



CUTTING OUT THE MIDDLEMAN: A CASE STUDY OF BLOCKCHAIN-INDUCED RECONFIGURATIONS IN THE SWISS FINANCIAL SERVICES INDUSTRY

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Abstract

Blockchain-technology promises to have far-reaching economic and social implications, which are not yet foreseeable in its extent. It threatens to disintermediate many well-established sectors of the economy, and incumbent businesses might be overtaken by ambitious newcomers. The financial services industry is particularly “ripe for disintermediation” since blockchain-technology has with Bitcoin and other cryptocurrencies its first real-world use case. Incumbent businesses have to react if they do not wish to perish. However, technological evolution also affects the State and other governmental bodies: institutional frameworks or territorial arrangements can become obsolete or detrimental to business activity and may need to be amended. This paper aimed to examine ongoing technology-induced reconfigurations in the financial services industry through a four lenses framework. The technology, actors and their discourses, as well as the regulatory environment and affected territories, need to be considered all at once. We have applied this framework to the case of Switzerland: a country with an influential financial services industry that has seen better days. We have found that (1) the Swiss Confederation has swiftly adapted its institutional framework to the new reality in order to foster competition and innovation; (2) there are some raucous controversies between challengers and incumbent businesses. However, a tacit compromise allows them to co-exist; (3) four “crypto-clusters” are emerging. These are located in traditional banking centers (Zurich, Zug, Lake Geneva region, Chiasso) that are seeking to strengthen their international visibility and improve their competitiveness.

Keywords

Blockchain
Bitcoin
Cryptocurrencies
Financial Services Industry
Innovation
Technology
Creative Destruction
Economies of Worth

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1. Introduction

Blockchain-technology promises to have far-reaching economic and social implications. The well-known Canadian business executive, consultant and author, Don Tapscott, affirms that blockchain technology would herald “the second era of the internet.” Before that, we had an *Internet of information* and now, he says, we are getting an *Internet of Value*, where anything of value ultimately – from money to art – can be stored, transacted and secured confidentially (Tapscott 2017). In his speech given at a cryptocurrency-conference, Tapscott compared our days with the year 1994, when the Internet was on the brink of its break-through. The Internet of Information had brought about many changes in the economy and the Internet of Values, he says, is going to continue to go down this disruptive path. The Internet of value “appears to be likely to transform a number of important industries that supply or rely upon third-party assurance.” (Tapscott and Tapscott 2017, 3) Think of banks enabling an international payment. Technologies like Bitcoin allow anyone to send money across borders almost instantly and with virtually any fees. Think of notaries attesting a real estate transfer. Using blockchain technology can speed up transactions by reducing the need to for paper-based record keeping. It can help with tracking and verifying ownership, ensuring the accuracy of documents, and transferring property deeds. Alternatively, think of sharing-economy platforms such as Uber: the blockchain can be used to create decentralized peer-to-peer ride-sharing apps, allowing both car owners and users to arrange terms and conditions in a secure way without having to pay the third-party in the middle (Uber) a considerable fee, with every transaction that has been made between the passenger and the taxi driver.

In theory, all industries dealing with data and transactions of any kind could be disintermediated by blockchain technology. Whether that will occur, is another question, however. Incumbent businesses are working hard to figure out how to embrace and use the new technology for their purposes. The financial services industry is particularly “ripe for disintermediation” since blockchain-technology has with Bitcoin and other cryptocurrencies its first real-world use case

Albeit being more than eight years old, the blockchain-technology has only become noticed by a broader public in 2013, when the price of a bitcoin hit for the first time the \$1'000 mark. Academic research in social sciences usually lags behind the latest socio-economic developments, and blockchain-technology is no exception to it. To be precise, there are only a few academic contributions in social science dealing with it¹. Part of the reason is that we are observing a process in the making, which has not yet led to a stable outcome. This is why it is difficult to “tell the whole story”; the object of research always risks slipping from our grip and changing its shape in the meantime.

The ambition of this paper is, therefore, a modest one: *examining ongoing technology-induced reconfigurations in the financial services industry through a four lenses framework*. We posit that blockchain-technology, the actors and their discourses, as well as the regulatory environment and the affected territories, have to be considered all at once in order to understand the current development. We are aware that blockchain-technology will affect many other sectors of the economy. However, as already mentioned above, the financial sector is currently the most concerned and provides the most abundant empirical data.

¹ By January 2018, Scopus cites 33 peer-reviewed journal articles. The number tends towards zero, if one excludes law journals from the query.

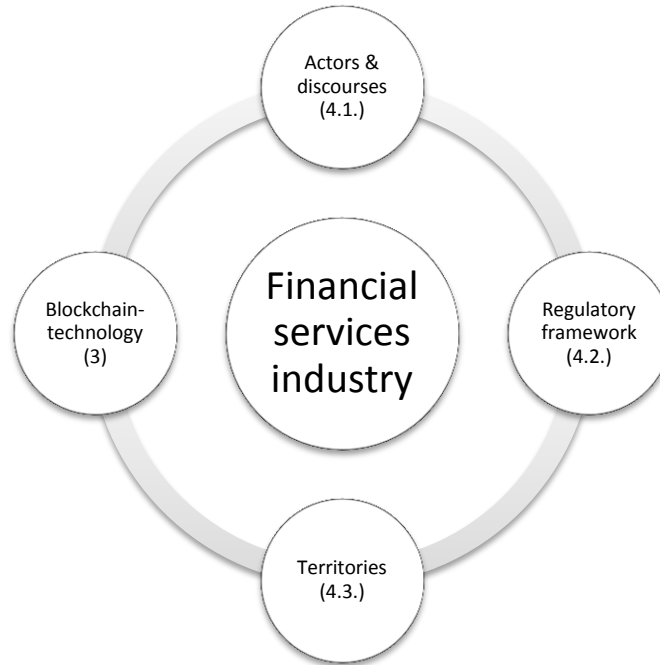


Figure 1: Schematic representation of the analytical framework.
Source: own elaboration

Our framework will allow us to grasp the current developments from four different points of view. However, instead of trying to do this on a global scale – and telling an overly simplified story – we are focusing our attention on one specific country. To be more precise, we are going to study the case of Switzerland. This case is particularly compelling because it is, next to countries like the United States, Singapore or China, one of the leading nations in the propagation of blockchain-technology and it boasts hosting renown blockchain-startups, such as the Ethereum Foundation, Shapeshift or Lisk.

Meanwhile, the remainder of this paper is structured as follows: section 2 will give an overview of the methodology that was used to obtain our data. Section 3 will briefly explain Bitcoin, the blockchain-technology, and its disruptive potential. We will then elaborate in section 4 the interplay of the involved actors and the institutional framework. We will show how the financial services industry and its contenders use different types of discourses to legitimize, respectively delegitimize the use of cryptocurrencies and blockchain-technology. We will also discuss the concentration of blockchain-related companies in the areas of Zug, Zurich, Chiasso and Lake Geneva. Finally, Section 6 will wrap up the preceding considerations.

2. Methodology

At the beginning of our research, we have conducted three exploratory interviews (Creswell 2007, 132–33) with persons engaged in the Swiss blockchain field. We also have made use of the technique of “participant observation” by assisting in multiple blockchain-conferences. Furthermore, we relied heavily on what is called “cyber-ethnography” (Ward 1999) or “netnography” (Kozinets 2015). Netnography is an online research method that allows the researcher to gain insights into the virtual world of the studied group or collective. Over the time of four months, we have actively engaged in

different subreddits² and telegram groups³, and we have started following over ten popular YouTubers (10'000+ followers). Furthermore, we have studied trade journals such as *CoinDesk* or *Cointelegraph*; and finally, we also have made some modest investments in cryptocurrencies with the intention to *make experiences* with the technology to better understand the issues at stake.

3. The blockchain-technology and its disruptive potential

One of the most well-known and well-respected figures in bitcoin, technologist and serial entrepreneur Andreas Antonopoulos (2017, 1), describes Bitcoin as follows:

Bitcoin is a collection of concepts and technologies that form the basis of a digital money ecosystem. Units of currency called bitcoin are used to store and transmit value among participants in the bitcoin network. Bitcoin users communicate with each other using the bitcoin protocol primarily via the internet, although other transport networks can also be used. The bitcoin protocol stack, available as open source software, can be run on a wide range of computing devices, including laptops and smartphones, making the technology easily accessible

According to Antonopoulos (2017, 2), Bitcoin is also the name of the protocol, a peer-to-peer network, and a distributed computing innovation. It brought together four critical innovations in cryptography and distributed systems. Bitcoin consists of a decentralized peer-to-peer network (the Bitcoin protocol); a public transaction ledger (the blockchain); a set of rules for independent transaction validation and currency issuance (consensus rules) and a mechanism for reaching global decentralized consensus on the valid blockchain (Proof-of-Work algorithm).

There is a salient ideological component to Bitcoin. Invented by a person called Satoshi Nakamoto in the aftermath of the financial crisis of 2007/08, it set out to create a decentralized network that could work without any central controlling authority. In a post in an online-forum, Nakamoto suggested that his motive for creating Bitcoin was outrage at the financial system:

The root problem with conventional currency is all the trust that's required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust. Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve.

This fundamentally political project found strong support among libertarians and anarchists, “who saw in bitcoin a means of removing the money supply from the grasping hands of government.” (Feuer 2013) Andreas Antonopoulos calls it “the money of the people” (2016, 3) and further elaborates that

Bitcoin represents a fundamental transformation of money. [It] changes [money] radically and disruptively by changing the fundamental architecture into one where every participant is equal. [...] Where your money is yours. [...] No one can tell you what to do or what not to do with your money. [Bitcoin] is a system of money that is simultaneously, absolutely transnational and borderless. We've never had a system of money like that. It's a system of money that transmits at the speed of light, one that anyone in the world can participate in with a device as simple as a text-messaging phone.

² Discussion forums on www.reddit.com.

³ Chat groups that are using the telegram-app.

The ideological roots of Bitcoin are hard to ignore. However, with the rising success and adoption of Bitcoin, they have made place to a somewhat more moderate tone of voice. To be sure, the original ideology is still there, but new actors have entered the game, and they do not necessarily share the same motives with the initial community. The narrative of Bitcoin as a tool for change is now to being completed by a simpler storyline: “that of Bitcoin as a kind of crypto-credit card — or, even more, as a digitized casino game.” (Feuer 2013)

3.1. Why is there such a buzz around Bitcoin and blockchain-technology?

It’s safe to say that news about Bitcoin and blockchain-technology are influencing each other in a positive way: there’s no article about cryptocurrencies without reference to blockchain-technology and reports about blockchain-technology usually cite Bitcoin as the most salient use case of blockchain-technology.

What blockchain-technology really is all about is **decentralizing trust** and enable **decentralized authentication** to take place. In other words: **the blockchain allows to cut out so called middlemen (like banks, custodians and other types of trustees) that used to play a role as a third-party guarantor.** There are, however, several other reasons for which blockchain-technology is called “revolutionary”: (1) (A public blockchain) is impossible to shut down; (2) in the case of value transfer, it prevents double spending⁴ and (3) it cannot be hacked.

There are numerous potential applications that have nothing to do with cryptocurrencies. Other applications may be around the Internet of Things (IoT); machine-to-machine type systems that are in need of trust and authentication mechanisms that work in a completely decentralized way. The blockchain-technology can be used for purposes of fact-keeping or record-keeping that can be done a lot more securely and efficiently. Take for example educational degrees, taxes, properties, real-estate transactions or title insurances. Maersk is testing a blockchain to track shipments and coordinate with customs. Airbus hopes to use blockchains to monitor the many parts that come together to make a plane. Accenture, Microsoft and a United Nations group are collaborating to build a blockchain for digital identity, which could be useful for refugees who lack social documents. Using blockchain technology, Walmart was able to track the shipping history of two mangos in 2 seconds. Using standard methods, this process took 6 days, 18 hours, and 26 minutes.(Robert Hackett 2017)

The blockchain technology operates in a multidimensional way. Different authors usually highlight different aspects of it or describe the same aspect with different terms. There seems, however, to be a consensus around four central properties of blockchain technology:

⁴ Double-spending refers to the risk that a digital currency can be spent twice. E.g. Alice pays the same “virtual” dollar to Bob and Charlie.

Decentralisation	It removes the ‘single point of failure’ embodied in a compromisable, trusted central authority; consensus about modifications and transactions of value is reached in an environment in which trust has been disintermediated, decentralised and distributed through a technological instrument (the consensus mechanism).
Immutability	Since each block in a distributed ledger’s chain refers back cryptographically to the previous blocks, records are permanent as long as the participants who carry out the chain’s consensus mechanism continue to maintain the network.
Transparency	Network participants have visibility access to the process of consensus formation on-chain, as well as to the blockchain’s entire record — this enhances business-friendliness (for some use cases), and guarantees an audit trail and a trusted workflow.
Security and resilience	The blockchain is secure in two aspects: (1) on the level of individual transactions, (2) on the level of the whole system. Regarding the individual level, the blockchain ensures that ownership is kept exclusive to the disposal of the lawful owner only. On the overall level, the blockchain protects the ownership of all owners from manipulation, forgery, counterfeiting, double spending, and unauthorized access.

Table 1: the four most salient properties of the blockchain protocol.

Source: elaborated on the base of Julius Bär (2017) and Drescher (2017).

3.2.A tale of two blockchains: open and closed ones

Around the year 2013, with Bitcoin reaching the first time a value of more than \$1’000, public awareness of cryptocurrencies increased dramatically. This woke the interest of the financial services and other industries and they were starting to evaluate whether they could make use of the technology powering Bitcoin (i.e. the blockchain). Although the vast array of potential use cases by blockchain-technology was noted, many concluded that “using a public blockchain such as Bitcoin was ill-suited for regulated corporations for a variety of reasons [...]. For instance, financial institutions seemed uncomfortable using a public infrastructure run by anonymous miners and powered by an unregulated, volatile currency.”(Hileman and Rauchs 2017, 18)

Ever since, a multitude of other blockchain types have been developed. Having different blockchain concept, it is argued, allows for individual problems to be solved in a localized way, due to each company and market. So called *closed* or *permissioned* blockchains⁵ are supposed to correspond better to the needs of corporate entities. Following a typology proposed by Hileman and Rauchs(2017, 20), blockchains can be further segmented between different types of permission models. The permission model refers to the different types of permissions that are granted to participants of a blockchain network. Hileman and Rauchs identify three major types of permission that can be set when configuring a blockchain network: *Read* (who can access the ledger and see transactions), *Write* (who can generate transactions and send them to the network), and *Commit* (who can update the state of the ledger)⁶.

⁵ The terms *private*, *permissioned*, and *closed* are often used interchangeable.

⁶ The ledger state is generally updated by appending a new block to the blockchain. This process is called ‘mining’ in public blockchains.

		Read	Write	Commit	Example	
Blockchain types	Open	Public permissionless	Open to anyone	Anyone	Anyone ⁷	Bitcoin, Ethereum
		Public permissioned	Open to anyone	Authorised participants	All or subset of authorized participants	Sovrin
	Closed	Consortium	Restricted to an authorized set of participants	Authorised participants	All or subset of authorized participants	Multiple banks operating a shared ledger
		Private permissioned ('enterprise')	Fully private or restricted to a limited set of authorized nodes	Network operator only	Network operator only	Internal bank ledger shared between parent company and subsidiaries

Table 2: Main types of blockchains segmented by permission model
Source: (Hileman and Rauchs 2017)

3.3. How blockchains are changing economic models of incumbent companies (especially in financial services industry) by driving down transaction costs.

The centerpiece of the British economist Ronald Coase's research was understanding *why firms do exist*. He was puzzled by the fact that "The normal economic system works itself. For its current operation, it is under no central control, it needs no central survey. Over the whole range of human activity and human need, supply is adjusted to demand, and production to consumption, by a process that is automatic, elastic and responsive." (Coase 1937, 387) He discovered that the answer to this apparent paradox lies in the existence of *transaction costs* (1937, 393).

In his *theory of the firm*, Coase identified in the economy three different types of transaction costs: the costs of search (finding all the right information, people, resources to create something); the cost of coordination (getting all these people to work together efficiently); and the cost of contracting (negotiating the costs for labor and materials for every activity in production, keeping trade secrets, and policing and enforcing these agreements) (Tapscott 2017, 93).

The breakthrough of the internet helped firms reducing their internal transaction costs: search costs through browsers and the World Wide Web; coordination costs through email, social networks and cloud computing. However, the Internet has only had peripheral impact on standard corporate architecture: companies remain mostly structured in a hierarchic way, and most activities occur within corporate boundaries.

⁷ Requires significant investment either in mining hardware (proof-of-work model) or cryptocurrency itself (proof-of-stake model).

Now blockchain-technology promises to lower radically transaction costs and alter the structure of the firm and the economy. Blockchain-technology furthermore reduces significantly the costs of trust-building since the trust is not anymore assured by a *middleman* (bank, notary, insurance company, etc.) but by the consensus mechanism inherent to blockchain-technology. The potential consequences are far reaching: firms are potentially getting smaller (since services can be outsourced) and provider of middleman-services see their business model become obsolete.

4. Actors, institutions, and territories implied in the ongoing reconfiguration

In this section, we will give an overview of the actors involved in the developing Swiss blockchain-industry (section 4.1). We will then turn our attention towards the different dimensions of an ongoing controversy between cryptocurrency champions and representatives of the financial services industry. This public dispute is “raucous” in its tone of voice and it takes a comparatively large space in the media. The public therefore might get the impression that blockchain-technology is only about Bitcoin and cryptocurrencies – which is not true. We will see, however, that the two competing camps are heading towards a compromise that favors coexistence (and collaboration) instead of enduring confrontation. The regulatory authorities play an important role in this development (section 4.2). They have not let themselves taken by one of the two camps. Instead they have created a restrained and pragmatic regulatory environment that allows competition and fosters innovation but that also prevents excesses and risky business models. Finally we will see in section 4.3 how traditional Swiss banking centers try to hop on the blockchain-train in order to strengthen their international visibility and improve their competitiveness.

4.1. Who are the implied actors?

How does the Swiss blockchain-industry look like? Who are the involved actors? To begin with, we can start with the representation of a typical *cryptocurrency-ecosystem* (Figure 2). There are three remarks to be made: firstly, there are different types of actors involved. These actors are not necessarily situated on Swiss territory. For example, a miner⁸ from Zimbabwe could sell his Bitcoin at a Swiss exchange in order to obtain Swiss francs. The network operates thus across borders. Secondly, Figure 2 shows that banks are placed somewhat off-site. This is due to the fact that banks are indecisive whether they enter the market or not. In the past, they have taken an overwhelmingly dismissive stance on cryptocurrencies, but there are signs of cryptocurrencies’ increasing acceptance within the financial services industries (Higgins 2017). Thirdly, blockchain-technology can be employed in many different sectors of the economy (and not only in the financial services industry). Depicting exhaustively the Swiss blockchain-ecosystem would therefore be even more complicated than the schematic representation of a typical cryptocurrency-ecosystem. This would, however, go beyond the scope of this article. We have therefore chosen to give only an overview of the most salient actors in Switzerland. Yet, this should be sufficient to understand the underlying tectonics.

⁸ A person or a company that helps adding transaction records to the public ledger of the network (= blockchain) by running complicated mathematical calculations on his computer(s). He therefore gets rewarded with Bitcoin or another cryptocurrency.

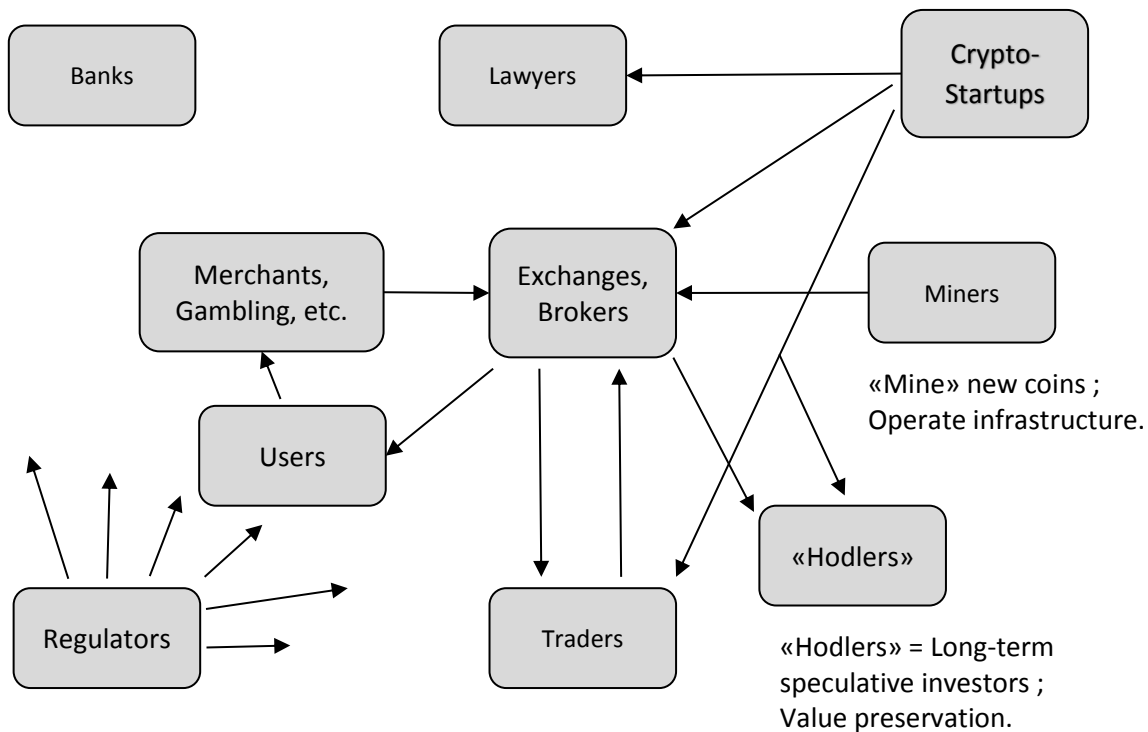


Figure 2: Schematic representation of the cryptocurrency ecosystem.
Source: elaborated on the base of Meisser (2017).

Bitcoin Association Switzerland (BAS) is, according to their self-description, a community of (Bitcoin) enthusiasts with regular events that tries to resolve open legal questions and educate the public by providing a contact point for media inquiries. Founded in 2013, the primary objective of this association is to promote digital currencies. It does not have direct economic purposes (L. Meisser 2013). They count 38 institutional members, which are mostly comprised of startups, law firms, consultants and two big enterprises: EY and Swisscom Blockchain AG. Besides the institutional members, there are over 100 private members. The association is ideologically indebted to libertarianism (they count *Hayek Club Zürich* amongst their partner organizations), and they are in favor of a liberal regulation of the finance- and cryptospace (L. Meisser and Betschart 2017). Although not generalizable, members of BAS tend to be newcomers challenging the incumbent business actors.

Crypto Valley Association is a professional organization situated in the city of Zug. It was established in January 2017 with the goal to “coordinate, accelerate, and scale the further development of Crypto Valley into the world’s best ecosystem for crypto technologies and businesses.” (Crypto Valley 2017b) They have 157 corporate members, amongst them the canton and the city of Zug, Lucerne University of Applied Sciences and Arts (Hochschule Luzern) and also Swisscom Blockchain AG⁹. Crypto Valley association is all about promoting Switzerland and in particular Zug as “a leading centre of innovation” for the blockchain-industry. They have a worldwide perspective¹⁰ and are less ideological and

⁹ Interestingly, UBS was one of Crypto Valley’s founding members, but is at present date not anymore listed amongst the members.

¹⁰ The association’s president, Oliver Bussmann, was recently invited as a panelist on Ripple’s Swell-Conference on October 17th 2017 in Toronto.

more business-oriented than BAS. Their members are comprised of challengers *and* incumbent players.

UBS & Credit Suisse take an active role in promoting blockchain technology and highlighting its merit. But at the same time, they're repeatedly shedding a bad light on Bitcoin and other cryptocurrencies (Kindergan 2017b). For example, Credit Suisse associates Bitcoin with cyber theft and calls it "the risky currency" (Kindergan 2017a). UBS in turn published an investment report titled "Cryptocurrencies. Beneath the bubble" (UBS 2017) in which it states that "cryptocurrencies will never be used as a store of value" and that they "will never be used for a majority of transactions." On the other hand, they highlight in the remainder of the report the usefulness of blockchain technology and its manifold potential applications. As we will discuss in section 4.1.2, this kind of discourse can be described as "blockchain, not Bitcoin". The banks are actively engaging in developing their own (permissioned) blockchain-systems. E.g. UBS and Credit Suisse are members of the R3-consortium, are partnering with IBM and did create the Utility Settlement Coin (USC)¹¹.

Technology companies and consulting firms play an important role in the technology transfer. They help implementing blockchain-based solutions or offer consulting advice. IBM for example is putting big efforts in the promotion of the open-source blockchain *Hyperledger*, to which it has contributed an important amount of work. We can cite in the same vein Swisscom, a major telecommunications provider, who recently created a blockchain-spinoff (Swisscom Blockchain AG). Other players are Deloitte Switzerland, who published a Whitepaper (Seffinga, Lyons, and Bachmann 2017) in which it explains at length the advantages of blockchain technology for business companies and how they can implement it in their business model. Companies like EY (2016), PwC (Plansky, O'Donnell, and Richards 2016) and KPMG (Nastik and Huber 2017) do also offer competencies in the field.

Swiss educational establishments are also playing a part in the game. Lucerne University of Applied Sciences and Arts is strikingly visible in the domain. In 2016, they have partnered up with Swisscom, SIX (payment solutions) and Zürcher Kantonalbank (the 3rd largest bank of Switzerland) to develop a platform for OCT-trading (Bucher 2016). The University of Zurich is currently developing together with *Procivis* a blockchain-based e-voting solution (Procivis 2017), and one of its research group is collaborating with the startup *Modum* on a blockchain based temperature monitoring system for medicines (Startupticker.ch 2017b). In the French-speaking part of Switzerland, the EPFL (*Federal Polytechnic School of Lausanne*) helped to launch *Ambrosus*, a startup seeking to improve food supply chain thanks to the blockchain protocol and smart contracts (Startupticker.ch 2017a). In sum, Swiss educational establishments do take an active role in the development of a blockchain industry. They offer startups an infrastructure during their critical initial phase and do collaborate with business partners from the private industry.

Media Outlets do shape public opinion and therefore its attitude towards cryptocurrencies and blockchain-technology. Swiss media conceives of itself as a "watchdog" that critically scrutinizes social developments. Reports about Bitcoin or other cryptocurrencies tend therefore to be rather critical in tone. They preferably discuss the rapid (and seemingly unnatural) growth in value of Bitcoin or the shady uses to which it can be put. In-depth analysis or discussions of the blockchain-technology are rarely found in the mainstream-

¹¹ USC is an asset-backed digital cash instrument implemented on blockchain technology and is being designed for use within institutional financial markets.

media. This might be due to the fact that journalists often lack the time-resources to make themselves familiar with the technical and philosophical underpinnings of blockchain-technology (Gasteiger 2017). Finally, the logic of the “attention economy” incites news outlets to give a disproportionate weight to controversies and disputes. The divide between cryptocurrency champions and the financial services industry (section 4.1.1.) might therefore be portrayed sharper as than it actually is.

The Swiss Confederation has acted swiftly upon the arrival of the new technology and has drafted a new legal framework especially designed for Fintech¹²-startups (see Box 1 on page 20). The Confederation thus favors an inclusive approach: bring all the camps on the table and give them equal opportunities. It tries to find a compromise between the competing camps, instead of preferring one over the other. In general, the Swiss Confederation takes a liberal and pragmatist stance by observing the scene and intervening only if necessary. However, some actors in the startup-field do think that the Swiss Confederation is not doing enough to promote the new technology (Gasteiger 2017). On the other hand, what seems like a lack of engagement might also be due to a lack of knowledgeable resources within the Confederation. At least this suggests a statement made by the head of the Federal Department of Economic Affairs, Johann Schneider-Ammann, at the occasion of a visit to the city of Zug (the “Crypto Valley”). Schneider-Ammann said, referring to the Confederation, that “Bern does not have the knowledge that Zug has.” (Brandenberg 2017)

4.1.1. A controversy between two competing camps and an emerging compromise

Whoever reads these days the economic section of the news, will necessarily get confronted with articles reporting about a “Bitcoin/ICO bubble”, will encounter the comparison of Bitcoin with the “tulip mania”¹³ or will be reminded by high business executives or politicians of cryptocurrencies’ abuse for illegal purposes, such as the purchase of drugs or weapons.

By reading such headlines, one easily gets two kinds of impressions: (1) that blockchain-technology was only about Bitcoin and (2) that there is a sharp divide between the people that are using/promoting cryptocurrencies and everyone else, i.e. the incumbent business actors, politicians and Joe Public. The divide is particular salient between the cryptocurrency champions and the representatives of the financial services industry. However, it is necessary to look behind the headlines and public statements in order to understand the ongoing economic reconfiguration and the struggles of power that it entails.

One thing is for sure: Bitcoin and other cryptocurrencies have entered the scene with a quite provocative and bold attitude. They’ve blamed the financial system for the crisis of 2008 (and the current economic instability) and have accused them of running a parasitic business-model that allows them to earn big money without much effort. Their threat to “cut out the middlemen” was credible. Some commentators went as far as to suggest that “Bitcoin is going to do to banks what email did to the post office and Amazon did to retail.”

¹² Fintech stands for “financial technology”.

¹³ The “tulip mania” is considered to be the first recorded speculative bubble that took place between 1636 and 1637 in the Netherlands. At that time, the object of speculation were tulip bulbs; nowadays, the term “tulip mania” is now often used metaphorically to refer to any large economic bubble when asset prices deviate from intrinsic values (French 2006, 3).

(Kelly 2017) The banks and with them other incumbent actors were forced to react and they did so quite aggressively, preferably associating Bitcoin with the use of drugs, the illegal purchase of weapons and the funding of terrorism. This provoked a raucous controversy in the course of which both sides contested the legitimacy of the other and justified their own right to exist. Interestingly, we also observe that there's an emerging compromise between the competing camps, allowing them to co-exist in a more or less peaceful way.

We understand that what is perceived by the broader public as a controversy, is beneath the surface a dispute over legitimacy. Legitimacy is a decisive attribute when it comes to the fate of an organization or a technology. Actors try to win over the support of a public audience - and of the regulatory authorities - to gain legitimacy. They will therefore engage with discourses and objects to justify their respective positions. Understanding the lines of conflict between the two competing camps requires that we take a step back and examine their public statements through the lenses of an analytical grid. In what follows, we're going to inspire ourselves by Luc Boltanski and Laurent Thévenot's *Economies of Worth*-framework (Boltanski and Thévenot 2006).

Without wanting to go into detail, we can, according to Boltanski and Thévenot, situate the actor's discourses in different "worlds". A "world" can be thought of as a moral and ethical reference framework that approves certain values and behaviors, while rejecting others. The goal of this discursive framework is to understand, along which fault lines conflicts exist and how they possibly can be channeled into a compromise. We will see that the cryptocurrency champions and the representatives of the financial services industry disagree with each other in almost every single aspect, except for the disruptive potential of blockchain-technology.

To perform our analysis, we have chosen to use quotations of actors, which can be described as "typical" and often-heard in the field. The chosen quotations do not always stem from Swiss actors. However, we believe that we can neglect the national context in which the quotations are expressed, since the present controversy has a tendency to repeat itself across space. What may alter is the intensity of the public debate, which is often an expression of the given political culture, but the given justifications don't alter.

But let's dive into the analysis. A first world in Boltanski and Thévenot's framework is the **World of Fame**. In this world, actors strive to be *visible* and *get attention*. *Reputation* is very important.

On one hand, Bitcoin and cryptocurrencies receive undeniably a lot of *media-attention* for their scandals or for allegedly creating a bubble. Journalists and other public persons are regularly predicting Bitcoin's demise¹⁴, however, Bitcoin seems to reach a broader audience with every crisis. On the other hand, cryptocurrencies seem to get the "wrong" kind of attention and this hurts its legitimacy. For example, Niklas Nikolajsen, founder and CEO of *Bitcoin Suisse* reported that his company had struggled "for years" to open Swiss bank accounts. As the industrial journal *finews.com* reports,

¹⁴ The website www.bitcoinobituaries.com collects articles predicting the demise of Bitcoin. By November 2017, Bitcoin has "died" 183 times.

“Traditional finance firms fear [that] digital currency upstarts¹⁵ aren't applying the same anti-money laundering rules and so-called «know your customer» guidelines that banks are subject to in order to avoid ill-gotten funds. The banks are also wary of potential fallout from a scandal like that now engulfing Tezos, where a bitter feud has erupted around its Swiss foundation.” (Bart 2017)

Furthermore, Nikolajsen explained that “his firm found it «very easy» to establish banking relationships in Switzerland when the firm was founded early in 2013. But those relationships crumbled one by one shortly afterwards, amid several scandals including the collapse of bitcoin exchange Mt. Gox and a U.S. raid on black marketplace Silk Road.”

Nikolajsen's story suggests that it's *risky* for certain well-established firms *being associated* with Bitcoin or other cryptocurrencies: such an association *may reflect back* on them and harm its *reputation* with the broader public. Due to its complex technical nature, many people think of cryptocurrencies as something *shady* and *opaque*, that is potentially a *fraud* (Louis, Levitt, and Son 2017) and full of *illegal activities*. Companies therefore try to avoid using the *tainted* word “Bitcoin”. A tellingly example occurred at a conference organized by the startup *Ripple*, when one of the panelists¹⁶ expressed his displeasure with the host, who mentioned Bitcoin:

I am struck as you mention Bitcoin, that we have to mention it. I made some remarks to the finance group within the bank a little while ago and I deliberately avoided using the word “Bitcoin” because it has such a tendency to skew the conversation. It immediately gets people off-track. Instead of focusing on a 9-year proof-of-concept, everybody focuses on the theft from an exchange [...] or the shady use perhaps to which it's being put. And this 9-year validation of that underlying technology is often skipped, so I'm not sure we should mention Bitcoin (Ripple 2017, Min 34).

A second world is the **civic world**. In this world, *the wellbeing of the collective* is in the focal point of the actor's reasonings. Whoever strives to be respected in this world has to prove that he or she is ready to *struggle for a cause* and show *solidarity* with the community he's *representing*.

Cryptocurrencies don't know any borders and therefore its natural frame of reference is the *global community*, while politics and legislation often address a *national community*. In his book *The Internet of Money* Andreas Antonopoulos portrays Bitcoin (and cryptocurrencies in general) as a means of empowerment for the poor:

There are 2 billion people who have no bank accounts at all. There are another 4 billion people who have very limited access to banking. [...] Bitcoin isn't about the 1 billion [who are having bank accounts]. Bitcoin is all about the other 6 1/2. The people who are currently cut off from international banking. [...] Bitcoin is not a currency. Bitcoin is the internet of money. As a technology, it can bring economic inclusion and empowerment to billions of people in the world (Antonopoulos 2016).

Antonopoulos often speaks of “banking the unbanked” when he refers to Bitcoin's capacity to economically include big parts of the world's population. From this point of view, champions of cryptocurrencies show their *solidarity* with the poor of the world and their wish to include them economically, expresses a concern for the *common interest*.

Sergio Rossi, a professor of Macroeconomics and Monetary Economics at the University of Fribourg prefers thinking the *collective* on a smaller scale. While Antonopoulos wants to

¹⁵ The term ‘upstart’ in a business context is a jargon used to describe entrepreneurial ventures that are started and run without significant external funding. In comparison, startups are entrepreneurial ventures that are funded early in their life cycle by venture capitalists, angle investors, etc.

¹⁶ Paul Snaith, director of treasury asset and liability operations at The World Bank.

solve problems on a global scale, Rossi points out to problems that may arise on a national scale because of cryptocurrencies. Referring to the cities of Zug and Chiasso that are accepting Bitcoin for government services, he writes:

The state must stay out of Bitcoin [and must not accept it as a means of payment]. [...] In contrast to its citizens, the state cannot allow itself to take risks in the "grand casino" of global finance. To be clear, tax revenues have to be protected from the high volatility in Bitcoin-markets because otherwise the public sector would expose itself to unpredictable risks that are weighing on the citizens. [In the case of a crush of Bitcoin's value] the state would be prompted to cut public spending or increase the tax burden [of its citizens] (Rossi 2017).

Rossi is critical of cryptocurrencies because he fears that they potentially harm the *collective*, if the state would accept it as a means of payment. Antonopoulos on the other hand thinks that cryptocurrencies are on the contrary beneficial to the *collective* by allowing many people to economically *participate* in the world community.

A third world, is the **market world**. Arguments invoking this world usually make reference to *competition* between *market participants* and the preconditions that allow competition. The *unhampered market* is of big importance, because it brings together *buyers* and *sellers*, which in turn fosters competition. Making *profit* is important, but it should be achieved in a way that respects the "laws of the market".

Tidjane Thiam, CEO of *Credit Suisse Group*, slams cryptocurrencies by saying that "From what we can identify, the only reason today to buy or sell bitcoin is to make money, which is the very definition of speculation and the very definition of a bubble." He added that in the history of finance, such speculation has "rarely led to a happy end." (Foerster 2017) Thiam is by far not the only one expressing these concerns. In the market world, a speculative bubble is the product of missing *emotional distance/detachment* that provokes the market participants to pay an *unreasonable* high price for a given good. Markets and their participants are supposed to act in a *reasonable* and *detached* way – for Thiam and others, cryptocurrency traders are not.

Champions of Bitcoin and other cryptocurrencies point the finger into the other way. They say that banks are not in the position to judge, given their own bad record. David Hay, a youtuber with over 44'000 followers criticizes that "The 2008 financial crisis was almost entirely caused by [the bank's] sloppy lending practices, by loose and reckless investments and just an overall mentality that things can keep going on forever." (Hay 2017) Hay directs his indignation towards the fact that banks had to be bailed out with tax money. By doing so, the state intervened into the market logic and *obstructed competition*. If the banks weren't "too big to fail", they would have gone *bankrupt*. Left alone, the market rewards *good management* and punishes *mismanagement*. Whoever makes *losses* or who depends on *government intervention* and *market distortion*, is disregarded in the market world.

Bitcoin and other cryptocurrencies are very attractive to libertarians. Libertarians¹⁷ defend the *free market* and share a strong *skepticism of authority* and *state power*; the role of the state would be reduced to that of a *night-watchman*. In a libertarian utopia, Bitcoin would curb

the ability for a government to fund itself through the manipulation of money. You can't obfuscate bitcoin supply -- inflation is transparent. You can't "quantitatively ease" bitcoins. Governments -- without a very aggressive and potentially impractical bitcoin confiscation

¹⁷ It has to be mentioned that Libertarianism knows many different intellectual sub-currents, which differ in their way how they conceive of the state, the market, private property, personal freedom, and so on.

scheme -- will struggle to use your bitcoins to bail themselves out. Deficit spending becomes impossible -- you can't spend bitcoins you don't have. Central and private banks can't create bitcoins when it suits them, and governments can't print bitcoins [...]. It all means you don't have to pay the price for the mistakes of governments and banks. They do. They will have to act more prudently or go under (Frisby 2014, paras 7–8).

Bitcoin is to cryptocurrency champions a priceless innovation, because it allows the *market* to *operate freely* in its “natural state” *without external intervention*. Bitcoin thus respects the market’s authority; the financial services industry and the state don’t. On the other hand, representatives of the financial services industry refuse to take cryptocurrencies seriously, because their current value seems to be driven by speculation and exuberance and not by rationality.

So far, we have observed in every “world” only conflicting views between the two camps. However, they find a common ground in the **industrial world**. In order to be “big” in this world, one has to *innovate*. *Efficiency, reliability* and *predictability* are properties that are being appreciated by actors making reference to this world. Who wants to be held in high regard in this world has to be *dynamic* and strive *progress*. Cryptocurrency champions and representatives of the financial services industry do agree with each other that *the blockchain technology is a disruptive innovation*, but on the other hand, they don’t agree on the relevancy and desirability of cryptocurrencies.

See for example Credit Suisse. They’ve published on their website an article titled “Forget Bitcoin, but Remember Blockchain?” (Kindergan 2017b), in which it calls bitcoin a hype, thus challenging its *predictability* and *reliability*. Furthermore, in a section called “The Complex and Expensive World of Bitcoin” the article states that Bitcoin transactions are “relatively slow” and criticizes that the mining-process¹⁸ “consume[s] fantastic amounts of electricity”. In other words, they think that Bitcoin is *inefficient*, which is frowned upon in the industrial world. As we have already stated further above, UBS estimates that cryptocurrencies “will *never be used* for a majority of transactions” and also “*will never be used as a store of value*” (UBS 2017, 3) because of its high volatility or in other words: it is *not reliable*.

However, while UBS is doubtful of cryptocurrencies it states that “the underlying technology, blockchain, is likely to have a significant impact in industries ranging from finance to manufacturing, healthcare, and utilities. [...] Blockchain could lead to significant *disruptive technologies* in the coming decade.” (UBS 2017, 1) It is right there where the compromise between the two competing camps is. The financial services industry does agree with the cryptocurrency champions that blockchain is a disruptive *innovation* with huge potential that allows to make many processes more *efficient* and more *secure*. This is what the head of software investment banking at Credit Suisse thinks about the blockchain-technology:

[Blockchain] is a very important technology for us at Credit Suisse. We have a lot of innovation going on across the bank, in all divisions, in all regions. I think it really has the potential to streamline all of our operations. [...] Bitcoin is the first killer-app on the blockchain; e-mail was the first killer-app on the internet, if you look what is going to happen in the next 20 years, I think there is a lot of innovation here [...] I think sky’s the limit, we’re in a very early stage here. [...] We need to be innovative, otherwise we’re out of business and [blockchain] is a core-pillar of our innovation portfolio (CNBC 2017).

¹⁸ “Mining” refers to a complex computational process by which Bitcoins are “created”.

4.1.2. Making sense of the emerging compromise

The emerging compromise in the industrial world is a particular one: while the two camps don't agree on the relevancy and desirability of cryptocurrencies, they agree on the importance of blockchain-technology. In their public statements, financial institutions often take an overall attitude that could be described as "blockchain, not Bitcoin". But how exactly can we understand this attitude? What's the rationale behind this discourse? We have to admit that we cannot give a concluding answer to that question¹⁹. However, we can interpret the different jigsaw pieces and deduce a number of hypothesis from it.

A first hypothesis posits that financial institutions are using the blockchain as a *defensive weapon*. In the past, they have tried ignoring cryptocurrencies or predicting its demise. However, that did not happen and it has become more and more evident, that cryptocurrencies pose a threat to them and the whole established system of fiat-money. Rupert Hackett, general manager of Bitcoin.com.au, suggests that "hying the blockchain is perhaps a calculated move to deflate the force in Bitcoin so that it is no longer disruptive enough to put major players in the financial sector out of business." (Rupert Hackett 2015) Such a strategy could be described as "if you can't beat them, copy them" (or alternatively "if you can't beat them, buy them", in the case where an established firm buys up a startup). Citing Andreas Antonopoulos, Hackett further argued that "they want to adopt the efficiencies without the decentralization, the low cost but with control, and the global nature but with censorship. [...] You can't have the revolutionary nature of Bitcoin while stripping it of all the things that make it innovative and exciting." In such a view, the financial institution's endorsement of blockchain-technology could be translated as "we want the revolution, but we want to keep it under control".

According to a second interpretation, *there's a trade-off between fighting cryptocurrencies and developing own blockchain-solutions*. We have found evidence that the past bad-mouthing of Bitcoin & Co. has backfired for the financial services industry. In a report called "Blockchain reaction. Tech companies plan for critical mass", the consultant company EY laments that "Because a few people misused bitcoin, many see blockchain as bad instead of thinking it's good for the economy because it reduces inefficiencies posed by intermediaries." (EY 2016, 13) They conclude that blockchain must overcome its association with Bitcoin in order to achieve wider adaption (EY 2016, 14). The financial services industry and large technology companies such as IBM have partnered up and have started developing their own blockchain-solutions. The development of such blockchain-solutions offers huge business opportunities. It is therefore in their own interest, that blockchain stops being associated with (the dark sides of) Bitcoin.

A third point of view suggests that *financial institutions are much more open towards cryptocurrencies and crypto-startups, than what their public statements might suggest*. We should therefore not abstract from an executive's personal opinion²⁰ on what's happening inside the organization. Big organizations can say one thing in public and do the opposite instead. Andreas Antonopoulos suggests that we should take the bank's public statements with a grain of salt:

JPMorgan is not only engaging with Ethereum but also with other technologies, such as Hyperledger and even trading Bitcoin for institutional clients. So, I think it's fair to say that an executive's personal opinion, even if promoted as part of the company policy or expressed in a way that makes it sound like a company policy, doesn't necessarily mean that the whole company is following that opinion and arguably that would be a good thing.

¹⁹ We didn't get the opportunity to talk to officials of the financial services industry on that matter.

²⁰ Jamie Dimon, the CEO of JPMorgan Chase, said on a public conference that Bitcoin was a "fraud".

The boss doesn't know everything and shouldn't know everything. And I think Jamie Dimon has clearly said that he is not an expert on these things and he clearly employs many who are experts on these things and are perhaps taking a different position. So, I don't see any particular conflict of cognitive dissonance between the two, that Jamie Dimon says one thing on TV and [JP Morgan] traders trading [Bitcoin] [...] I think it would be strange if the entire organization followed in lock step the opinion of its leader (University of Nicosia 2017, Min. 8).

In Switzerland for example, some smaller financial institutions²¹ have started offering trading-services in cryptocurrencies and we can expect others following their lead, since there is a growing fascination amongst the public for cryptocurrencies²².

A final interpretation suggests that *blockchain-technology can help solving existing problems within the financial services industry, while Bitcoin can't*²³. Cryptocurrencies are an investment, but there is no consensus upon which type of investment it represents: is it pure speculation, is it something similar to gold, since its supply is “naturally” capped, or is it effectively a new decentralized currency? As stated in the preceding hypothesis, some financial institutions have started developing products in order to benefit from the growing market capitalization of cryptocurrencies. But in general, financial services institutions are more interested in the fundamental innovation that represents blockchain-technology. Bitcoin and cryptocurrencies present only one of the manifold possible applications of the latter. Blockchain as a distributed ledger technology can be used wherever banks are currently using centralized databases, e.g. the clearing of transactions; in addition, it allows concepts such as smart contracts. Hence blockchain could be interesting from trading stocks, issuing mortgages to compliance.

In conclusion, “blockchain, not Bitcoin” leaves a lot of room for interpretation. In the same time, this vagueness allows a more or less peaceful co-existence between cryptocurrency champions and financial services institutions. It allows even for punctual cooperation and most of all, it leaves the door open for future strategic adjustments. In the end, no-one wants to slam the door on possible future business opportunities.

²¹ Namely *Swissquote* and *Falcon Private Bank*.

²² A cryptocurrency-conference at the University of Zurich (7 Novembre 2017) had to be broadcasted to another auditorium since the first was filled to capacity.

²³ Private email communication with Nicolas Zahn (21.11.2017). Mr. Zahn has worked in the financial services industry, but wasn't involved in any blockchain-related projects.

4.2. The Swiss institutional environment as a competitive advantage

Switzerland is home to four of the ten largest Initial Coin Offerings (ICOs)²⁴ that have taken place so far (Diemers 2017, 2). Besides that, other well-known players in the field, like the Ethereum foundation, Xapo or Lisk are hosted in Zug/Switzerland. This begs the question why Switzerland is so attractive to blockchain-startups.

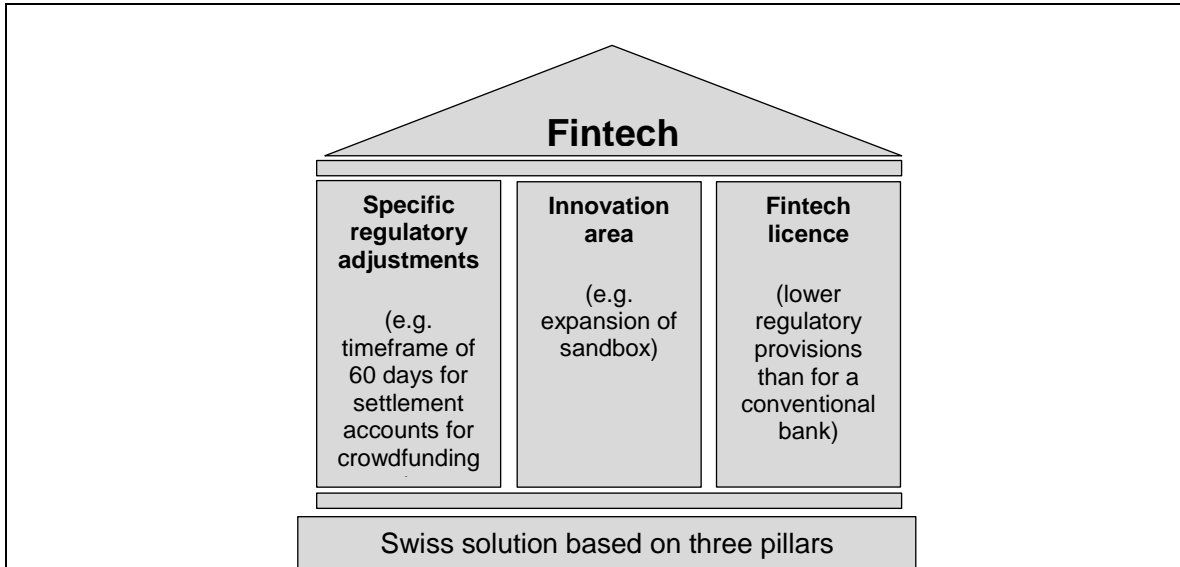
Paolo Barrai, an Italian entrepreneur active in Switzerland, explains the country's attraction with the friendly attitude of the Swiss Financial Market Supervisory Authority (*FINMA*) towards cryptocurrencies. It would do its job and control, but in the same time it would leave room for developments (Lieberherr 2017, Min. 16:30). Lars Schlichting, an expert in banking law highlights that many foreign companies are attracted to Switzerland, because of the legal uncertainty in their own country. In Italy for example, due to a lack of explicit legislation, investors don't know how cryptocurrencies are treated from a fiscal point of view; this in turn motivates them to go to Switzerland (Lieberherr 2017, Min. 20:30).

Finally, Switzerland has an approach to promote blockchain-technology that differs from other players in the game. Singapore, for example, invested more than \$150 million in the promotion of its fintech-industry in order to attract startups (Yap 2015). The state of the Asian country takes an active role and follows a top-down promotion-approach. Switzerland's approach can be described as "help yourself" or bottom-up – local actors are founding themselves associations and try to bring different parties together. By doing so, they hope to create a durable ecosystem (Pestalozzi 2017, Min. 8:00). The state only sets a minimal regulatory framework that leaves as much entrepreneurial freedom as possible.

The Swiss regulatory framework is said to be particularly attracting towards Blockchain- and fintech-startups (Lieberherr 2017, Min. 23:00). Actors of the blockchain-ecosystem say that FINMA has understood early that Blockchain-technology was more of an opportunity than a risk and therefore they've constructed an explicit legal framework which allows for "experimenting" with this new technology. However, and this is important, if a company leaves this legal framework and tries to act in a fraudulent way, FINMA intervenes and shuts down the firm (*inside-it.ch* 2017). The basic idea is to pragmatically allow experiments but also to set red lines and boundaries – firms prefer having a clear-cut set of legal rules to legal ambiguity and uncertainty (Lieberherr 2017, Min. 23:30).

On 1 August 2017, the Swiss federal Council adopted an amendment of the Banking Ordinance (BankO). The revision should ensure that barriers to market entry for fintech firms are reduced and that the competitiveness of the Swiss financial centre is enhanced. The amendment to the Banking Ordinance aims to regulate fintech firms which provide services outside normal banking business according to their risk potential. The new regulatory framework can be translated as the federal Council's volition to create different liberal spheres of concurrence that lead to concurrence and innovation. It gives all the actors equal opportunities and doesn't prefer one over the other.

²⁴ "ICO" (also token launch or token generation) is a term describing a limited period in which a company sells a predefined number of digital tokens (crypto coins) to the public, typically in exchange for major crypto-currencies (as of today, mostly Bitcoins and Ether). ICOs are still largely unregulated to date, and it often remains unclear whether a token represents a security, utility token or digital currency, and how any of these can be enforced. Prospectively, ICOs can be established as an alternative to classic debt/ capital-funding as performed today by Venture Capital/ Private Equity firms and banks. Source: (Diemers 2017, 1)



The Swiss fintech model includes the following pillars:

1. The exception provided for in the Banking Ordinance for the acceptance of funds for settlement purposes apply explicitly for settlements within 60 days.
2. An innovation area was created: the acceptance of public funds up to CHF 1 million is no longer classified as operating on a commercial basis in the future and is exempt from authorisation. This change should allow firms to try out a business model before they are finally required to obtain authorisation in the case of public funds of over CHF 1 million.
3. Fintech licence (not yet enacted): a new authorisation category is to be created in the Banking Act for companies that accept public funds of up to a maximum of CHF 100 million but do not invest funds or pay interest on funds. For the new authorisation category, there should be simplified authorisation and operating requirements relative to the current banking licence in the areas of accounting, auditing and deposit protection.

Box 1: The Swiss fintech model
Source: Swiss Federal Council (2017)

4.3. Territories of the Swiss blockchain-industry

We have counted a total of 85 blockchain-related companies distributed across Switzerland. Most of the companies are situated in the city of Zug (37) or in the Wider Zurich Area (26). Other regions of a certain importance are Chiasso (8), and the Lake Geneva Area (7). Furthermore, the German speaking part over-proportionally dominates (69) the French (9) and the Italian (8) speaking parts.

Canton	Nb. of Startups or research facilities
German-speaking cantons	69
Basel City	1
Bern	1
Lucerne	2
Nidwalden	1
Schwyz	1
Zug	37
Zurich	26
French-speaking cantons	9
Geneva	2
Neuchâtel	1
Valais	1
Vaud	5
Italian-speaking cantons	8
Ticino	8

Table 3: Territorial distribution of blockchain-startups or blockchain-related firms

Source: own calculation

As Table 3 hints, there is a strong concentration of blockchain-startups or blockchain-related firms in certain regions. On one hand, startups and firms mutually benefit from a territorial concentration, insofar as it forms an *innovative milieu* (Crevoisier 2004) allowing the exchange of knowledge and other resources already present in the territory and giving it thus a competitive advantage. On the other hand, the concentration in certain regions is also a product of a successful location policy and promotion.

The Swiss federal structure plays an important part in this by allowing the cantons (and communes) to set independently their tax rate and other regulation, insofar as it's not explicitly regulated on the federal level. This sets Switzerland notably apart from more centralized countries like France for example: if Paris makes a crypto-unfriendly decision, it applies to the whole country.

As Switzerland is composed of 26 cantons, each comprising of different communes, we can observe a significant variation of tax rates (Crypto Valley 2017a); low taxes are a major component of a region's attraction. However, low tax rates are not a sufficient condition. In the case of Zurich, taxes are not extraordinarily low, but the city benefits from its banking location, its international reputation and its overall high quality of life.

Another reason for the concentration of startups around the city of Zug is the small size of the canton. Luzius Meisser, a Swiss economist and founder of Bitcoin Association Switzerland, highlights that a small canton's authorities are easier to approach and tax authorities answer more quickly and openly while it takes usually more time in bigger cantons and the answers have tendency to be more reserved (Vakaridis 2017).

A final factor of particular importance is regional location promotion. The regions of Zug, Chiasso and Geneva each have created a brand for their region that aims to attract startups.

The canton of Zug was the first of them to create an organism that aims to attract crypto-startups. The *Crypto Valley Association* exists informally already since 2013 and has been

given a legal body in January 2017. The goal of the association is “to support the introduction, development and dissemination of cryptographic technologies, blockchain and other distributed ledger technologies by organizing events of any kind, supporting start-ups and other companies, initiating, financing and supporting of (research) projects as well as networking nationally and internationally.” (P. Meisser 2017) Zug (like Chiasso) furthermore boasts itself of hosting a “real life field tests”: it is possible to pay for government services with Bitcoin for a value of up to 200 Swiss francs (P. Meisser 2017). A quick look into Zug’s regional promotion prospectus (Crypto Valley 2017a, 8) underlines its international ambitions: the “Crypto Valley” compares itself with countries such as Singapore, the UK and the US.

Next to Zug and Zurich, there is a third regional actor that is trying to position itself on the landmark: Chiasso in the canton of Ticino. In October 2017, the city branded itself as *CryptoPolis* and is seeking to attract Blockchain-startups and Fintech companies from the nearby Italian metropolis region of Milano (6 million habitants) – with some notable success. According to the mayor of the city, Bruno Arrigoni, the region prides itself to be host of 8 companies (Lieberherr 2017, Min. 12:00). Chiasso has been an important local banking centre for the last 40 years. However, the banking location collapsed after the financial crisis of 2008 and therefore the region has to re-invent itself. According to the entrepreneur Paolo Barrai, the goal is to develop in the region between Chiasso and Milano an ecosystem of Blockchain, Bitcoin and Cryptocurrency-companies (Lieberherr 2017, Min. 14:30). The short distance to the international banking location Milano is seen as an additional strategic trump.

Another important Swiss banking location is Geneva. The city now hosts a transnational platform (*Global Blockchain Business Council*) that aims to benefit of Geneva International for collaborating with international organizations such as the World Economic Forum, the World Trade Organization (WTO) or the World Health Organization (WHO) (Nikolic 2017).

Switzerland is traditionally one of the world’s leading financial centers. However, the Swiss financial services industry is in the defense today. For decades Switzerland was the top destination for wealthy customers seeking a safe haven to park their assets. One particular reason for Switzerland’s attraction was its banking secrecy law. The fact that this right was abused by many, has put Switzerland under severe international pressure leading to the abolition of the said law (Gasteiger 2016). The Swiss banks had therefore to reinvent a part of their business model and open it up to new and innovative solutions. Fintech, and in particular blockchain-technology, appear therefore somewhat ironically as a big opportunity. The successful integration of blockchain-technology into their business model, could provide them a secure future and guarantee their economic survival. The traditional banking locations obviously have a big interest in the industry’s survival, since many jobs depend on it. This is also the key in understanding the different region’s efforts in promoting their territory and establish themselves as “crypto-regions”.

5. Conclusion

This paper has provided a case study of technology-induced reconfigurations in the Swiss financial services industry. We have applied a four lenses framework that allowed us to study the ongoing development from different points of view: the technology’s properties and its disruptive potential; the actors and their discourses; the regulatory framework; and the implied territories. We have found that blockchain-technology could in principle lead to significant disintermediation: by solving the “trust-problem” it threatens to render “middlemen” obsolete. Secondly, we have observed that cryptocurrency champions and representatives of the financial services industry clash with their respective views on the

relevancy and desirability of cryptocurrencies. However, they agree with each other on the disruptive potential of blockchain-technology. This compromise allows them to pursue blockchain-related business activities and even to collaborate punctually. Apart from this, we have observed that the Swiss Confederation has enacted an institutional amendment, that is supposed to facilitate the market-entry for fintech-startups (who often rely on the usage of blockchain-technology). By doing so, the government has opened up the door for new players and has set general conditions so that concurrence can lead to innovation (*creative destruction*). The new regulation translates the government's intention to give equal opportunities to all implied parties. Finally, we have witnessed the emergence of four different "blockchain-clusters" across Switzerland: two in the German-speaking part, one in the French- and one in the Italian-speaking part. The regions in which these clusters are situated do coincide with traditional banking centers. The latter have come under pressure in recent times and hope to strengthen their competitiveness and international visibility by attracting blockchain-related activities. The sum of gained evidences suggests that blockchain-technology, at present, has stimulated the Swiss financial services industry, rather than disintermediating it. There are indeed some raucous controversies between representatives of the latter and cryptocurrency champions; however, their relationship is more constructive and the divide between them is less sharp, than what some of their public statements might suggest. In the end, no-one wants to slam the door on possible future business opportunities.

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