some policymakers and incumbents continuous lack of knowledge and interest in categorizing crypto-assets despite its hybrid nature. In that way, the industry attempted to advocate the hybridity frame to policymakers by extending their knowledge capacities about the properties (functional affordances) of crypto-assets. They found it irrelevant and misfitting to create abstract categorization of crypto-assets through regulatory measures when the technology enabled transferability despite the intended use of different crypto-assets to become a means of exchange.

The second frame shift identified extended the de-risking frame into the broader frame of economic impact, also advocated by the working group. This evolution was observed in the light of the change of regulatory vision by European policymakers. Initially policymakers were looking to embed crypto-assets into existing regulatory frameworks (of e.g. MiFIDII and EMD2), yet as a response to Libra and the construction and dominance of the global stablecoin frame, policymakers went on to create a standalone regulatory regime for markets in crypto-assets. Due to the more rigid and inflexible instrument of a regulation compared to directives and other forms of policy action, the industry broadened its scope of gaining political legitimacy (one goal being to lower risk assessments) to resonate more with the political visions of the EU. These were for example the creation of an attractive European business environment for both employment and business developments as well as the emphasis on European competitiveness. The development

of the economic impact frame also intensified the use of framing mechanisms employed by the industry to advocate for and enforce economic opportunities for European organizations in the crypto-asset ecosystem. Especially the increasing use of value-laden information was detected in the industry's efforts to stimulate the ethical stance of policymakers concerning the core foundation of the European economic vision of having a level playing field, not only among member states, but among players in the financial system and between European and non-European players.

In summary, the findings reveal a highly contested framing journey of crypto-assets, including high interpretive flexibility, frame shifting (amplification and extension), as well as elements of stabilization (rhetorical closures). However, the process also suggests continuous alignment due to continuous contestation of frames, for example regarding the provision of interest. Intense negotiations decreased the otherwise high interpretive flexibility of the crypto-asset concept dominating early policy discussions, and with the shock of Libra and following regulatory urgency to govern such global stablecoin arrangements, specific types of crypto-asset information systems and artifacts came to be seen as a threating phenomenon to existing monetary policy and financial stability. Drawing on the work of Pinch and Bijker (1984) and their view on the stabilization of frames, the new regulatory regime of crypto-assets (MiCA) is a manifestation of the preferred political interpretation of technology, constructed by various institutional actors throughout a frame negotiation process. The results of this research highlight the persuasive element of framing and reframing technology. Moreover, the empirical case demonstrates the interwoven character of meaning construction between actors from the organizational field and policymakers, as they face uncertainty, complexity, and novelty in their assessment of an emerging technology in light of existing institutional arrangements and current knowledge structures.

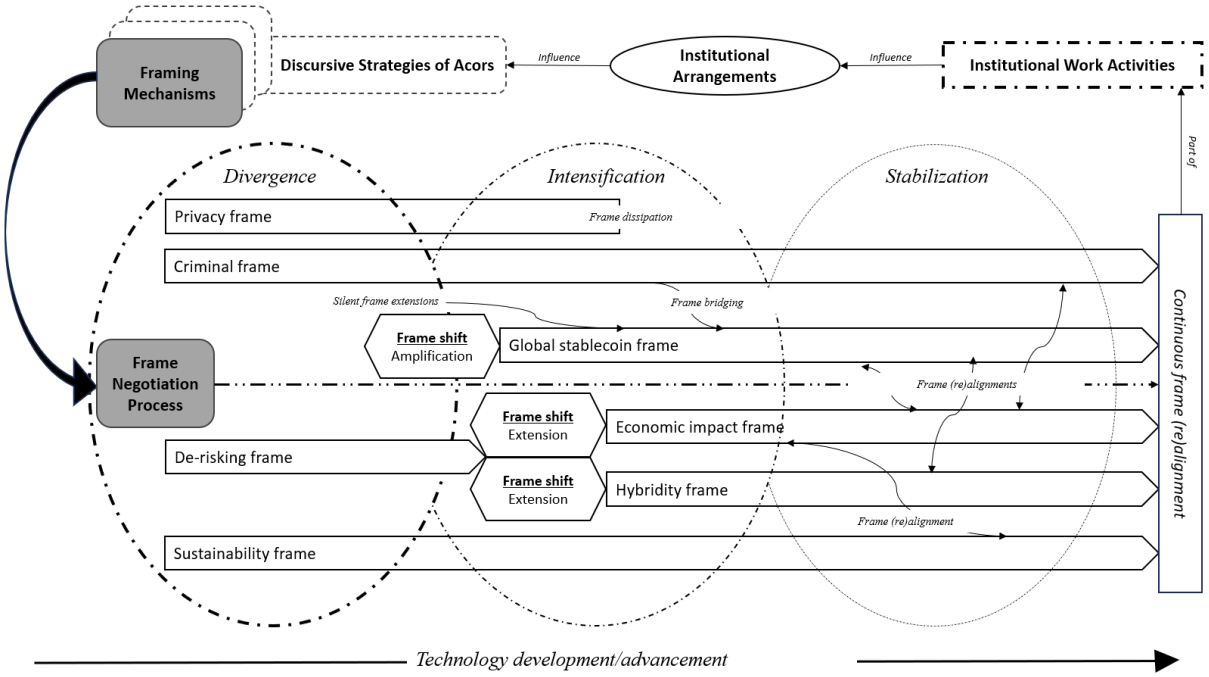
CHAPTER 6. DISCUSSION

Digitalization challenges existing regulation of markets, where institutionalized practices, roles and artifacts are up for re-interpretation. Meaning and decision negotiations take place when actors engage in the creation, maintenance and disruption of institutions, yet this process-view is often taken for granted (Edelman & Suchman, 1997; Kokshagina et al., 2023; Novak, 2019; Purdy et al., 2019). However, the significance of exploring such bottom-up, interactive negotiation processes that shape and are shaped by the technology-policy context, contribute to our understanding of institutional meaning and decision making in times of institutional change. Emphasizing the pivotal relationship between policy uncertainty and technological innovation, the findings add to research by scholars such as Marcus (1981) and Novak (2019), who highlight the profound impact of policy on the trajectory of technology and market developments. Drawing inspiration from prior research on technology regulation (Butler et al., 2023; Kokshagina et al., 2023; Novak, 2019), interactive framing processes (Purdy et al., 2019) and framing mechanisms (Butler & Hackney, 2015; Butler & Hackney, 2021; Campbell, 2004; Campbell, 2005), this dissertation makes novel and unique theoretical and practical contributions to institutional theory and information systems research.

6.1 Theoretical Contributions

To introduce the theoretical contributions of this dissertation, a process model is presented in figure 10 as a contribution to the IS research domain on crypto-assets. This model broadens our understanding of how and why certain decisions were made in regulating crypto-asset markets. Specifically, it highlights how the policymaking process (frame negotiation process) evolved over time and how meanings about crypto-assets were not *given*, but *framed.* The process model illustrates how frames originate, emerge due to frame shifts, persist and/or dissipate over time and across periods. While technology continue to develop and advance over time, frames in the socio-political environment will also continue to go through periods of frame alignments. The period of stabilization indicates elements of stabilization, highlighted by for example rhetorical closure, yet institutional meaning and decision making concerning emerging digital technology is an infinite process developing alongside developing novel technology arrangements.

Figure 10: Framing Contest of Crypto-Assets Policymaking in the EU



6.1.1 Understanding Negotiation Strategies through Mechanisms of Framing

The process by which both interpretations and interests are constructed and negotiated is influenced by use of framing mechanisms. The results of this dissertation present four framing mechanisms observed to be used, by actors from the emerging field in the framing of crypto-assets in the policymaking process, to achieve frame alignment. These are: affordance attribution, mimicry, value-laden information, and appeal to emotion fallacy.

The identification of the four framing mechanisms add to our existing knowledge about how actors, and more specifically in this work, a new field strategically frame their interest against an existing industry and established financial service regulation norms. As set forth by Campbell, "framing is a cognitive mechanism that is used to alter how actors perceive identities, interest and possibilities for change" (Campbell, 2005; p. 49). With the aim to push the explanation of framing mechanisms one step further, the four mechanisms found contribute to our understanding of discursive techniques used to construct and change frames throughout institutional meaning making processes. This finding builds upon earlier research highlighting the opportunity of mechanism-based theorizing to understand and explain the "cogs and wheels" (Davis & Marquis, 2005, p. 336) behind collective outcomes where actors diagnostically, prognostically, and motivationally engage in meaning making activities. Where existing literature highlights policy analytical ways of framing (Van Hulst & Yanow, 2014) or the use of language in framing policy issues (McGrath, 2007), there is still rare accounts of the types of framing mechanisms employed to reach a certain outcome (Davis & Marquis, 2005). The delineation of the four framing mechanisms, as constituting the negotiation strategy of the working group, contributes towards the theorization of agency in institutional change processes. Specifically, within the boundaries

of where a new industry blends with the old (Davis & Marquis, 2005), creating the opportunities to investigate micro-mobilizations within frame contests.

The four framing mechanisms found contribute to both institutional theory and framing analysis. Within institutional theory and existing theory on institutional work, the types of framing mechanisms found adds a layer to the understanding of not only *what* types of institutional work activities the working group engaged in, but *how* actions were carried out throughout processes of institutional maintenance, creation and disruption (Lawrence & Suddaby, 2006). In other words, it explains "an assembly of elements producing an effect not inherent in any one of them" (Davis & Marquis, 2005, p. 336) that actors use to carry out coercive, normative and cultural-cognitive forms of institutional work (Butler & Hackney, 2015, 2021). Within theory of frame and framing analysis, this work contributes towards developing further the interactive framing approach, promoted by policy (Van Hulst & Yanow, 2014), IS (Bijker, 1995; Davidson, 2006) and social movement (Campbell 2004, 2005) scholars, where the nuances of framing activities expand our understanding of the strategic choices of agents throughout their navigation of embedding emerging technology within institutional structures. The following paragraphs discuss the implication to theory concerning each framing mechanism.

Affordance attribution was used as a mechanism to frame crypto-assets by ascribing positive or negative connotations to the functional and social properties and possibilities for action. This mechanism invited to a discussion about the inherent properties of crypto-assets; aspects that were often unknown for policymakers unless they had a strong technical background. Due to the lack of knowledge among policymakers, this framing mechanism supported activities that focused on educating policymakers about the technology. However, as the findings illustrate, education is not a neutral act. That is because the *act* of attributing certain affordances (negative and positive) to crypto-assets held cognitive biases that included preferences for policy action. For example, by raising awareness of how *any* crypto-asset affords transferability (to "turn any token into a payment token"), supported the working group's preference for regulating crypto-assets based on their usage situation instead of categorizing them up front as payment, investment or utility tokens. The implication of such engagements, as also highlighted in existing literature, is navigating self-interest in institutional change (Campbell, 2004). It is natural that actors, advocating for the adoption of technology, frame an emerging technology from an opportunistic point of view. For example, Kokshagina et al., (2023) found that digital platforms argued that "algorithmic control provided the best possible service for users and media companies and promoted free and dynamic competition" (p. 169), despite the criticism over algorithmic control. Engaging in frame contests about new technology that is yet to be fully understood due to its constant developments, and that is affected by self-interests, is thus a highly political battle where affordances are weighted against the political opportunity structure (Campbell, 2005; McAdam et al., 1996; McAdam et al., 2001; Tarrow, 1998).

Another example of the use of this framing mechanism by the working group is to be found in the frame contests of the criminal and the privacy frames. By pointing out how crypto-assets affords traceability, which would benefit anti-money laundering activities for supervisory authorities, the findings show that the working group was successful in contesting the privacy frame advocated

by policymakers because of the shared positive connotation of the traceability functionality between the working group and policymakers. In efforts to frame crypto-assets as a possibility for supervising criminal activity, they attribute positive affordances to new functionality of the technology. While it is known that affordances are perceived differently among social actors (Armani Dehghani et al., 2023; Lotti, 2019; Spohrer & Risius, 2022), the results of this research indicates that the perception of affordances often rely on actors' preferences in the prognostic framing of technology and policy action, and less so in the diagnostic framing activities.

The framing mechanism of **mimicry** explains the framing efforts by the working group to import definitions and associations from other pieces of EU law onto the market of crypto-assets to gain regulatory legitimacy. The influence of mimetic pressures is known across literature within institutional theory to impact the adoption of technologies (Butler & Hackney, 2015; Butler & Hackney, 2021; Chu et al., 2021). Moreover, mimetic presures are found to support the "sense-making, decision-making, and knowledge creation" processes (Butler & Hackney, 2021, p. 3). Similarly, within policy framing analysis, one of the framing *acts* referred to as naming (Van Hulst & Yanow, 2014) describes the act of framing where "concepts whose meaning(s) in *other* situations is (are) known and understood, such that their use in *this* situation makes what is going on clearer (Van Hulst & Yanow, p. 99). Mimetic pressures are thus applied to locate technology "in a larger system of meaning" (Oliver & Johnston, 2000, p. 8). So, when actors create references and associations to the *known world*, including established rules and practices, the framing mechanism of mimicry encourage a specific interpretation of the novel technology to reach certain types of policy action. While not always a conscious act, this framing mechanism was observed to be used as a way to circumvent ambiguity and uncertainty (Van Hulst & Yanow, 2014) that was present throughout the policymaking process, but especially in the period of divergence. As such, the working group employed mimicry as a framing mechanism by referring, comparing, and associating to the *known,* in efforts to construct meaning about the *new* and bring the two worlds together. Examples of its use are found across the frame contests, where the following provides for three explanations of its use. One, in the working group's attempt to define crypto-assets as funds in order to be regulated as a means of payment under the PSD2. Two, in the efforts by the working group to legitimize interest payments by referring to an article in the EMD2 where ancillary services are allowed under certain circumstances. And three, in the arguments against interpreting the functional affordances of crypto-assets to conflict with the GDPR, the working group creates comparisons to other technologies and situations (safety deposit box, google maps, traditional bank accounts) where GDPR does not apply. These types of actions enrich both our empirical understandings of *how* actors engaged in the framing process while also contributing to theoretical extensions of conceptualizing "mechanisms and their application and use in the IS field" (Butler & Hackney, 2021, p. 3).

The use of **value-laden information** as a framing mechanism is inspired by research that examine the use of values in framing issues (Brewer & Gross, 2005; Snow et al., 1986), where value-based judgments are found to support a dominant logic (Butler, 2024). It is even found that frame contesters are able to invoke the same value, despite their opposing political agendas (Brewer & Gross, 2005), due to for example the way actors idealize a certain value (e.g. family, equality,

religion) in respect to the issue at hand (Snow et al., 1986). The findings of this research highlights the use of subjective values and opinions throughout working group efforts to frame the technology and policy issue at hand. When engaging in discussions about technology, the use of this framing mechanism clearly portrayed the belief system of the actor (both working group and policymaker) and the ethical stances toward interpreting the situation. The importance of values and beliefs in framing policy issues is known across literature streams (Brewer & Gross, 2005; Butler & Hackney, 2015; Butler & Hackney, 2021;Campbell 2004; Campbell, 2005; Chong, 1996; Junk & Rasmussen, 2019). They are known to be used in search for *common frames of reference* (Brewer & Gross, 2005), or *rhetorical resonance* (Campbell, 2005) to reach a state of being "cognitively connected to a specific policy position in the public arena and perception of policymakers" (Junk & Rasmussen, 2019, p. 489). Subjective values, opinions and beliefs were therefore not only found to support a certain perception of crypto-assets (static frame), but they were used in framing the interests of specific policy action by aligning the interests with dominant EU visions (for example technology-neutral regulation and the creation of a level-playing field). Statements by the working group such as "the de-risking is the biggest risk for the crypto industry" or "this behavior from banks could be deemed anti-competitive", exemplify value-laden judgments used by the working group to frame their interests, toward a competitive level-playing field between incumbents and FinTechs.

Appeal to emotion fallacy was used as a framing mechanism in a variety of situations throughout the frame contest. Existing literature found that the effect of framing on policy opinions and action operationalize through both cognitive and affective paths (Gross, 2008). Yet, the affective focus is most present within the work stream on *framing and emotions* in political science and political communication literature, and often less so the case in IS studies where focus orient more towards coercive, normative, and cultural-cognitive forms of framing (Butler & Hackney, 2015; Butler & Hackney, 2021; Jensen et al., 2009; Orlikowski & Gash, 1994). For example, in the technology frames of reference stream, frames are defined as the cognitive structures of agents (Orlikowski & Gash, 1994). Also, within social movement and institutional theory, framing is presented as a cognitive mechanism (Campbell, 2004, 2005). McGrath (2007) even posit that, within IS "the dominant position is to say nothing of emotions, suggesting that IS research and professional practice are purely rational processes, devoid of affections" or part of another explanation, "but not legitimate in their own right" (p. 281). The findings of this research provide a theoretical contribution to the current shortcomings of *noticing* and *paying attention* to the way emotions play part in framing technology in IS research. The following explains the two ways this framing mechanism was employed by the working group.

First, this framing mechanism was used as a way to express both negative and positive emotions in the interactions with policymakers. As one would expect, positive emotions were expressed when frame congruence was present (alignment of prognostic framing activities). Therefore, the analysis sought to mainly investigate scenarios where this mechanisms was predominantly used to express negative emotions to uncover frame misalignments. As a result, the working group used affective ways to achieve compassion and understanding, with the goal to *encourage* policymakers to change their interpretations towards the outcome of impacting dominant frames

of the EU bodies. It is known from prior research that some elements of specific frames can be more emotionally engaging than others (Gross, 2008). This is seen through the results of the analysis where, for example, when the working group realized that Bitcoin could potentially be banned within the EU, this was expressed as "frightening". Moreover, the expressions of negative emotions (sadness, fear) were used to project those emotions onto the receiver to receive some kind of understanding in return. In interpreting the use of this framing mechanism, I found that it was often used as *supplementary* to when the working group was lacking factual arguments to be used in contesting a frame. For example, concerning the possible prohibition of public permissionless crypto-assets (Bitcoin as an example) due to the rising societal focus on Green Finance. Here, providing facts in efforts to framing P-o-W systems as environmentally friendly, was risky and had the potential consequence of damaging the working group's trustworthy reputation. Instead, working group members often opted into using affective methods of framing their stance.

Second, this mechanism was also used as a way to indirectly threat policymakers regarding the unintended consequences that could arise due certain policy action. For example, as for the working group's perspective regarding competitive aspects of MiCA, the working group expressed concerns around unfair competition, which later transferred into the expression of fear regarding companies (and as a result jobs) leaving Europe to seek more pro-regulative environments. This example highlights the dual enactment of affective framing where actors frame technology and policy issues by their *understanding of the situation* as well as their *preference for action,* through emotional appeals.

6.1.2 Understanding Political Agendas of Policy-Technology Developments

As known from existing literature, the interactive framing perspective offers an opportunity to understand the nuances of socio-political conflicts that take place throughout a policymaking process. That is due to the complexity of the policymaking process (Novak, 2019; Butler et al., 2023) where research on institutional work has mostly focused on the *outcomes* of policy action (Boon et al., 2019; Fuenfschilling & Truffer, 2016; Garud et al., 2020; Pemer & Skjølsvik, 2017), engaging with the processes of bottom-up institutional meaning making (Purdy et al., 2019) provides an unique perspective to understand how our reality is constructed through the means of law (Berger & Luckmann, 1991; Edelman & Suchman, 1997). The policymaking process, wherein meanings are constructed and negotiated, can in this sense be viewed as the battlefield where actors constantly assess the situation at hand (Van Hulst & Yanow, 2014), and determine whether it is *play or fight* mode (Bateson, 1972). In other words, whether frames align or misalign. While the institutional logics perspective connects meanings to core societal logics (such as state, religion, family), framing highlights the competing interpretations taking place in interactive settings among institutional actors (Bijker, 1995; Purdy et al., 2019). This perspective informs both theory and practice paying attention to agency in the institutional change process (Campbell, 2004). To build upon these existing theories and concepts, the findings of this research provide a nuanced understanding to the socio-political process of technology sensemaking and policy formation. This understanding rests upon the existing notion that "along with members of the public, practitioners—we have in mind policy-makers, as well as partners in governance networks

and public administrators charged with implementing policies— are not always cognizant that problem definitions are not given, but "framed," let alone aware of how such framing takes place" (Van Hulst & Yanow, 2014, p. 105). The contribution to theory is to be found in the emphasis this research makes on the interpretive flexibility of technology, suggesting that the framing lens, currently used to a lesser extend compared to logics, provides excellent means to investigate complex digital phenomena through regulatory processes where European visions of technology-neutrality, pro-innovation and strong markets are challenged. Such opportunities open up discussions concerning inherent properties of artifacts and technology's manifestation in socio-political frames that shapes our social reality. This is all possible if we view problems around technology as *framed* instead of *given.*

The implication of political framing of technology dates back in time. For example, in 1980, Langdon Winner asks the question: "Do artifacts have politics?" (Winner, 1980). His work was published during a time when the social constructivist view of technology had started to receive proper attention, yet the attention to technology (properties, affordances) seemed of unimportance to the agenda of most social scientists (Winner, 1980). In Winner's efforts to bring attention back to the characteristics of the artifacts and the meanings of these characteristics as they are embedded in a social context, this work outlines two ways to view politics and technological innovation. First, by claiming that the design process, in which physical or technical structures (e.g., architectures or machines) are constructed, encourage or discourage certain types of actions and markets. These designs or arrangements can embed political agendas. For example, physical structures, such as city planning decisions, contain explicit or implicit political purposes. An example of such a political purpose is the decision behind public transportation routes in the United States, as it is mostly the lower class of citizens using buses. If these routes do not reach certain places, it can be seen as discouraging movement by some people in these areas (Winner, 1980). Similarly, an example from the history of financial technology, a political decision to illegalize checks as a method of payment, encourage a transition towards digital means of value transfer. Winner calls these external political properties *technical arrangements as forms of order,* which can be translated into how the *design* of our environments allow/disallow for the adoption, implementation and diffusion of technology. In reflecting upon this element of Winner's conceptualization of design, this case study exemplifies the examination of one aspect of the environmental design of crypto-assets, that being the regulation *of* the technology.

The second political property Winner illustrated is that there are artifacts that are inherently political technologies. These artifacts are political of nature and hence, their design is less flexible because their "technical systems are linked to specific ways of organizing power and authority" (Winner, 1980, p. 131). As the pioneering crypto-asset, the findings of this study shows how certain types of crypto-assets (for example Bitcoin) is undoubtedly an inherently political artifact/information system, originating from an organizing principle of complete decentralization compared to the intermediated and interdependent financial system. This came to be seen through frame contests where the inherent properties of the Bitcoin information system (such as traceability) were questioned against regulatory compliance matters (GDPR). Libra is another example of a type of crypto-asset designed with a certain political intent. While enabling new

possibilities for action in itself is not harmful, these new artifacts manifest themselves in a specific socio-political frame. As the findings indicate, that if this political agenda is of disruptive character, an intense political negotiation process will take place. Such intensification of institutional meaning making can take certain directions. As shown through the findings of this research, when inherently political artifacts project themselves in a certain socio-political frame, contradictory to that of the to the existing social-political milieu, the institutional response focus on designing the environmental boundaries (regulation) of possible institutional disruption. This contributes to our understanding of how the regulation of technology, exemplified with MiCA in this work, is a political tool to direct the design of the environment and create boundaries for the possibilities of action that conforms with the political agenda of that constituency, in this case being the EU.

Another implication of the findings concerning the political agendas turns towards recognizing the conditions of our institutional bodies as they engage in meaning making about emerging technology. Not only did inherent properties of technology project a certain socio-political frame causing political debate, also institutional actors, framed the properties of technology to support their own political agenda. An example of the nuances that the framing lens offers in explaining such political-driven processes, is the construction and negotiation of the two frames of privacy and criminal by policymakers. The findings show how the parallel construction of frames (of policymakers) did not necessarily indicate instant alignment. Instead, as found, the privacy frame and the criminal frame portrays an institutional tussle (Kokshagina et al., 2023) wherein the construction of both frames rely on the established regulation around data protection and anti-money laundering practices that conflict each other in their recommendation for regulatory action. This was recognized due to how the actors diagnosed, prognosed and motivated the issue and recommendation for action differently. Such tussle indicate that the construction of meaning is not only concerned with how actors are largely influenced by pre-existing institutional arrangements (Hinings et al., 2018), but also how actors perceive the technology's functional and social possibilities for action differently based on their political agenda and representation within different DGs. As a result, the dynamics between existing norms and political agendas come to direct policy action and with that the further opportunities for technology and market development. Without a process-oriented, interactive approach, we could have not come to understand the evolution of this tussle and what it means for the further development of crypto-assets and the business operations of service providers. This implication extends beyond the context of this research, where future policy negotiations (on other technologies) will most definitely show contesting elements between privacy and transparency measures of financial data.

6.1.3 Understanding Shifts in Technology Regulation as Responses to Digitalization

The examination of the framing contest observed throughout the policymaking process around MiCA brings into debate a more fundamental discussion, concerning the future of technology regulation that fits into the developing IS research stream on Technology Regulation (Butler et al., 2023). In addition to gaining nuanced understandings of the framing process, one implication of the findings contributes to the debate concerning the balancing act between regulation and innovation. While there is a shared agreement among actors from EU legislative bodies (Butenko

& Larouche, 2015) on the goal to foster innovation within Europe, the reference to innovation has dual meanings where preferences vary. The dual meaning is to either view regulation *for* innovation or to view regulation *of* innovation (Butenko & Larouche, 2015). This distinction, and perhaps the lack of agreement of which to foster, was evident throughout the policymaking process of crypto-assets, both between policymakers and between policymakers and the working group. The debate of the balancing act of regulation and innovation leads to what has been referred to in research as the *race metaphor*, or the *pacing problem* between technological change and regulatory action (Bennett Moses, 2011). Within IS research, this issue has already led to the view of reactive modes of technology regulation (Butler et al., 2023).

In adopting the interactive framing approach, insights into the bottom-up construction of meanings painted the picture of high interpretive flexibility concerning crypto-assets in the early stages of policymaking, also conceptualized as the period of divergence. Drawing on extant literature on technological frames in particular, attention has been given mostly to how an extended period of interpretive flexibility (of a technological artifact) could be problematic as the process would lack closure and stabilization among technological frames (Bijker, 1995; Davidson, 2006). Literature here refers to how one of the consequences of lasting interpretive flexibility is the misfit between technology and use practices. The findings of this research, however, lead to an additional understanding of the concept of interpretive flexibility and stabilization. Instead of focusing on how continuous interpretive flexibility causes lack of closure, the findings suggest that the shock of Libra causing frame amplification can lead to an intensification of policy negotiations that establishes a sense of *regulatory urgency*. Such scenario acquires the means to accelerate policy action. In addition, this analytical reflection also indicates a temporal dependency. The temporal dependency concerns the point in time in which an exogenous shock causes political turmoil that can affect the trajectory of institutional meaning making.

This implication impacts our view on the formal procedure of the policymaking process (division between technical and political discussions) and relevant in relation to the *pacing problem* of regulatory action towards technological change (Bennett Moses, 2011). Specific to this case, the findings suggests that when a *shock of amplitude* hits a period of high interpretive flexibility (often the case in the early stages of policymaking), this *disrupts* the battlefield of meaning construction, where even technical discussions can become overly political. Ultimately, as this case shows, regulators start pacing the process to race against technology development to avoid market adoption. However, as discussions had not yet matured on both the technical and the political levels (evidence of high interpretive flexibility in the divergence period), they *cut short* the decision making on whether to *play or fight* (Bateson, 1972) across different possibilities for policy action. While articles in MiCA reduce interpretive flexibility, the classifications and categories are, from the perspective of the working group described as “artificial distinctions” (political) and not technical ones. This implication contributes to the further debate regarding the *race* between technology and regulation, also wisely put forward by Bennett Moses (2011) as “the widely held view that law lags behind technology represents a necessary, but not necessarily problematic, state of affairs. The law should not race ahead by anticipating technological trajectories that may never come to pass” (p. 787).

This reflects the known fact that regulators often aim to regulate in reactive modes (Butler et al., 2023) where the focus is on the unintended consequences of technology. Yet, as mentioned in the previous section, regulators and supervisory agents are often unequipped to face the intended and unintended risks of technological change (Butler et al., 2023), especially in the early phases of policy development. On the advent of many digital innovations over the last decade, as well as scandals (e.g. Cambridge Analytica), there is an increasing need to understand and predict not only technological opportunities, but also risks (Butler et al., 2023). The regulation of technology has become a visible point on both the European agenda (MiCA and DSA), and internationally (Boon et al., 2019; Garud et al., 2020) where for example the regulation of sharing economy to protect workers' rights (Uber and Airbnb) or the regulation of digital platforms to e.g. limit the spread of misinformation (the DSA) have gained increased political attention. Regulators find themselves in a difficult pathway as sudden exposure to unintended consequences can arise out of digital media platforms and artificial intelligence tools rapidly. For example, current debates regarding the role of digital platforms in distributing guidelines on self-harm is of enormous political attention. Such *possible* use of the technologies was (I want to believe) never *intended*, yet it has now become very difficult to regulate due to the scope and reach of digital platforms. The complexity on the matter stems from *knowing* or *having the ability* to predict these unintended consequences. This point adds to the speculation about expertise asymmetry (Butler et al., 2023) in technology regulation. Here, efforts to understand both the *actual* use and the *possible* use of technology will create a better understanding for which direction policy action should go.

The interpretive shifts in the policymaking process on crypto-assets can be explained by the notion of actual vs. possible use of technology. The findings of this study, exemplified by the emergence and dominance of the global stablecoin frame, indicate an interpretive shift in the approach to regulating the technology. Moreover, the announcement of Libra in summer 2019 enabled policymakers and other supranational actors to also perceive the *possible use cases* of crypto-assets. The shift was not due to any existing applications of the technology, but instead driven by the sudden awareness of the technological possibilities for action. The possibilities for action were demonstrated by the idea of Libra, in which an association of organizations (the Libra Association) would be able to act as a central bank issuing private forms of money. The possibilities of Libra concerned both the potential scope and the scale of the adoption of crypto-assets, which was argued by policymakers and international institutional bodies to have implications for the maintenance of the existing institutional order of monetary and financial regulation. The observed interpretive shift exemplifies a *change of mode* by policymakers where the decision to draft MiCA, ca be seen as a *proactive mode* of regulators. While perceived as a paradigm shift from a working group member, the important note to draw attention to, is how such a mode consequently raises the expectation (from the industry) of regulators knowledge and competency capacities to understand the technology in light of digitalization. The main question is whether policymakers are equipped to act in proactive modes, also when technology use cases are not always tangible or foreseeable?

To conclude this section on the theoretical contributions, the findings of this dissertation contribute to furthering our understanding of the construction of our social realities (Berger &

Luckmann, 1991) where a new industry operates in between the lines of existing institutional arrangements and interpretations of new technology in a highly contested political environment. In other words, the policymaking process of crypto-assets deals with decision-making around embedding new technology within existing institutional arrangements, modifying existing institutional arrangements to consider new technology, or creating new institutional arrangements around new technology. This empirical case illustrates the non-linear path of such decision-making. To build on prior theoretical contributions on public policymaking concerning crypto-assets (Novak, 2019), the findings of this study show that institutional responses regarding emerging technologies with transformative characteristics to a great extent depend on, not only existing applications of the technology, but also future potential applications of technology. This leads to new institutional arrangements being organized around not only existing new technology-enabled business models and type of actors, but also possible future applications. This finding is of great importance to the way policymaking approaches technologies in the future. In that way, the regulation of technology concerns not only regulating mature and established forms of technology-enabled markets but technology regulation can be seen increasingly as the means to proactively shape the trajectory of technology. However, this process requires attention to technological, social, political, cultural, and economic aspects of the possible impact introduced by the new technology.

6.2 Practical Contributions

Based on previous research on the regulation of technology (for example mobile money, e-commerce, and digital platform-based sharing economy) we know that regulatory efforts vary across regions and result in different regulative guidelines for market activities. Cases show that early regulatory support has led to positive adoption of technology (Kaminska, 2015) but also adoption constraints (Fisher & Harindranath, 2004; Garud et al., 2020). This research engages with the early stages of regulation, more accurately the policymaking process, where actors engage in institutional work processes to influence perceptions about technology and policy action. The results of this dissertation show that for crypto-assets to become an accepted means of financial activity, new institutional roles and practices had to be created. In other words, *the rules of the game* (North, 1990) have been created. As an outcome of the decision to create a separate regulatory regime for markets in crypto-assets (MiCA), crypto-assets have become a regulatory legitimized new financial asset class and new financial actors (CASPs and CAIs) are recognized within the institutional framework of financial service regulation in Europe. To further the exploration of the implications of the findings, the following discusses three aspects in relation to practice. These are the potential consequences arising due to the acceleration of policymaking, the diversification in the payment landscape, and the design of future monetary governance models in light of digitalization.

6.2.1 Assessing the Impact of Accelerated Decision Making

The findings indicate an acceleration of the policymaking process as a response to the developed urgency of establishing regulation of crypto-asset markets. This has previously been described in the theoretical contributions with a reference to the *race metaphor*, or the *pacing problem* between

technological change and regulatory action (Bennett Moses, 2011). Such acceleration also has implications for the translation of regulatory requirements and provisions into business operations. While some implications are directly cost related (for example the requirement around enhanced due diligence processes (EDD) for CASPs, others relate to the underlying architecture of crypto-asset information systems. In other words, some MiCA provisions challenge the technology development trajectory by leaving out definitions for certain types of mechanisms. The example concerns the provision (Article 36, European Commission, 2020) of prohibiting interest for EMT and ART service providers (both CAIs and CASPs). The findings have shown that misunderstandings between the technical understanding of *interest* and the regulatory/ accounting understanding of interest have left the crypto-asset industry in a vacuum of uncertainty.

While the prohibition of interest in MiCA targets the provision of banking-like business models, including deposit accounts and lending, where users would hold EMTs or ARTs as a store-of-value, this prohibition could possibly endanger the structural composition of *staking services* (service that rewards validators for approving blocks). While these two operations (interest in regulatory/accounting terms and interest/staking in technical terms) are fundamentally different, MiCA seems to only target regulatory/accounting term of interest, leaving the industry without clear guidelines for how to comply under these restrictions. As pointed out in the findings (prohibition of interest), specific characteristics and functions of crypto-asset information systems have reshaped the organizing practices of transaction validation mechanisms, where a new financial process, referred to as *staking*, has emerged in the crypto-asset economy. The function of staking encapsulates a mechanism through which participants can contribute to the validation of a transaction, and by that be rewarded. Whether such rewarding falls under the traditional meaning of providing interest is unaccounted for in MiCA and yet to be negotiated. Similar to how Desan (2017) showed that the introduction of the financial process of self-interest by commercial actors played a part in the formation of modern financial markets, the process of staking is one that *could* (depending on adoption and future regulation) rearrange certain financial processes expanding the use of decentralized finance providing holders of crypto-assets additional store-of-value benefits.

Despite MiCA offering many clarifications, the findings of this work points towards a weakness in the outcomes of policymaking on MiCA due to the acceleration of the technical discussions in the intensification period. The findings of this research indicate that this weakness is an outcome of knowledge asymmetry (Butler et al., 2023) as well as conscious political acts to leave room for further understanding of the financial impact of these services. Knowledge asymmetry is throughout the findings highlighted as detrimental to the crypto-asset industry where the lack of understanding frustrates the working group. The technical knowledge gap could have been explored in more detail within technical discussions, yet the acceleration leaves the crypto-asset industry in uncertainty on the matter.

Consequently, while the emergence of crypto-assets in and about itself created risks of regulatory arbitrage, the findings also point towards a risk of regulatory arbitrage due to the accelerated policymaking process of crypto-assets. It is known that for regulation to be successfully

transmitted across organizational fields, it must accurately and to some extend fairly reflect functional, operational and competitive aspects of the technology and markets under scope (Omarova, 2010). It is clear from the findings that some frames (privacy, sustainability) of the policymakers were questioning functional properties, inherent to the blockchain technology (traceability, consensus mechanisms). If such frames had received support in the final drafting of MiCA, this may have led to a prohibition for service providers to offer services in respect to specific crypto-assets. Despite some frame alignment across functional, operational and competitive aspects, MiCA also embed articles that could lead to regulatory arbitrage in the future, despite not intended to do so. As the example in the beginning of this section shows, potential regulatory arbitrage stemming out of new regulation reflects the inadequacy of regulators to understand the technology (knowledge asymmetry), or the rush to develop regulation (accelerated decision-making process). To prevent what Omarova (2010) refers to as "the never-ending spiral of rulemaking and rule evading" (p. 411) in describing the consequences of regulatory arbitrage, this research suggests that for legislative and supervisory bodies to be better equipped to tackle digitalization and act in 'proactive modes', frames must be contested to an even higher degree at the level of technical discussions in the policymaking process.

As for the results of the policymaking process, the MiCA regulation, one could question its relevancy to the *current applications* in the crypto-asset ecosystem, due to its 20 percent dedication (26 out of 142 pages) to ART applications. Yet, it is unfair to state that MiCA is overregulating markets in crypto-assets, as Libra was a tangible and present threat at the time of drafting MiCA. In that sense, the acceleration of policymaking highlights the weight and impact of dominant framing, where some issues were framed more than others. However, this creates new avenues for future research, where a fine balance must be found when regulating boundaries of intended vs. unintended use of technology as well as the actual vs. possible technological trajectories. Possible trajectories may never come to pass (Bennett Moses, 2011, p. 787), yet we are moving into a paradigm in financial service regulation, where there are expectations towards anticipating these due to the pace of technology development. On this backdrop, new questions come to the foreground. How do we make sure that technology regulation is still applicable and relevant if we are to focus on both actual and possible use of technology? What is a balancing approach to regulate unintended consequences of technology while creating room for innovation? And how do we allow for developing expertise symmetry while pacing regulatory efforts?

6.2.2 Considering Diversification, Innovation and Bifurcation in the Payment Landscape

The variety of innovation across crypto-assets can be seen in the light of a search for more specialized payment systems that consider non-market economic functions. From my experience in the field of payment service provision, one example is the niche market for high-end products (e.g., fashion) in which immediate payment finality is critical. In relation to crypto-assets, these new transactional models offer low cost and close to instant settlement and make those specialized markets possible. On the demand side, payment behaviors are digitalizing, and specialized markets materialize (Danish Payment Council, 2016). While the MiCA regulation does not qualify crypto-assets as funds (unless they are deemed as an EMT category) and thus not a "legal mode of payment" (Desan, 2016, p. 28) under the PSD2, the community of users may still recognize

crypto-assets as another type of money or means of payment in situations where fiat money and traditional payment systems do not fulfil the socially-demanded functionality. As the findings indicate, crypto-asset information systems affords transferability despite delegitimized as a means of payment in MiCA. Whether such affordance will lead towards adoption as a means of payment (from the users of payment instruments as well as payment service providers), while still only defined as a means of exchange in MiCA, is yet to be understood and seen across markets.

The consequence of the legal constraint of perceived possibilities for action by the industry and users (means of payment) creates an imbalance between the new MiCA regulation and existing legislation such as PSD2 and EMD2. This result is similar to what Scott and Orlikowski (2022) refer to as digital displacements, where an institutional response creates a bifurcation of industries. MiCA allows for the EMT category to be considered e-money under EMD2 and therefore funds in which transactions can be considered payments under the PSD2. However, the other categories of crypto-assets (including ARTs) cannot be considered funds, despite, for example, similarities in functionality between ARTs and EMTs. This creates an imbalance between types of crypto-assets when it comes to market implementation but also an imbalance in terms of the nature and applicability of the existing directives (EMD2 and PSD2) and whether these need to adopt to the new MiCA regulation. Therefore, considering that the way money works as a payment is an institutionalized practice (Desan, 2016), legitimated and reinforced through the legal framework of PSD2, most crypto-assets (aside from EMTs) are not assigned this function from a legal point of view. Again, from a position as an industrial researcher where I engage with processes around crypto-acceptance models and translations of MiCA, the effects of this bifurcation is evident through the complex legal assurance and risk evaluations around the provision of services around crypto-assets, where the provision of different services requires different applications of law.

In addition, the findings showed how, in general, it is difficult to classify monetary artifacts (internal/external classification methods), due to the wide array of possibilities for action (affordances). Depending on the usage situation, different affordances may arise (Leonardi, 2013). This is similar to existing types of money. We may hold it to save, to spend or to invest. By the design of our information systems, we assign the preferred meaning to digital artifacts and shape their use in preferred ways. One known example to this is the interest rates on deposit accounts. When high, the digital money in our account both function as a means of exchange and a means of investment. When low, this same money does no longer hold the means of investment function, yet if circumstances change this function can become available again. This means that, while the possibilities for action (for functioning as a means of investment) are always there, those possibilities may not be attractive. MiCA exemplifies such political restraint of possibilities where business models of EMTs and ARTs are constrained from provision of interest. The framing process of crypto-assets highlights this social (including legal) engineering of money, adding to existing literature on the topic (Desan, 2016; Swartz, 2020; Zuboff, 2019) by showing how the political framing of new technology also shapes the possibilities for action. From a technology perspective, it may not make sense to separate payment from investment tokens, yet from a social, economic and political perspective this may make sense as shown though the frame contesting. Therefore, by paying attention to how institutional actors construct meaning about and attribute

not only technical but also social affordances (positive and negative) to technology provides insights into the preferred (in this case monetary) governance strategy of a country/union.

6.2.3 Strategizing for Future Monetary Governance Models in Light of Digitalization

Concerning governance strategies, the wave of stablecoins and, in particular, global stablecoin arrangements led to political concerns across the world. Initially, the concern was targeted at Facebook, being the first mover on creating a private digital currency and payment system that in theory could compete with the fiat currency system. However, the concern was grounded on the fact that technology enabled a new monetary structure in which other entities, than central banks and commercial banks, could potentially uphold a monetary and financial system and order, previously difficult for communities (Desan, 2017). This was a threat to the layered monetary order currently enforced through two types of money, inside and outside money (Bhatia, 2021). Once Libra was introduced, it became clear how crypto-assets and the design of crypto-asset information systems offer new ways to reach scale for private currencies through digital networks and as a result challenges core assumptions about the current monetary and financial order. In that sense, the policymaking around crypto-assets, and the resulting regulatory framework of MiCA targets the main controversy concerning public control of money vs. commercial control of money.

As shown through this research, regulation is a crucial aspect of monetary governance where, more than ever, money should be recognized as a political framework, or a legal institution, as Desan (2016) referred to it, where both what money is and what money does is an output of a political decision-making process. With the proliferation of crypto-assets, existing institutional arrangements were challenged in which it was found that the European Union required an additional legal framework to govern the emergence and uptake of crypto-assets. As a parallel discussion to MiCA, yet as another reaction to the shock of Libra, the policymaking process also had references to the potential monetary strategy by the EU to design a digital Euro. Currently, the ECB is exploring what a digital Euro could look like, its advantages and consequences, both on regional and global levels (European Central Bank, 2020). This exploration can be seen as an attempt to strategize on the future design of money and payment systems in Europe, and potentially re-engineer current monetary frameworks (Desan, 2016). As Dodd (2014) noted, forms of money change in order to adopt to specific social, ethical and political objectives in contemporary society. On that note, the global stablecoin frame also led to countries exploring a more digital monetary strategy from within their own position as an issuer of public forms of money. These findings encourage the exploration of these topics, and in designing digital monetary strategies, to draw on economic, technological, social, political, cultural, historical, religious, and ethical aspects as these cannot be separated (Dodgson et al., 2015).

CHAPTER 7. CONCLUSION

In conclusion, this dissertation has delved into the process of bottom-up institutional meaning making concerning the transformative and multifaceted nature of crypto-assets, exploring the evolution of a framing contest within the context of policymaking in the EU. The indisputable growth of crypto-assets has garnered increased public, political, and scholarly attention, prompting debates on their disruptive potential in reshaping concepts of money, payments, and the financial service industry. Approaching this research as an industrial PhD, the regulatory uncertainty apparent in the beginning of 2019 motivated this study as it challenged incumbent financial service providers in their exploration of the blockchain technology. Moreover, it triggered an interest in understanding the regulatory challenges faced by the new crypto-asset industry. As such, this study focused on the institutional work surrounding the policymaking of crypto-assets, leading to the creation of the MiCA regulation.

By employing an interactive framing approach, the research analyzed the dynamic interpretative process of constructing meaning about an emerging technology over a three-year period, unraveling the negotiations of meaning among institutional actors. The findings highlighted six frames and two frame shifts throughout three periods of divergence, intensification, and stabilization. Additionally, the results also account for four framing mechanisms employed by the industry working group. These mechanisms, including affordance attribution, mimicry, value-laden information, and appeal to emotion fallacy, reveal the strategic framing activities engaged in to influence the policymaking process. Contributing to both theory and practice, the findings extend the theoretical boundaries of institutional work theory, emphasizing framing as a strategic form of institutional work, operationalized through normative, cultural-cognitive, but also affective ways. Building upon earlier notions that problems are not given, but framed the study also provides insights into the socio-political construction of technology, highlighted by the nuanced evolution of framing contests around crypto-assets. Engaging with the nuances of framing, the work raises a pivotal question inspired by Langdon Winner's 1980 article, "Do Artifacts Have Politics?". Winner proposed that artifacts, through their design, can either encourage or discourage certain possibilities for action, embedding political agendas. This case study demonstrates how some crypto-assets, exemplified by examples of Bitcoin and Libra in this work, are inherently political artifacts that project a certain socio-political frame (decentralization and globalization of private digital money) that trigger contested debates on national, supranational and international levels.

The outcomes of the policymaking process, the MiCA regulation, exemplifies the institutional response to such technological developments, serving as a political tool directing the design of the environment (financial service regulation) where boundaries to service offerings are aligned with specific political agendas of the EU. The research also highlights the dynamic construction of frames by policymakers, revealing a tussle between established norms (GDPR vs AML practices) and individual (policy groups) political agendas, crucial for understanding the evolving financial service regulation landscape of crypto-asset developments and future policy negotiations. Last but not least, the examination of the policymaking process highlights a

paradigm shift in technology regulation. The observed shift, labeled as a *change of mode*, signifies a proactive approach by regulators, one that breaks with prior research that suggest how regulators operate predominantly in reactive modes (Butler et al., 2023). On this matter, the findings contribute to both scholarly and professional interest in the debate concerning balancing regulation and innovation. The emergence of the global stablecoin frame signifies a shift in regulating technology, driven by awareness of technological possibilities for action.

The engagement with public policy processes through participatory observation adds a unique dimension to the study, emphasizing the significance of understanding the relationship between meaning making, legal definitions, and technology acceptability. The dissertation not only sheds light on the complexities of regulating digital innovations, but also lays the foundation for future research on the regulation of technology within the field of information systems. It does so by emphasizing the contested nature of framing, the impact of contextual shifts, and the persuasive role of framing in shaping policy outcomes targeting new technology. In that way, the interactive framing perspective is advocated as a crucial lens to dissect the socio-political conflicts inherent in shaping policies around emerging technologies. Through its detailed examination of the policymaking process, the study contributes valuable insights for policymakers, industry practitioners, and scholars navigating the evolving landscape of crypto-assets in the EU. The industrial PhD journey has also provided valuable insights into the art of research between theory, practice and action to make the research findings useful for science, practice, and policymakers. The relevance of the findings and the overall process of research and engagement with the working group, is demonstrated by the impact it has had on the host company through new initiatives and deep knowledge of the crypto-assets concept and evolving context within European financial service regulation.

7.1 Limitations and Challenges

Extending the conclusions of the dissertation, this section elaborates on the limitations and challenges of the study in addition to offering new pathways for further research focuses and strategies. The limitations and challenges of the research evolve around three main elements: first, the research setting and role as a participant observer, second, the data collection process, and third, the analytical strategy applied. In addition, this section will elaborate upon two challenges regarding the position and role as an industrial researcher.

First, limitations concerning the research setting deal with the challenges regarding the commitment as an observer in the working group. Through the specific research setting in the working group, the aim was to extract interpretations and meanings about crypto-assets from the industry members and policymakers. In efforts to be as neutral an observer as possible, I had to limit my own participation in the discussions during working group meetings. This limitation was necessary in order to not create a conflict between my own statements and the ones of the working group members that represented the crypto-asset industry, in other words to avoid influencing the construction of meaning in the group. While I did not actively participate in forming the group's interpretations about the technology and policy action preferences, my observations are a result of my personal experience, perspective on the matter, and potential subconscious biases. This

interpretivist approach is of a subjective nature, which in some way influences the objectivity of the study and results. In efforts to mitigate this bias, I made best efforts to triangulate my observations as explained in chapter 4. In addition, I persistently aimed to create transparency through the rigorous data presentations method involving authentic voices and rich descriptions (Walsham, 1995).

Second, turning to the limitation of the data collection process, access to participatory observation was restricted to the setting of the working group and the interpretive processes among working group members and between working group members and policymakers. In that way, the boundaries of the industry working group created the limitation of access to data in which the empirical body is a reflection of the agenda in the working group. It is the issue-framing (Yanovitzky & Weber, 2020) from the working group that drove the empirical material available for analysis. The analysis is configured around the group discussions and not discussions among, for example, policymakers and regulators in the trialogue negotiations. This limitation also means that while some issues were identified, for example, in the ECB May 2019 report, the working group did not manage to directly interact with this institutional actor and the observations relied on the public position papers as they were discussed in the working group among members. Another aspect concerning limitations to the data collection process is the procedure of the working group meetings. Due to the fact that the working group was the party that invited policymakers into the discussions, the working group directed the agenda. Across meetings, this procedure sometimes led to very limited answers by the policymakers. If they did not have an answer to the working groups' question, they simply thanked for the perspective shared by the working group, and in that sense, did not engage much in the framing contest. While this was not the case across the entire data collection process, it limited the opportunity to identify, empirical based, framing mechanisms employed by variety of policymakers within the interactions with the working group.

Third, viewed more as a challenge rather than a limitation, the data analysis strategy of this research turned out to be more complex than initially expected. The analysis of the frame contests often overlapped with the analysis of frame shifts and framing mechanisms. While the data analysis was complex, combining both the analysis of static frames with framing activities, the challenge mainly occurred regarding the presentation of the findings. The longitudinal analysis resulted in complex patterns, shifts and developments that I attempted to present in a cohesive storyline throughout chapter 5. In addition to the chronological presentation of the results, I made efforts to reduce complexity by illustrating findings in figures throughout the chapter.

In addition to these three limitations, multiple challenges presented themselves regarding my role as an industrial researcher throughout the research. Two of them are discussed here. First, the challenge of balancing practicality and academic rigor is one that most industrial researchers face. Due to the choice of study design, the data collection process spanned over the course of the 3 full years of employment, which meant that some findings of the research were only presented at the end, instead of during the project. Concerning the practical application of the work as a longitudinal study, indicative results were revealed throughout the PhD journey and discussed in smaller forums or implemented as part of a proof-of-concept business case. Overall, being an

industrial researcher who engages in a longitudinal study is a difficult role to play in a fast-paced industry, requiring a rethinking of ways to apply the knowledge gained throughout the research. The other challenge concerns ethical considerations, more specifically, ethical concerns regarding my role as an industrial researcher in the working group. While participation was paid for by the host company, the challenge was to establish the role as an observing participant. This was important due to methodological considerations, and also to create awareness of the research and the objective of my participation in the working group.

7.2 Recommendations for Future Research

The recommendations for further research will focus on theoretical, practical, and methodological suggestions. Concerning theory, this work encourages researchers to continue investigating the evolution of monetary and financial arrangements in light of digitalization, for example comparing the regulation of crypto-assets across continents. In addition, theoretical work concerning digital monetary strategies may expand to examine the central bank developments of crypto-assets, namely developments of Central Bank Digital Currencies (CBDCs) from a sociological point of view. Research in this area has been mainly contributing to macroeconomic domains (Barrdear & Kumhof, 2016, 2022; Bordo & Levin, 2017) and technical design options (Auer et al., 2020; Kumhof & Noone, 2018). Therefore, future research is encouraged to focus on how previous social and legal understandings of money and payments can be revitalized in the light of technological advancements in value creation and exchange. In addition to these theoretical suggestions, further research on other aspects of crypto-assets can enhance contributions to practice. For example, the lack of focus in MiCA on non-fungible tokens (NFTs) has been recognized among both regulators and the industry (Sas, 2022), in which future research opportunities may arise through a potential updated version of MiCA regulation.

The methodological recommendations follow the research strategy employed in this study. The analytical attention paid on temporality in this study enabled the results to reflect on the implications of frame contests as they progress over time as well as framing mechanisms employed to influence policy action. Future research paths can build upon the four identified framing mechanisms – affordance attribution, mimicry, value-laden information, and appeal to emotion fallacy – in attempts to reach context-independency across future studies adopting the framing approach. Building on these framing mechanisms can yield a better understanding of their effects on policy directions. In addition, through the three periods of negotiating meaning, the results indicate how and why policymaking accelerated towards the draft proposal of MiCA. Future research could try to understand what other factors influence the acceleration of policymaking and the impact on the subsequent framing processes. Finally, not much work has gained access to the nexus between an industry group and policymakers, where existing research on frames mostly rely on secondary data resources or interviews, opposed to meaning creation *in interaction.* In making sense of these processes from an interaction perspective, this research provides a new angle to mechanism-based theorizing that are known for their explanatory power.

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APPENDICES

Appendix 1: Overview of Working Group Meetings and Agendas (Illustrative example)

7 November 2019, Brussels

Thursday, 7th November 2019	
10:00	**Welcome - Coffee & Tea** *Address: "[redacted]*
10:30	**Session 1** • **Approval of the Minutes of the previous meeting** • **Update on regulatory issues concerning vcs** • **Discussion on future meetings with national supervisors and the European Commission DG JUST to discuss how to practically implement the FATF 'Travel' rule** • **Preparation of the meetings**
11:30	**Session 2 Presentation by [redacted]** • Presentation on Germany's crypto-related policies
12:00	**Session 3 Meeting with [redacted] European Data Protection Board (EDPB)** • Discussion on data protection regulations in relation to blockchain and virtual currencies *Tel: +32 2 28 30 299*
13:00	**Lunch break**
14:00	**Session 4 Meeting with [redacted] Research Service (EPRS)** • Discussion on virtual currencies regulatory challenges and solutions *Tel: +32 (0)2 28 30 899*
15:30	**Session 5** • **Outcome of the meeting** • **Next steps to coordinate industry action**
16:00	**End of day - Members leave**

Appendix 2: Overview of Field Observations

Date	Place	Topics	Duration	# of participants	# of external meetings	External visitors
Feb-19	Brussels	• GDPR • Environment and consensus mechanisms • Review of 2nd SNRA • FATF	6 hours (lunch break 1 hour)	16 + WG organizer and assistant	1	EC - DG JUST
Mar-19	Brussels	• GDPR • ICO classification • Energy consumption • FATF • Reports from ESMA and EBA	6 hours (lunch break 1 hour)	10+ WG organizer and assistant	2	EC – DG GROW EC – DG CONNECT
May-19	Brussels	• FATF upcoming recommendation • Classification of ICOs and VCs • GDPR • Environment and consensus mechanisms • Report from ECB	5,5 hours (lunch break 1,5 hour)	20 +WG organizer and assistant	2	EU Council EC – DG CONNECT
Jul-19	Brussels	• GDPR • Decentralized organizations • Environment • EU law on securities • ECB report on the classification of crypto-assets • Issuers in decentral networks • Applicability of EU law • Definition of crypto-assets	6,5 hours (lunch break 0,5 hours)	18+WG organizer and assistant	2	EC – DG CONNECT EBA
Sep-19	Brussels	• Regulation vs. directive • Environment and consensus mechanisms • Definition of money • 5th AMLD • Growth of crypto-asset industry • ICO classification	5 hours (lunch break 1 hour)	15+WG organizer and assistant	1	Permanent Representation of Finland to the EU
Nov-19	Brussels	• PSD3 • Stablecoins • Environment • GDPR	5 hours (lunch break 30 mins)	13+WG organizer and assistant	1	EDPD

Dec-19	Brussels	• Travel Rule • Libra • Stablecoins • EC agenda	4 hours (1 hour lunch break)	9 + WG organizer and assistant	2	DG JUST HM Treasury in the UK
Feb-20	Via phone	• GDPR • Traceability • Travel Rule • Applicability of EU law • Definition of crypto-assets • Crypto-asset business models • Legislative framework for ICOs	6 hours (1 hour lunch break)	Not accessible	2	DG JUST Council of the EU
Mar-20	Virtual meeting due to covid-19 outbreak	• GDPR • Travel Rule • Global communication system among VASPs • French market	5 hours (1 hour lunch break)	11 + WG organizer and assistant	2	BaFin & Germany's Federal Ministry of Finance French Treasury
May-20	Virtual meeting	• Approaches to regulation (EU or national level) • Crypto-asset classification • Categorization as means of payment • Issue around classifying utility tokens • Stablecoins and Libra • Cybersecurity and GDPR	4,5 hours (no lunch break)	17+ WG organizer and assistant	2	DG GROW CEN CENELEC
Jun-20	Virtual meeting	• Travel Rule • Report from FSB on Global Stablecoins (GSC) • Libra • NSAs interpretation of crypto-assets • Crypto-assets vs. stablecoins • Technology-neutrality	3 hours (no lunch break	15+ WG organizer and assistant	1	Danish FSA

Jul-20	Virtual meeting	• Travel Rule • Transfer of Funds • AML regulation application • ESAs activity • FSB activity on stablecoins • Access to banking	3 hours (no lunch break)	21+ WG organizer and assistant	1	CSSF
Jul-20	Virtual meeting	Not present at this meeting due to conflict				
Sep-20	Virtual meeting	• Commissions work on a crypto-asset regulation - forthcoming	4 hours (30 mins break)	23+ WG organizer and assistant	1	DG FISMA
Oct-20	Virtual meeting	• Environment • Stablecoins • MiCA regulation • Technology-neutrality • Competition issues due to MiCA provisions • De-risking / Access to banking	5 hours (no lunch break)	22+ WG organizer and assistant	2	EP – RENEW EP - GREENS
Dec-20	Virtual meeting	• Applicability of EU law • MiCA provisions such as: • Prohibition of interest • Powers of NSAs • Definition of crypto-assets • Issuers of crypto-assets • Provision of services from outside the EU • Access to banking	4,5 hours (no lunch break)	20+ WG organizer and assistant	1	DG FISMA
Feb-21	Virtual meeting	• Travel rule • MiCA regulation • AML regulation • Trust relationships • De-risking • Central vs. decentral issuer • Legitimization of crypto-asset industry • Competitive aspects in MiCA • CBDC	5 hours (0,5 hour lunch break)	28+ WG organizer and assistant	3	CSSF EP – RENEW Portuguese Permanent Representation to the EU
Mar-21	Virtual meeting	• Means of payment vs. means of exchange • Global stablecoin	4 hours (no lunch break)	27+ WG organizer and assistant	2	EP – ECON

		competition • Report from ECON on MiCA • Definition of crypto-assets • Diem and Digital Euro • Traceability • Regulatory arbitrage • Level playing field				Lithuanian Permanent Representation to the EU
Apr-21	Virtual meeting	• MiCA regulation • Prohibition of interest • Definition of issuer • Definition of decentralized exchanges • Means of payment-means of exchange	2 hours (no lunch break)	20+ WG organizer and assistant	0	NA
Apr-21	Virtual meeting	• MiCA regulation • Access to central bank money • De-risking / access to banking • Level playing field • Financial stability risk • Currency competition bt. Fiat, EMT and ART • Political approach to innovation	4,5 hours (0,5 hour lunch break)	19+ WG organizer and assistant	2	Dutch Permanent Representation to the EU Danish Permanent Representation to the EU
May-21	Virtual meeting	• DLT Pilot Regime	1 hour (no lunch break)	18+ WG organizer and assistant	1	EP- ECR
May-21	Virtual meeting	Not present at this meeting due to conflict				
May-21	Virtual meeting	• MiCA provisions such as: • Prohibition of interest • Placement of crypto-asset orders • Banking stability in regards to stablecoins • MiCA finalization process • De-risking / access to banking	3,5 hours (no lunch break)	14+ WG organizer and assistant	1	Finland Permanent Representation to the EU
Jun-21	Virtual meeting	Not present at this meeting due to conflict				

Sep-21	Virtual meeting	• MiCA provisions such as: • De-risking • Energy consumption • Competitive advantages for incumbents in issuing crypto-assets • AML • ECB market group on the Digital Euro • Digital Euro discussions • New regulation: 'transfer of crypto-asset' regulation	5,5 hours (0,5 hour lunch break)	27+ WG organizer and assistant	2	DG FISMA German Permanent Representation to the EU
Sep-21	Virtual meeting	Not present at this meeting due to conflict				
Oct-21	Virtual meeting	• New AML regulation	2,5 hours (no lunch break)	25+ WG organizer and assistant	0	NA
Oct-21	Virtual meeting	• New AML regulation • New regulation on 'transfer of funds' • Definition of crypto-assets	5 hours (1 hour lunch break)	20+ WG organizer and assistant	1	DG FISMA
Nov-21		• New AML regulation • Alignment of definitions across new regulations (funds e.g.) • Definition of wallet and wallet address	3,5 hours (no lunch break)	19+ WG organizer and assistant	1	DG FISMA
Dec-21	Virtual meeting	Not present at this meeting due to conflict				
Feb-22	Virtual meeting	• Definition of issuers • Prohibition of interest • Power of supervisory authorities • Environment and energy • Unintended consequences of MiCA provisions	4 hours (no lunch break)	25+ WG organizer and assistant	0	NA

Appendix 3: Example of Field Notes

September 26th 2019

15 participants + organizers

10:00

3 new members in the group

Organizer explains a bit about the speakers we are meeting with today

- Meeting with [redacted] what [redacted] thinks about blockchain
- Meeting with [redacted]: [redacted] is drafting papers to the parliament (perhaps we can get our points into [redacted] research – *indirect influence* for the policymakers to take points *when* there is going to be a new piece of law)
- Document on FISMA strategy (will receive next week)
- Discussion on BaFin

WG questions: Danish FSA very pessimistic about any implementation before 2021 and may be waiting for the 6th AML.

- Difference between regulation and directive (regulation when they want all member states to do the same)

WG question: What is the implications for European VASPs when European law is slow compared to other continents?

Motion for resolution: when parliament want something answered/done by the commission. A way for parliament to input for the next regulations as they cannot leave it unanswered

- The 6th AML will most likely be a regulation (not directive) – this will be a direct implementation to national laws, not a "follow these guidelines". Will most likely take 18-24 months from April 2020
- *Organizer*: "There is a strong political view to target money laundering"

Purpose of today is to understand their views on VC and blockchain + they might have technical questions for us to answer. *Organizer: please keep the discussion on licensing and regulation, not on machinery in China.* Keep the credibility of this group as we are the only ones representing the domain interacting with policy. Keep the answers short and focused. The process of industry leading the standardization of new finance

Organizer goes through the new candidates for parliament and highlights people that could have an influence on VC regulation

The WG is explaining PoW, P-o-S in a position paper so that the policymakers will understand. *A bit of frustration in the room*

Financial market ([redacted]): Incumbency vs. competition in the market

WG: [redacted] is expected to look at sustainable finance *Organizer: we therefore need to be careful on how we draft papers.* [redacted] is also focused on cyber-security in finance

Two purposes of the group: political meetings with cabinet members and technical meetings with the people drafting the different papers. First try to affect their way of thinking and then when they start drafting, technical matters.

WG: we are already looking into affecting the AMLD 6th as the 5th might be difficult to change – however the custodian wallet point may be worth trying to change. WG is trying to get an overview of the work of this group. Another member thinks the group work will focus on definitions for 6th AMLD.

- For custodian wallet point, we want to change the word "safeguard" to "control"

- Only crypto to fiat is in scope, what about crypto-to-crypto and stablecoins etc

WG: definition of money(currency) is VERY important. Regulated business have been able to rule out VC as they are not money. So if the definition of money "means of payment/exchange" change in the directives, then the authorities HAVE TO take a stance on this. SO it all goes back to what VCs are… So authorities don't have to deal with regulation of blockchain and VC because they are not defined as money..

11:13 presentation by [redacted]) – presentation shared

Teach, invest, custody

PACTE law (first law that came out after Macron took seat)

- Definitions of tokens (utility, security)

"opting in and opting out of the new regime" – what does this actually mean?

Competitive advantage in France compared to other European countries – easier access for non-european companies. The law is clearer in France..

- Even though you are licensed and compliant, France lets you register to "take care of the rest" that has to do with crypto, because it is not covered.
- Important to remember that there is not a comprehensive list of registrations that cover all the activities from VCs because it is not regulated under European law
- At the moment you may be able to register on a national level, but it does not count on a European level as there are many different opinions.
- All you have from the European level is the 5th AMLD

Organizer is encouraging members to present their work in the group.

11:35 Meeting with [redacted]

Dealing with Banking and Financial market infrastructure issues

3 areas that are strategic policy areas:

1: sustainable growth (rebooting the capital market union)

- Trying to change the perspective from institutional to investor, end-user, retailer perspective
- Digitalization is one of the key issues that needs to be discussed

2: fighting climate change (sustainable finance taxonomy)

3: ensuring comprehensive security of citizens

Organizer: What can happen to the 5th AMLD? Can it be changed/under review?

"we have been trying to include VC in the 4th and 5th AMLD"

[redacted]*: focus on structural deficiencies. Not sure if they will discuss the substance of the directives, but it will be reviewed sooner rather than later.*

Deepening harmonization, horizontal scoping, more centralized regulation, exchange of information across authorities in terms of centralized supervision. Discussing what sectors to focus on and how deep to go.

There will be an action plan for fintech which will include blockchain, both policy and specific proposals.

Organizer: What are the discussions of FATH and the 6th AMLD and how will they converge?

[redacted]*: Not taking place at the council – more at the technical level.*

WG: we have been giving input to parliament with data to teach.

"do you see blockchain as part of the tool box to mitigate these hyper threats?"

[redacted]: *technological understanding doesn't reach that far; interesting to hear from us. We haven't yet seen the disruption from a start up initiatite, but bigger players are tapping on to the new technologies. How do you see the issues?*

WG: the crypto industry has "grown up", financial experts, compliant and big in size. The group has really changed and matured. Both in terms of size and professionalism. The view of us being start-ups may need to change as they are quite mature.

Organizer: what do you need from us?

[redacted]: *technical definitions and input "if you do this kind of regulation, it will affect our business in x and y ways". From a personal perspective I would like to see a long term vision(strategy) – where do you see your business in 10 years time? And what would that require in terms of regulation? "we are looking into the future and trying to understand" GREEN FINANCE will be very prominent" We are all trying to figure out where the financial industry is going in the next 5-10 years"*

WG: discussion started out whether bitcoin is a currency or commodity

Organizer: "any talk about a fintech license?" We saw the EBA paper in summer 2018 (incumbency vs. fintech competition)

[redacted]: *more expert level discussions – not council*

[redacted]: *all member states have their own licenses – how do you see this coming together on a European level?*

[redacted]: *similar to the crowdfunding roll out. At the end we will see how the different licenses will provide shared European state. I cant really answer.. it's a classical question; whether to leave it higher regulated or not. I'm assuming it would be useful to have a more specific regulation?*

[redacted]: *We don't want to be performing illegally. We don't want what happened to Uber. It becomes a "chicken and the egg" for the industry.*

End of meeting 12:30

Organizer **take-aways**

- On energy efficiency – they will get the input on P-o-W PoS paper which is good – they can have influence
- AMLD 6th will be a regulation
- Work on the next 6 months will be on AMLD 6th and climate
- Perhaps they as a group should come with their input on "rebooting the capital market union" in terms of tokenized assets
- WG thought his level of knowledge was really low (technically)
- *Organizer* says the point is more on the political level – so where the different issues are being discussed
- [redacted]: in general policymakers have very little knowledge on blockchain and VC. "come talk to us about bitcoin, we don't know what we are regulating" (example from dutch market)
- *Organizer*: this is exactly what we are trying to do here. It is very frustrating but can be good for us to have an input
- "how is the blockchain environment sustainable" – IMPORTANT QUESTION…
- The French commission has gone to the government as they saw a problem that Consensys (a US think tank) is running the analysis in the Blockchain Observatory Forum (French bank will look to create a euro stablecoin and will not include non-eu companies in the legal tender)
- If the WG come out with the report on P-o-S/P-o-W (something that is not hurting the industry) that will give them a chance to control some potential consequences if they rule out for example P-o-W Vcs.
- The EU will not do any specific policies on climate of Blockchains as the broader policies will cover these. They apply to anything in the physical and digital world. *Organizer opinion*: *"The EU is perhaps getting more positive"*

Lunch 12:50

Session 4 13:50

[redacted] cancelled.

Discussing the position paper on ICOs

Discussion on definitions (look at paper)

Making sure that all the members in the group are not being "hurt" by any of the statements.

E-money: receipt of funds (how to protect the funds?) Not many stablecoins will follow this directive as their funds are not stored..

The position in the paper:

AMLD 5th – expand to crypto to crypto and stablecoin to crypto

WG: Tax definitions tax "value" not money… so that is different than regulating money. Tax authorities doesn't have a definition of "what is money".

[redacted]: thinks WG should use the fact that you are being taxed on crypto should be an incentive to also regulate crypto..

WG: looking at the definitions of utility, payment tokens – there are overlaps. And the EU is trying to leave out anything that is payment. But in reality any utility token can be used for payment.

Cambridge research something published a definition paper

7th of November: GDPR and blockchain

EPRS published articles on libra

PSDII: when is the strong authentication going to place

EOM 15:10

Appendix 4: Example of In-process Memos

Discussion before meetings:

Follow Recommendation 15 - what does it say about the meeting with the private sector?

The interest to join the WG is increasing - many have perhaps opened their eyes to the power of collective lobbying?

After a private-sector and regulatory gathering in Vienna in spring 2019, a whatsapp group was initiated by Virtual Asset Associations/companies and the goal was to find a way to work together as a unified whole. There was an idea to meet at a conference in Japan to discuss this - also with regulators.
"The goal of the event is to take a unified approach in developing a solution that would be both workable for business and acceptable for regulators."
A member of the WG mentioned that he *"suggested this to be a commercial move, which is unlikely to have a strong influence on the FATF. The company will not be attending. He termed the ADCA's proposal as* ***"trying to be the best boy in the class".***
This also shows that there is some kind of competition going on between the different virtual asset players - some of them are trying to take the lead.
The overall agreement in the group was not to attend this type of commercially-focused initiative and instead submit a position paper through the traditional channel.

The WG's work on classification is currently underway and in preparation to be presented for both ECB(they came out with a report on digital assets) and DG FISMA later this year (2019).

Short mentioning on the work that is being done regarding GDPR and blockchain - the WG is efforting to provide a more neutral/balanced way to look at it as Consensys has been lobbying for the regulators to focus on private/permissioned blockchains.

The whole GDPR paper from Consensys also lead to the beginning of the discussions about environmental impact and POS vs. POW mechanisms.
The Commission is still writing their statements as "monitoring" - does this change at some point to be "acting"?
The WG members respond quite differently to this issue.

1. one member focus on the misconception of PoW energy sources. He argues that it actually promotes sustainability as energy used comes from either *renewable energy sources* or *excess energy sources from traditional power plants*.
2. another member focus on the security trade-offs between PoS and PoW - these are rarely discussed.
3. a third member pointed out that the "Green Party" was successful in the European Parliament elections in May 2019 so this topic will get even more attention.

The "world focus" on Green Finance is giving this area an even harder time in providing facts - the discourse is in some way already set!
The WG will send the position paper to ECON and JURI committess of the EP

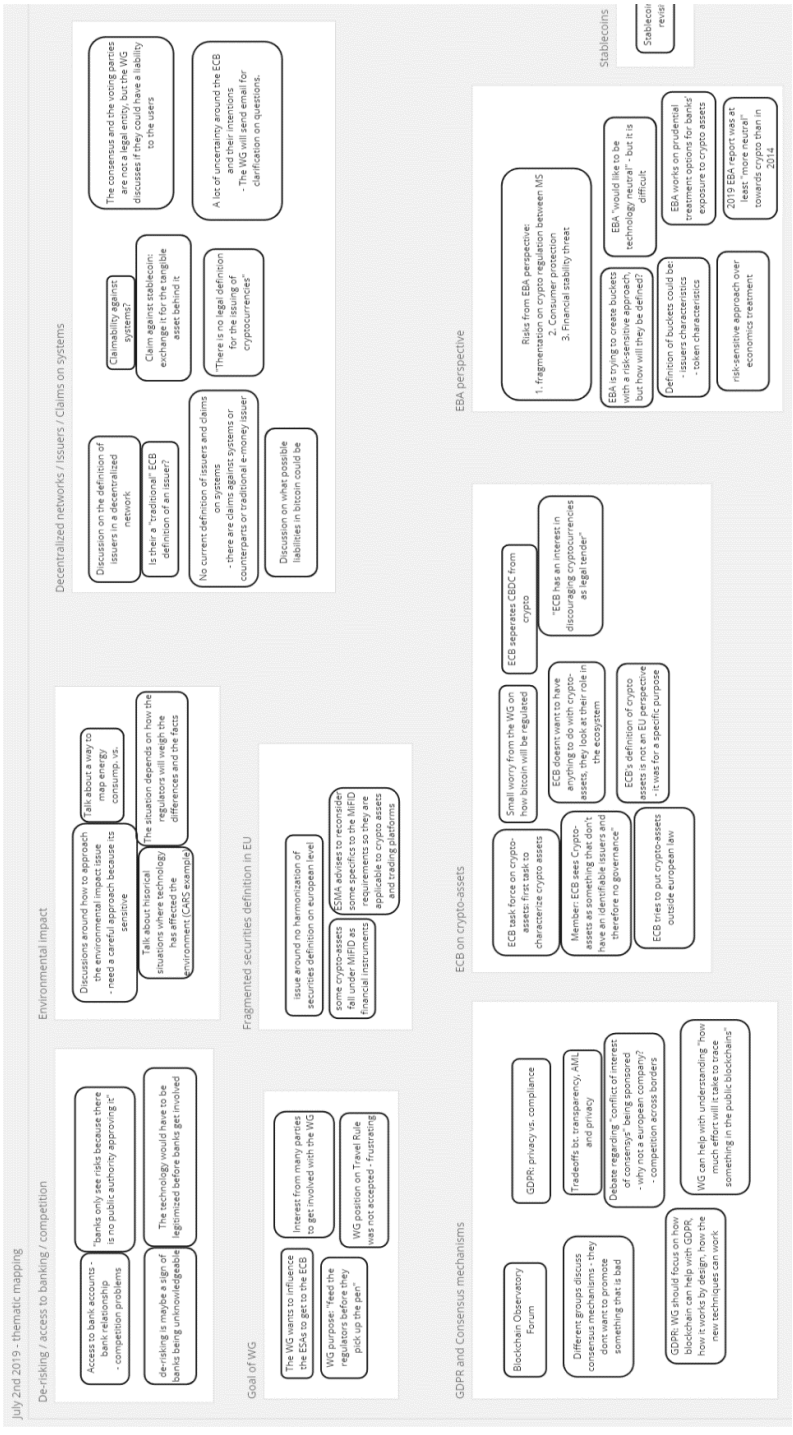
Pick up at: ECB internal report
The first report by the ECB uses another definition of crypto-assets that used until now. The main point they are trying to make is the fact that what makes crypto-assets a new asset class is NOT Blockchain, but in fact the **lack of an underlying claim/liability.**
The report also focuses on the fact that crypto assets are "seen as valuable" by the users, but not necessarily by the definition of the law.
The WG members comment that this report only describes utility tokens, fails to address stablecoins which do represent a claim on the underlying fiat.
The WG members believe the ECB is trying to push everything away from their responsibility because it is NOT money.
The fact that the ECB is recommending the Commission to harmonize and regulate gatekeepers usually turns out to be the way forward. They want to regulate the boundaries to the traditional financial system. It seems like the ECB however doesnt quite understand the meaning of "decentralized" as it is difficult to enforce regulation on those actors.
There was a small chat in the WG about how the commission could enforce auditing and regulation of algorithms similar to the AI approaches.
ECB also states in the report that a regulation of CASPs could lead to unintended legitimization of the industry + unintended move to using decentralized services because they are not as well regulated (see report for specific issues they mention).

First meeting:
X had no mandate to push anything, but he was curious to meet the group after recommendation from a colleague at DG FISMA.
Overall, he seemed very interested in solving problems, especially the fact that the FATF recommendations and X.509 digital certificate would be a hinder to VASPs and not promote the ecosystem.
He encouraged the group to push their views to member states and elsewhere with political powers.

Second session:
This was a presentation from a company in Finland. They said that a Virtual Currency Providers Act (529/2019) has entered into force, which brings certain actors and service under regulation. Other members of the WG believed this was the way forward. The talk turned into the organizer asking whether the WG members support the 5AMLD being extended to ICOs so that crypto-to-crypto exchanges are covered as well.

Third session/second meeting:
He started out presenting the current work of DG CONNECT, which included reference to different groups. The European Commission wants to be a leader in blockchain innovation. He said that they listen to the outcomes of the *Blockchain Observatory* and their findings. He seemed positive to how blockchain can optimize operational risks, reduce counterparty risk etc. He also stated that the ECB has no appetite for a CBDC at this point as it would undermine commercial banks and do AML checks. Therefore the innovation of stablecoins will happen in the private sector.
It is quite interesting how opposite the US and French approach to classification of ICOs. The US use the Howey Test and apply existing securities regulation whereas in France, the MiFID is used more.
When talking about the definition of crypto assets used by ECB in their report - he said that everybody is creating a definition that supports their policy area. **So the classification/definition of crypto assets is more political than technical at this point in time.**
He explained that the FATF recommendations come from a view that regulators want to support "known identities" so that VASP wallet services that do KYC and AML are used more. However, the WG members believe the recommendation is more hurtful to some applications of crypto assets (e.g. bitcoin) because the core developers focus on other aspects.

Appendix 5: Snapshot of Initial Thematic Categorization



Appendix 6: Interviews

Background	Date	Abbreviation
Project leader	January 20th 2019	INT1
Compliance officer	May 22nd 2022	INT2

Appendix 7: Overview of Secondary Data Sources – Public Reports

Reference #	Data source	Type of document	Headline of document	Topic	Date
European Commission, 2018	European Commission	Action Plan	*Fintech Action Plan*	Fintech in general	Mar-18
ESMA, 2018	ESMA	Own-Initiative Report	*Own Initiative Report of Initial Coin Offerings and Crypto-Assets*	ICOs and Crypto-Assets	Oct-18
ESMA, 2019	ESMA	Official report	*Advice on Initial Coin Offerings and Crypto-Assets*	ICOs and Crypto-Assets	Jan-19
EBA, 2019	EBA	Official report	*Report with advice for the European Commission on crypto-assets*	Crypto-Assets	Jan-19
ECB, 2019	ECB	Official report	*Crypto-Assets: Implications for financial stability, monetary policy, and payments and market infrastructures*	Crypto-Assets	May-19
European Commission, 2020	European Commission	Draft regulation	*Markets-in-Crypto-Assets (MiCA)*	Crypto-Assets	Sep-20
FSB, 2019	FSB	Official report	*Regulatory issues of stablecoins*	Stablecoins	Oct-19
CPMI, 2019	CPMI	Official report	*Investigating the impact of global stablecoins*	Stablecoins	Oct-19
FATF, 2019	FATF	Official report	*Money laundering risks from "stablecoins" and other emerging assets*	Stablecoins and crypto-assets	Oct-19
ECON, 2021	EP- ECON	Draft report	*Draft report on on the proposal for a regulation of the European Parliament and of the Council on markets in crypto-assets and amending Directive (EU) 2019/1937 (COM(2020)0593 – C9-0306/2020 – 2020/0265(COD))*	MiCA	Feb-21

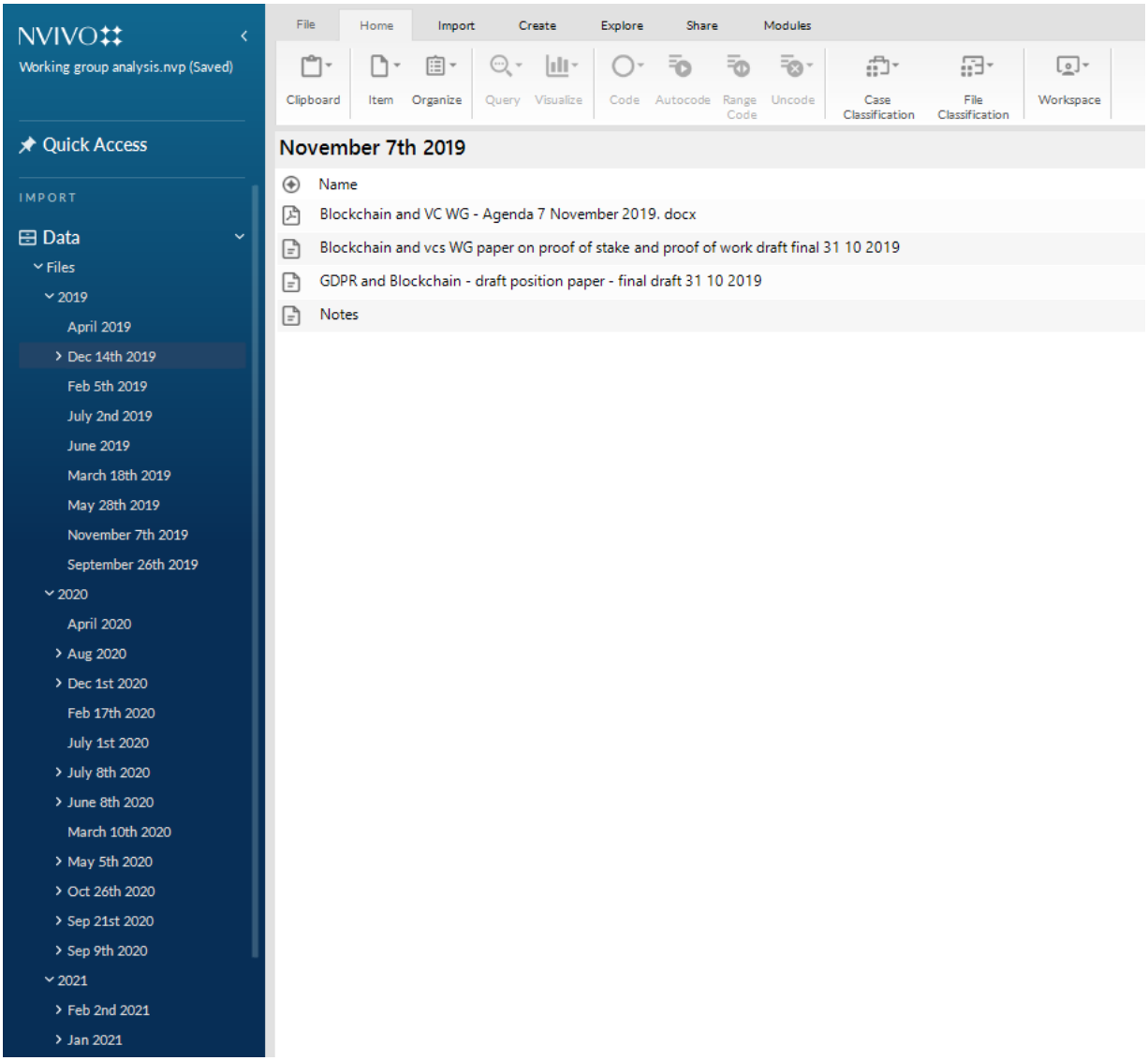
Appendix 8: Overview of Secondary Data Sources - Working Group Position Papers

Reference #	Data source	Type of document	Headline of document	Topic	Date
POS WG1	Working group	Position paper	*Comments concerning the use of the blockchain technology and its compliance with the GDPR for payments related uses*	GDPR	Feb-19
POS WG2	Working group	Position paper	*Reply to the European Commission questions about the mitigating measures in place in our sector, in view of the preparation of the European Commission 2nd Supra National Risk Assessment for money laundering and terrorist financing*	SNRA 2	Feb-19
POS WG3	Working group	Position paper	*Comments about paragraph 7(b) of the new FATF Interpretive Note to Recommendation 15*	FATF	Jun-19
POS WG4	Working group	Position paper	*Comments concerning the "Blockchain and the GDPR" paper of the EU Blockchain Observatory & Forum*	GDPR	Oct-19
POS WG5	Working group	Position paper	*Paper on a European legislative approach to Initial Coin Offerings (ICOs)*	ICO	Oct-19
POS WG6	Working group	Position paper	*Paper on the comparison between the Proof –of- Work and Proof-of-Stake consensus mechanisms*	P-O-S vs. P-O-W mechanisms	Oct-19
POS WG7	Working group	Position paper	*Letter to Commissioners Vestager, Breton and Dombrovskis about the new FATF Recommendation 16*	FATF (travel rule)	Jun-20
POS WG8	Working group	Position paper	*Reply to the European Commission public Consultation on a retail payments strategy for the EU*	Payment Strategy	Jun-20
POS WG9	Working group	Position paper	*Reply to the European Banking Authority Draft Guidelines under Articles 17 and 18(4) of Directive (EU) 2015/849 on customer due diligence and the factors credit and financial institutions should consider when assessing the money laundering and terrorist financing risk associated with individual business relationships and*	AML	Jul-20

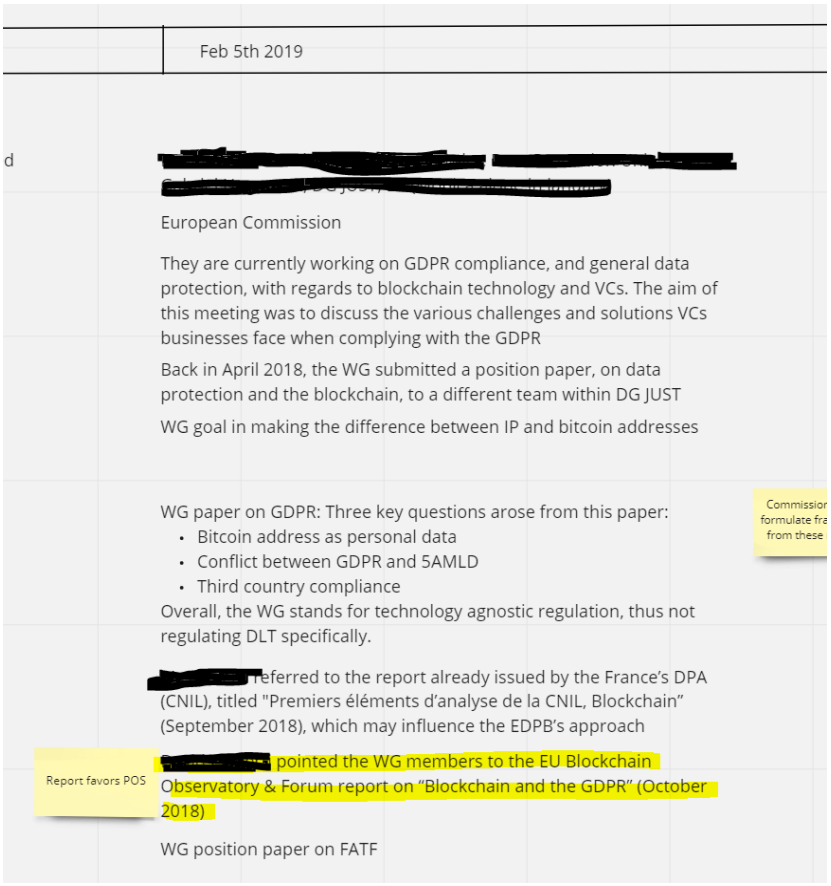
			occasional transactions (''The Risk Factors Guidelines''), amending Guidelines JC/2017/37		
POS WG10	Working group	Position paper	*Comments about the European Commission Public consultation on an action plan for a comprehensive Union policy on preventing money laundering and terrorist financing*	AML	Jul-20
POS WG11	Working group	Position paper	*Reply to the Financial Stability Board Consultative document "Addressing the regulatory, supervisory and oversight challenges raised by "global stablecoin" arrangements ("Stablecoins Consultation'')*	Global stablecoins	Jul-20
POS WG12	Working group	Position paper	*Reply to the European Banking Authority Consultative document "Call for input on 'de-risking' and its impact on access to financial services" (De-risking Consultation)*	de-risking (access to financial services)	Sep-20
POS WG13	Working group	Position paper	*Position Paper on the European Commission's Proposal for a Regulation on Markets in Crypto-assets (MiCA Regulation).*	MiCA	Nov-20
POS WG14	Working group	Position paper	*Position Paper on the European Commission's Proposal for a Regulation on a Pilot Regime for market infrastructures based on distributed ledger technology ("DLT Pilot Regime").*	DLT pilot regime	Nov-20
POS WG15	Working group	Position paper	*Comments about the FATF Public Consultation on its Draft updated Guidance for a risk-based approach to virtual assets and VASPs*	FATF	Apr-21

Appendix 9: Snapshot of the Chronological Overview of Data Points

Appendix 10: Chronological Data Sorting in NVivo



Appendix 11: Example of Snowballing Sampling to Identify Relevant Actors



Feb 5th 2019

d [redacted]

European Commission

They are currently working on GDPR compliance, and general data protection, with regards to blockchain technology and VCs. The aim of this meeting was to discuss the various challenges and solutions VCs businesses face when complying with the GDPR

Back in April 2018, the WG submitted a position paper, on data protection and the blockchain, to a different team within DG JUST

WG goal in making the difference between IP and bitcoin addresses

WG paper on GDPR: Three key questions arose from this paper:

- Bitcoin address as personal data
- Conflict between GDPR and 5AMLD
- Third country compliance

Overall, the WG stands for technology agnostic regulation, thus not regulating DLT specifically.

Commissior formulate fra from these

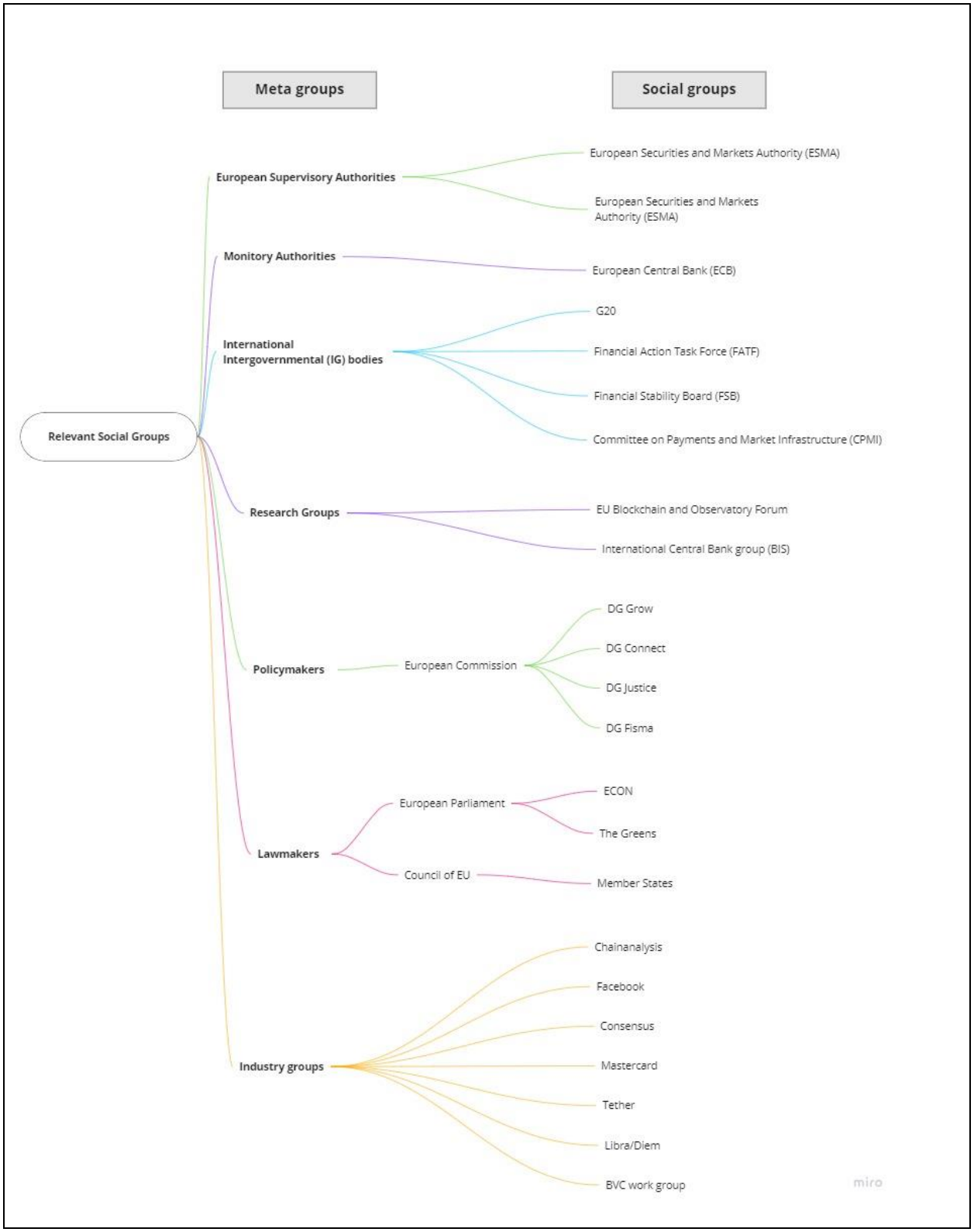
[redacted] referred to the report already issued by the France's DPA (CNIL), titled "Premiers éléments d'analyse de la CNIL, Blockchain" (September 2018), which may influence the EDPB's approach

Report favors POS

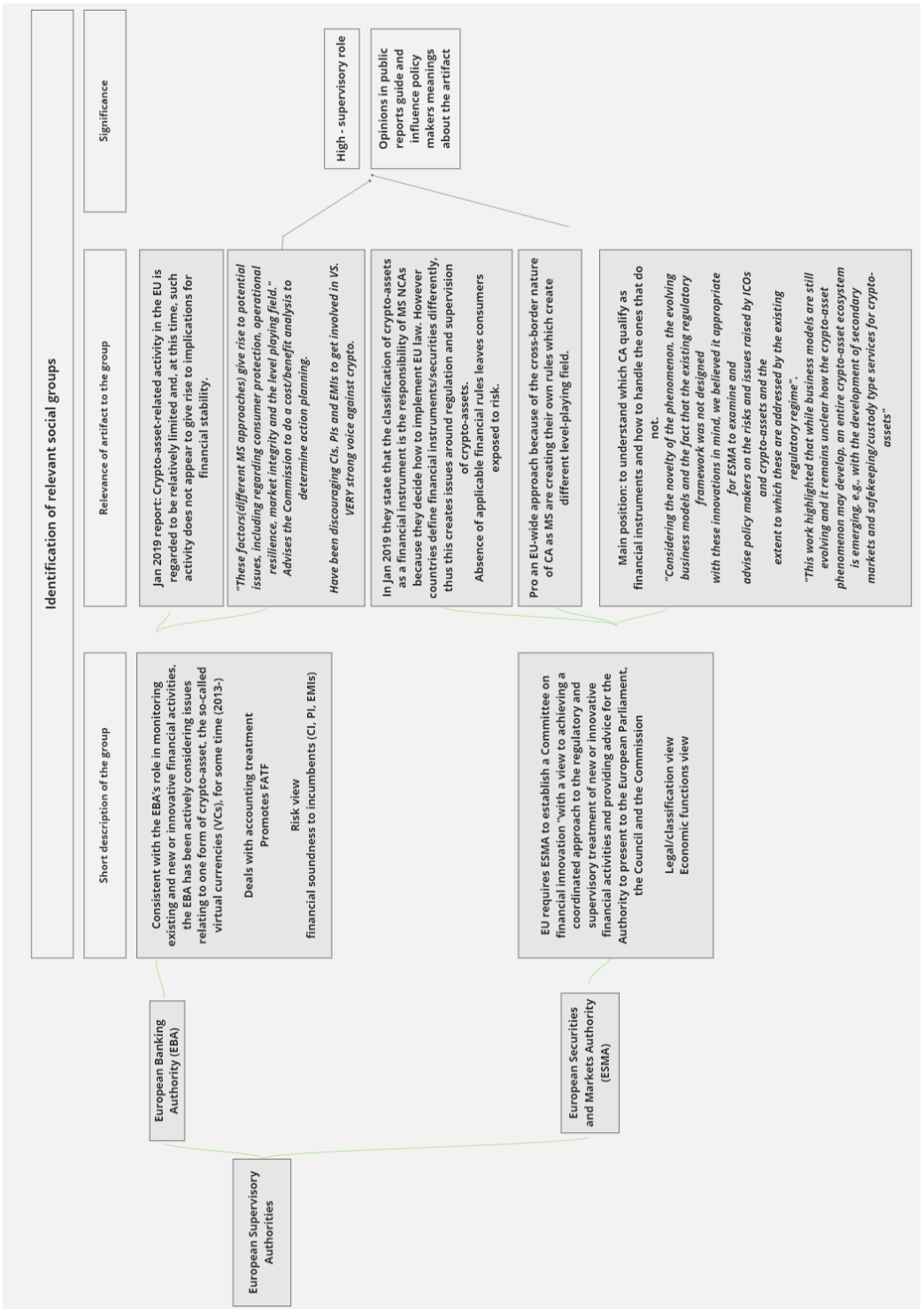
[redacted] pointed the WG members to the EU Blockchain Observatory & Forum report on "Blockchain and the GDPR" (October 2018)

WG position paper on FATF

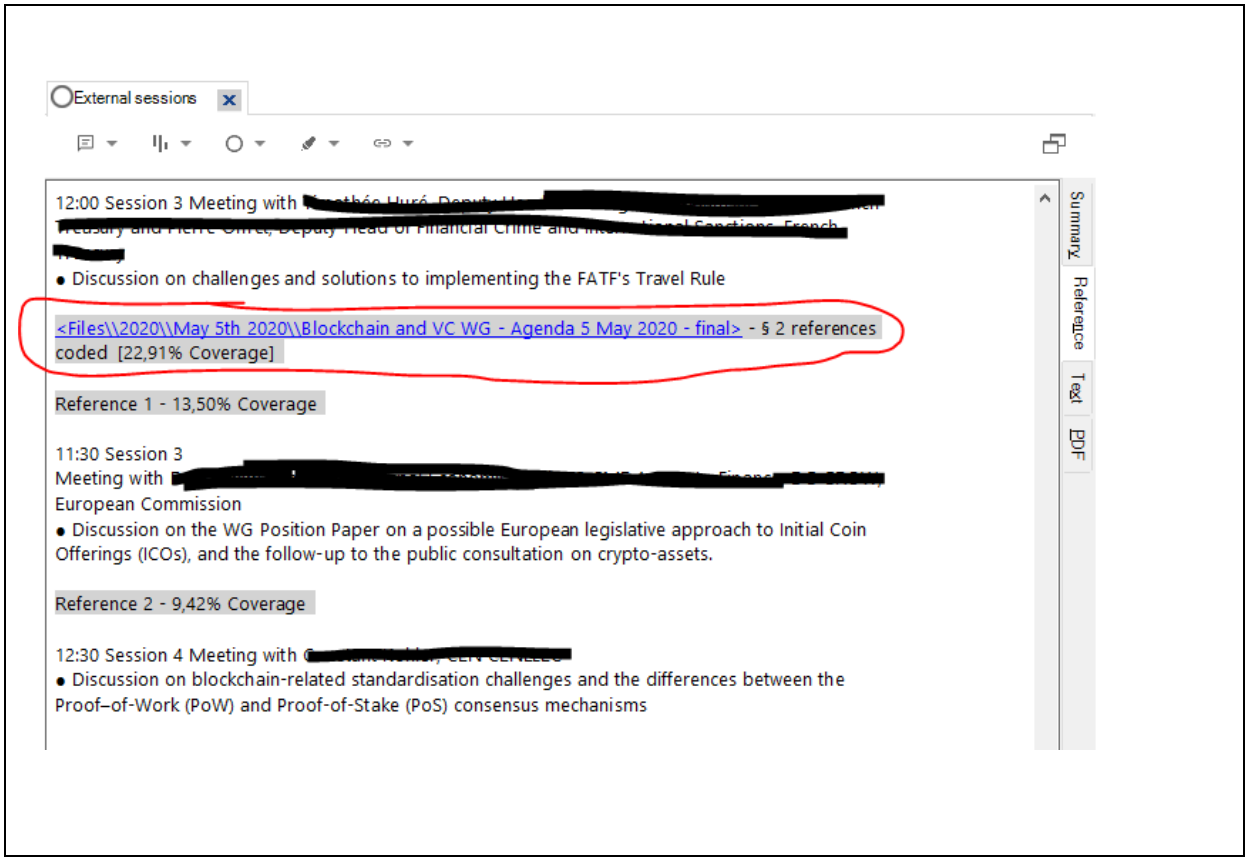
Appendix 12: Initial Mapping of Actors



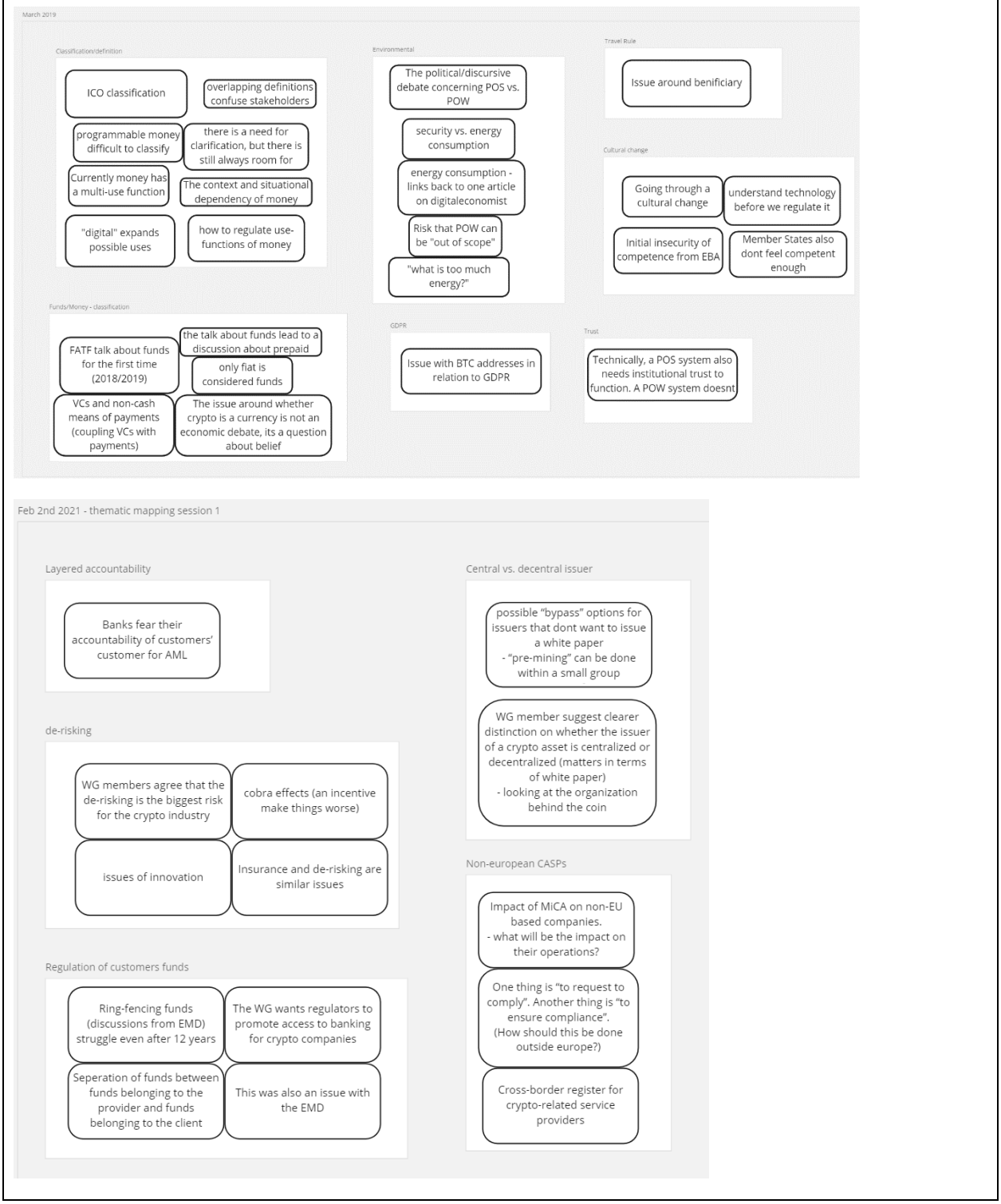
Appendix 133: Example of the Analytical Process to Identify Relevant Actors



Appendix 144: Example of Coding with Reference to Date and Type of Data Source



Appendix 155: Example of the Analytical Process to Categorize Themes



Appendix 166: Overview of Official Websites for Relevant Actors

ec.europa-eu	European Commission	Official website
Europarl.europa.eu	European Parliament	Official website
Consilium.europa.eu	Council of the European Union	Official website
Ecb.europa.eu	European Central Bank	Official website
G20foundation.org	G20 Foundation	Official website
Fsb.org	Financial Stability Board	Official website
Bis.org	Bank of International Settlements	Official website
eublockchainforum.eu	EU Blockchain Observatory and Forum	Official website
Consensys.net	Consensys	Official website

Appendix 17: Summary of ESAs and ECB reports on Crypto-Assets (January 2019)

Framing	ESMA	EBA	ECB
Definition	Crypto-assets are interpretive-hybrid financial instruments	Crypto-assets are not money, but some qualify as e-money	Crypto-assets lack an underlying claim/liability on the issuer/custodian
Risks	- Investor protection - Market integrity - Disintermediated access to crypto asset trading platforms - Decentralized business models - No established standards for crypto-assets in terms of ISIN, CFI or currency codes - Identification of operators - Reliance on smart contracts - Hybrid platforms	- Consumer risk - Market integrity - Anti-money laundering - Potential new ways for capital rising - Level-playing field due to divergent approaches across the EU	- Money laundering - Consumer risk - Market integrity - Fundamentally different from other financial claims: "are de-factor considered by users of something of value" - Lack accounting treatment
Future regulatory efforts	Premature markets, advise to expand and clarify existing laws	Advise to perform a cost/benefit analysis to assess impact	Advise to regulate boundaries between existing financial markets and crypto-asset markets and regulate gatekeepers
Financial Stability	ESMA does not believe it raises financial stability issues	EBA has limited concerns	ECB sees no immediate threat due to low value and limited linkages
Monetary Policy	-	-	No significant implications

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