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## SWISS CURRENCY SYSTEMS:

## ATLAS, COMPENDIUM AND CHRONICLE OF LEGAL ASPECTS

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### ABSTRACT

Switzerland has not only the oldest and biggest modern complementary currency in the world, the WIR created in 1934, among 40'000 organizations with a velocity of 1.3 in 2017, representing 0.17% of the Gross Domestic Product at current prices and 0.08% of the global money supply, but also the second cross-border complementary currency in the world and the first local currency using blockchain technology in Switzerland, the Léman, created in September 2015 in a Swiss-French conurbation, with 160'000 units in circulation among a network of 550 organizations and 4'000 users in May 2018. Moreover, with about 49 community currencies and 15 complementary currencies in January 2018 and a cryptocurrency cluster called Crypto Valley funded in January 2017, Switzerland counts among reference case studies in the virtual, community and complementary currency systems domain. Nevertheless, some questions remain: (1) How is the partition of these currencies in term of geographical region, system type and digital software? (2) What the recent Léman case study taught us in term of strategic implementation? (3) Could a Swiss Currency Confederation facilitate their legal conformity? To contribute to these research questions, a literature review, a data analysis, and a research survey will allow us not only to overview the Swiss and the Greater Geneva currency systems, but also evaluate their legal framework evolution.

### KEYWORDS

Switzerland; Swiss; cross-border; WIR; Léman; NetzBon; cryptocurrency

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## 1. INTRODUCTION

Currency is universal, links among people at the mercy of debt cancellation by using it, and archaic, not primitive but inherent to every society (Servet, 2001). Community and complementary currency is an inherent monetary and social innovation which aims to improve sustainable impacts. Mutual credit, such as Local Exchange Trading System or time-based currency, and issued currency, such as pledge currency and loyalty reward, are both fiat currency systems based on fiduciary duties and rights among stakeholders. Beyond microcredit and digital blockchain cryptocurrency, which became nowadays a worldwide issue, some successful social technologies aim to validate and improve sustainable impacts fulfilment.

As a background, Switzerland is known abroad, not only for its Swiss made quality with cheese, chocolate, watches, and private banking, but also for its historical stable economic, monetary, and direct democracy voting systems throughout seven centuries. After an analysis overview of currency systems at the Swiss national and cantonal level, we will study the challenges of a Swiss-French cross-border currency in the Greater Geneva, and finally present the relevant federal currency legislation and the recent initiative which aims to gather, study, disseminate, support these systems. Our objective through this national and local study is to not only reveal some reference case studies but also analyse their repartition and legal framework. Our hypothesis is that Swiss currency systems, with their multilingual and multicultural quantitative and qualitative reference case studies among crypto and complementary currencies, would gain in gathering their forces. Our research questions are: (1) How is the repartition of these currencies in term of geographical region, system type and digital software? (2) What the recent Léman case study taught us in term of strategic implementation? (3) Could a Swiss Currency Confederation facilitate their legal conformity? Our research methodology is based on a literature review, a data analysis, and a survey of 12 questions sent, between December 2016 and March 2017, to potential contacts of 58 Swiss currency systems and 7 Greater Geneva currency systems in English, German, French, and Italian.

## 2. SWISS CURRENCY SYSTEMS OVERVIEW: AN ATLAS AND A COMPENDIUM

For centuries, Switzerland has always been in the top ten countries in the world in terms of democracy, Gross Domestic Product per capita, inequality-adjusted Human Development Index, international investment position, gold reserve, gold reserve per capita, and reserve currency with its Swiss franc (Place et al., 2017). The national currency, or conventional money, named Swiss francs with CHF as a currency code and Fr. or SFr. as a currency sign abbreviation, is the legal tender not only in both Switzerland and Liechtenstein, but also in the Italian exclave of Campione d'Italia, whereas the complementary currency entitled WIR Franc with CHW as a currency code is only used in Switzerland. The Swiss National Bank issues banknotes and the federal mint Swissmint issues coins. In December 2017, from the 3'142 million Swiss francs of coins and 81'639 million Swiss francs of banknotes in circulation, 60.66% were denominations of 1'000 CHF, 17.11% of 100 CHF, 14.99% of 200 CHF, 3.92% of 50 CHF, 2.23% of 20 CHF, 0.97% 10 CHF, and 0.12% of 500 CHF (Swiss National Bank, 2017). Indeed, in comparison with 79% in the euro area and with an average of 41 CHF and 1.6 payments a day mostly below 20 CHF, 70% of Swiss households above 15 years old process payments with cash, mostly below 34 and above 55 years old, with an average of 133 CHF in their wallets with mostly 20 CHF and 10 CHF denominations: 35% of non-recurring payments in cash are over 1'000 CHF with mostly 200 CHF and 1'000 CHF denominations, but cash accounts for only 45% of expenditure value, because 22% of payments are made with debit card for transactions mostly above 50 CHF, and 5% with credit card for transactions mostly above 200 CHF. Furthermore, in comparison with 24% in the euro area, 37% of Swiss households keep cash as a store of value, less than 1'000 CHF mostly in 100 CHF denominations, for immediacy of availability more than funds for a crisis or persistent low interest rate (Swiss National Bank, 2018). With its three official languages, such as German spoken by 63.5% of the population, French spoken by 22.5%, and Italian spoken by 8.1%, and its fourth national language, Romansh spoken by 0.5% of the population in 2013, this is the only currency which use four languages on its banknotes. However, Latin is used for language-neutral inscriptions on the coins with Helvetia as the national personification just like the Latinate CH stands for Confoederatio Helvetica and means Swiss Confederation even if it's a federal republic of 26 cantons with Bern as a capital. Swiss banknotes symbols are mostly inspired from the Swiss folklore, the Alpine culture and Swiss people (Federal Statistical Office, 2016).

A currency is the implementation of the concept of Money, which includes any transferable units of value that can facilitate transactional forms of collaboration, and thus complementary currencies are currencies aside from conventional money, also known as national currencies issued by central banks for legal tender coins and banknotes and by commercial banks for electronic and cheque scriptural money (Bindewald, 2018). Regarding monetary innovation networks in Switzerland, or community and complementary currency systems at the Swiss national and cantonal level, which are not linked to any nationalist separatist or autonomist secessionist movements or any self-containment or autarky aspirations, there are 15 issued currency systems and 49 mutual credit systems, for a total of 64 currency systems (Martignoni, 2012; ZART, 2013; SEL-Suisse, 2016; Matzat, 2016; EnLien, 2018):

6 regional currencies, meaning issued currencies at a regional level: 3 semi-convertible store currencies like the loyalty voucher Migros Cumulus and Supercard Coop or the tourism voucher Reka cheque. Reka cheque has been founded in 1939 in Bern by the Swiss Travel Fund cooperative, with a turnover of 586 million of Swiss francs equivalent among a network of 8'500 organizations and 2.4 million users in 2012 and based on tax incentive and 3% redemption commission with initial price reduction of 1.5% for employees which is further reduced by employers from 3% to 20% finally paid by the beneficiary business. Nevertheless, we did not consider the regional store currencies such as the Pro Innerstadt Basel Geschenk-bon tourism voucher of Basel and the Swiss Lunch-Check cooperative founded in 1961 in Zurich with a turnover of 81.6 million of Swiss francs equivalent among a network of 4'500 businesses and restaurants with a 1.5% redemption commission paid by the 4'000 members in 2012 (Martignoni, 2012). 2 convertible internet currencies like cryptocurrencies Bitcoin and Ethereum among the non-exhaustive list of blockchain technology innovations and cryptocurrency systems present in its innovation and skill centre of excellence and expertise at the leading edge of technology: the Crypto Valley in the canton of Zug. 1 convertible business-to-business currency which is the WIR as the biggest and oldest complementary currency in the world. Indeed, in 1934, the WIR, that can be defined as a private account unit based on credit loans and not to be confused with any barter exchange services, barter trade systems or cooperative mutual credits, was created by Werner ZIMMERMANN and Paul ENZ with 16 members.

Henceforth, in December 2010, WIR Bank had a dynamic turnover of 1'613 million Swiss francs, equivalent to 0.26% of the 608'830 million Swiss francs nominal Gross Domestic Product at current prices, in a network of about 60'703 small and medium-sized enterprises, with a static balance of client credits of 624 million Swiss francs, equivalent to 0.08% of the 754'354 million Swiss francs of global money supply or monetary aggregate M3, and a velocity of circulation of 2.584, which is the turnover divided by the balance (Kalinowski, 2011; De La Rosa et al., 2015; Stodder et al., 2016; Swiss National Bank, 2017). In 2012, WIR Bank had a turnover of 1'600 million of Swiss francs in a network of 56'000 organizations (Martignoni, 2012). In March 2017, according to our survey, WIR Bank had a balance of credits of 800 million Swiss francs in a network of 60'000 organizations, 45'000 small and medium enterprises and 15'000 private freelancers (Place et al., 2017). According to the yearly report of December 2017, WIR Bank had a dynamic turnover of 1'120 million Swiss francs, equivalent to 0.17% of the 668'149 million Swiss francs nominal Gross Domestic Product at current prices, in a network of about 40'000 organizations from which 10'000 private freelancers, with a static balance of client credits of 846 million Swiss francs, equivalent to 0.08% of the 1'030'483 million Swiss francs of global money supply or monetary aggregate M3, and a velocity of circulation of 1.323, which is the turnover divided by the balance (WIR Bank, 2018; Swiss National Bank, 2017). The WIR offers additional sources of credit and liquidity at times of tight traditional bank credit, reserve credit with countercyclical effects to the overall monetary supply for macroeconomic stability, and bonds between local companies to preserve the society's economic fabric (Kalinowski, 2011).

9 local currencies, meaning issued currencies at a local level: apart from 2 commercial oriented currencies which are Kireego based in Lausanne and Swiss Ecu based in Zurich, there are 7 complementary currencies such as NetzBon launched in 2005 in Basel, TicinoCoin launched in 2014 in Ticino, Léman launched in 2015 in Genève, Bonobo launched in 2015 in Bern, EulachTaler launched in 2016 in Winterthur, TALENT Schweiz launched in 1993 and relaunched in 2016 in Aarau, and Farinet launched in Sion in 2017 with 25'619 CHF raised from 263 donors in December 2016 with 150'100 Farinet in circulation among 186 organizations in August 2018 (Le Farinet, 2018). Furthermore, 3 draft projects will be launched such as L'Épi in September 2018 from Échallens with 15'054 CHF raised from 116 donors in May 2018, La Grue, or der Kranich, in 2019 from Rossinière, and Monnaie Locale Fribourg or Freiburger Lokalwährung in 2019 from Fribourg. From 1992 to 1994 was launched Flecü in Zurich by FleXibles which reached 2'800 units in circulation and 80 individual users (Martignoni, 2012).

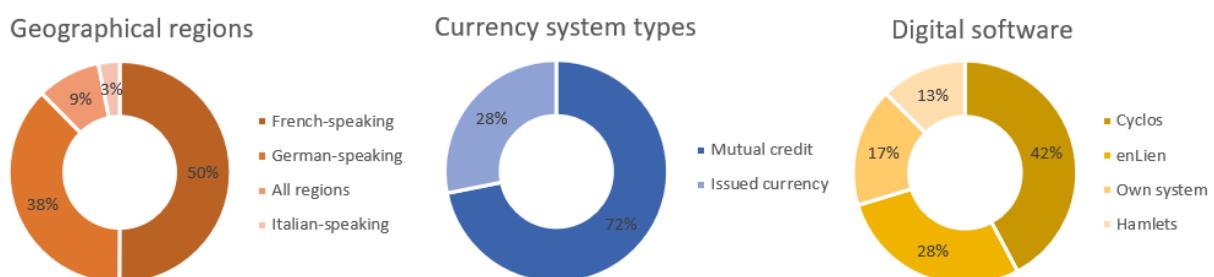
Indeed, in 2002 was drafted and in 2005 was launched in Basel Bon-Netz-Bon, meaning Good Network Voucher, and 120 organizations were exchanging in 2014 thanks to this system integrated in a network of organizations under a social and solidarity economy cooperative financed by 50 CHF yearly membership and 200 CHF entry fee through a cooperative share capital (Wallimann, 2014). In 2015, in the Greater Geneva, including the Swiss cantons of Geneva and Vaud and the French departments of Haute-Savoie and Ain, was launched the Swiss-French cross-border currency entitled Léman, a physical and digital currency of mutual credit Lémanex and issued currency e-Léman at par with both Swiss franc and euro, with 150'000 units in circulation among a network of 460 organizations and 4'000 users in January 2018 (Monnaie Léman, 2018).

49 mutual credit systems or time-based currency, such as Local Exchange Trading System or Time Banking: 25 in the German-speaking Switzerland called Tauschsysteme in German (ZART, 2013). Since 1997, 28 in the French-speaking Switzerland called Système d'Échange Local in French (SEL-Suisse, 2016). In 1997, 1 in the canton of Ticino in the Italian-speaking Switzerland called Banca del Tempo in Italian (ZART, 2013). From 2008 to 2012 was launched Easyswap in Lausanne which reached 4'000 individual users (Place et al. 2017). In terms of digital softwares, 27 are using Cyclos of Social Trade Organisation, 18 are using Espace InterSEL of enLien network under WordPress Content Management System, 8 are using Hamlets of Community Forge under Drupal Content Management System, 2 are using their own digital software.

Based on a literature review, a data analysis and a survey of 12 questions sent, between December 2016 and March 2017, to potential contacts of 58 Swiss currency systems with 7 returns, here are the results according to the following criteria, as only active networks from less than a semester from January 2018 are considered on this list, and thus 4 more mutual credit systems using Espace InterSEL from enLien network are not stipulated here (number of currencies, percentage for a total of 64):

- Region: linguistic region such as Swiss for all regions (6, 9.3%), German for German-speaking part (24, 37.5%), French for French-speaking part (32, 50.0%), Italian for Italian-speaking part (2, 3.1%), Romansh for Romansh-speaking part.
- Currency name: number which appears on the atlas below.
- System type: issued currency for loyalty reward or pledge backed currency with L for local currency (18, 28.1%); mutual credit for local exchange trading system or time banking (46, 71.8%). Digital softwares: C: digital software Cyclos of Social Trade Organisation (27, 42.2%); E: digital software Espace InterSEL of enLien network (18, 28.1%); H: digital software Hamlets of Community Forge (8, 12.5%); own system (11, 17.2%).
- Units: units in circulation.
- Organizations: number of organization members such as businesses or producers.
- Individuals: number of individual members such as users or consumers.

Graphic 1: Swiss currency systems repartition in August 2018

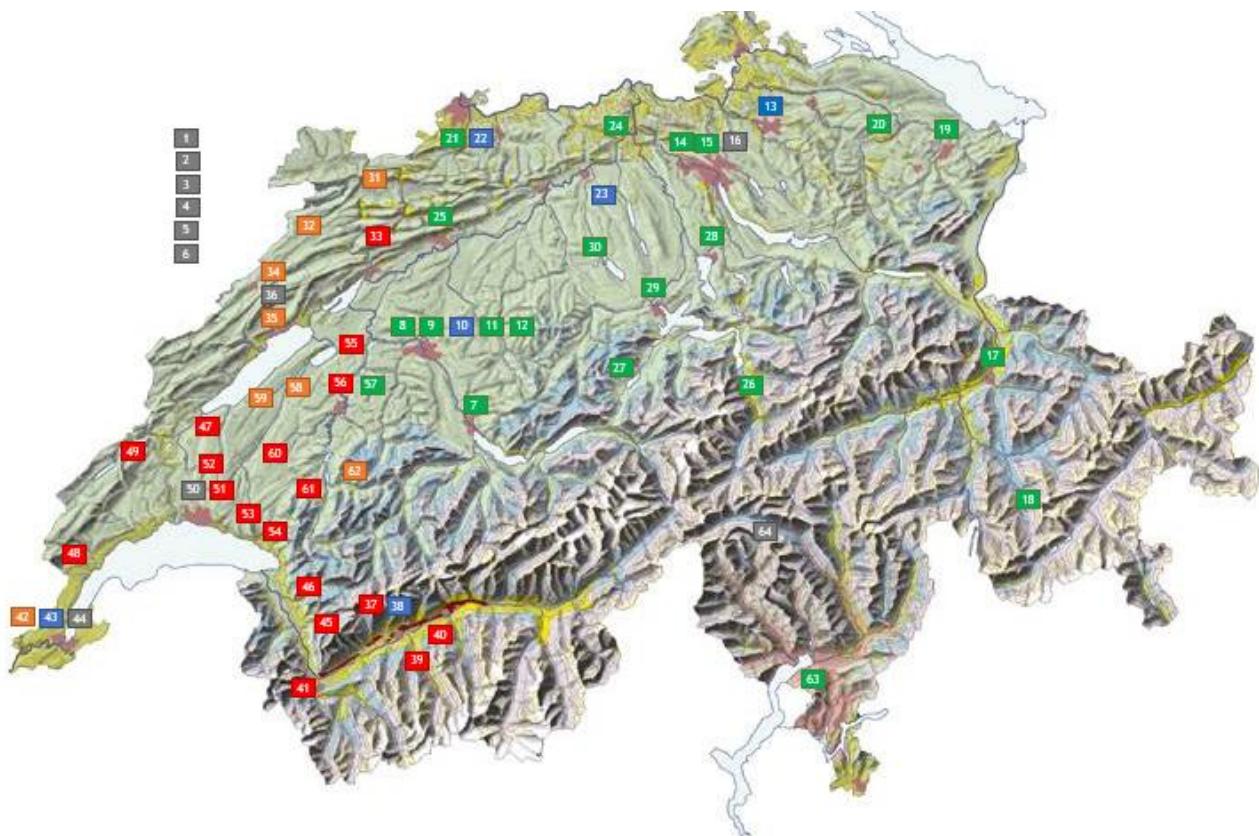


Board 1: Swiss currency systems compendium in August 2018

Region	Canton	City	Currency name	System type	Launch date	Units	Organizations	Individuals
Switzerland	-	Zurich	1. Migros Cumulus	Issued currency				
	-	Basel	2. Coop Supercard	Issued currency				
	-	Bern	3. Reka cheque	Issued currency				
	-	Basel	4. WIR	Issued currency	1934	1'120'000'000	40'000	0
	-	-	5. Bitcoin	Issued currency	2013			
	-	Zug	6. Ethereum	Issued currency	2015			
German	Bern	Thun	7. Zytbörse Thun	Mutual credit C				
	Bern	Bern	8. Tauschnetz Länggasse Bern	Mutual credit C				
	Bern	Bern	9. Tuuschn-Träff Bümpliz	Mutual credit C				
	Bern	Bern	10. Bonobo - Bon ohne Boss	Issued currency L	2015			
	Bern	Bern	11. Bazore - Orte Zum Zeit-Tauschen	Mutual credit C				
	Bern	Burgdorf	12. Nachbarschaftshilfe Burgdorf	Mutual credit C				
	Zürich	Winterthur	13. EulachTaler	Issued currency L	2016			
	Zürich	Zurich	14. Tauschen am Fluss (Netzwerk)	Mutual credit C	2006			186
	Zürich	Zurich	15. give&get + VAZYT Winterthur	Mutual credit C	01.11.2011			230
	Zürich	Zurich	16. (+)ecu, swiss ecu	Issued currency	2011			
	Graubünden	Chur	17. Ziitbörsa Chur und Umgebung	Mutual credit C				
	Graubünden	Samedan	18. tauscheria Südbünden	Mutual credit C				
	St. Gallen	St. Gallen	19. Zeitbörse Benevol St.Gallen	Mutual credit C				
	Thurgau	Bischofszell	20. Stund um Stund Region Bischofszell	Mutual credit C				
	Basel-Stadt	Basel	21. Zeittauschbörse Region Basel	Mutual credit C				
	Basel-Stadt	Basel	22. NetzBon, Bon-Netz-Bon	Issued currency L	2005			120
French	Aargau	Aarau	23. TALENT Schweiz	Issued currency L	08.08.2016	30'000	10	156
	Aargau	Bözberg	24. Tauschring Fördertaler	Mutual credit C	01.06.2015	5'000	10	10
	Uri	Schattdorf	25. Verein ZeitTausch Solothurn	Mutual credit C				
	Obwalden	Sarnen	26. Tauschnetz Uri	Mutual credit C				
	Zug	Zug	27. Tauschkreis Obwalden	Mutual credit C				
	Luzern	Luzern	28. Exsila AG	Mutual credit C				
	Luzern	Sursee	29. Luzerner Tauschnetz	Mutual credit C				
	Jura	Delémont	30. Tuuschnetz Soorsi	Mutual credit C				
	Jura	Franches Montagnes	31. SEL région Delémont (Pépite)	Mutual credit H	2014			
	Jura	Moutier	32. SEL Franches-Montagnes (Pive)	Mutual credit H	2013			135
	Neuchâtel	La Chaux-de-Fonds	33. SEL région Moutier (Birse)	Mutual credit E				
	Neuchâtel	Neuchâtel	34. SEL de la Chaux-de-Fonds (Picaillon)	Mutual credit H	2002			
	Neuchâtel	Val-de-Ruz	35. SEL des Rives	Mutual credit H				
	Valais	Sion	36. SEL Vaudrusien (Batz)	Mutual credit	1997			100
	Valais	Sion	37. SEL de Sion (Grain de eigne)	Mutual credit E				
	Valais	Sion	38. Farinet	Issued currency L	13.05.2017	150'100	186	
	Valais	Evolène	39. SEL d'Hérens (Flocon)	Mutual credit E				
	Valais	Uvrier St-Léonard	40. SEL Uvrier St-Léonard (Lienne)	Mutual credit E				
	Valais	Martigny	41. SEL des Dranses (Perle)	Mutual credit E				
	Genève	Genève	42. SEL du Lac (Grain de sel)	Mutual credit H	2009			160
	Genève	Genève	43. Léman (Lemâ)	Issued currency L	18.09.2015	160'000	550	4'000
	Genève	Genève	44. Tryngo	Mutual credit				
	Vaud	Bex	45. SEL de Bex (Châtaigne)	Mutual credit E				
	Vaud	Aigle	46. SEL de la Grande-Eau (Plume)	Mutual credit E				
	Vaud	Échallens	(Épi)	Issued currency L	22.09.2018			
	Vaud	Yverdon-les-Bains	47. UnYverSEL (Pesta)	Mutual credit E	03.07.2017	37'500		100
	Vaud	Begnins	48. SEL de La Côte (Grain)	Mutual credit E				
	Vaud	Vallorbe	49. SEL des 3 Vallons (Noix)	Mutual credit E				
	Vaud	Lausanne	50. Kireego	Issued currency				
	Vaud	Lausanne	51. SEL Sous-Gare (Milan)	Mutual credit E	2013			
	Vaud	Lausanne	52. SEL de Chailly (Tipont)	Mutual credit E				

Vaud	Oron	53. SEL d'Oron (Fâne)	Mutual credit E				
Vaud	Vevey	54. SEL Léman (Galet)	Mutual credit E				
Vaud	Rossinière	(La Grue, der Kranich)	Issued currency L	~2019			
Fribourg	Morat	55. SEL Lac Morat	Mutual credit E				
Fribourg	Fribourg	56. SEL Sarine (Grain)	Mutual credit E				
Fribourg	Fribourg	57. Tauschnetz Freiburg	Mutual credit C				
Fribourg	Fribourg	(Monnaie Locale Fribourg)	Issued currency L	~2019			
Fribourg	Belmont-Broye	58. Le Pot d'Sel du Belmont (Grain)	Mutual credit H				
Fribourg	Murist	59. SEL de la Molière	Mutual credit H				
Fribourg	Romont	60. SEL Glânois (Sésame)	Mutual credit E	06.04.2010	5'000		190
Fribourg	Bulle	61. SEL de Bulle (Bulle)	Mutual credit E				
Fribourg	Val-de-Charmey	62. SEL de la vallée de la Joggne	Mutual credit H	2004			35
Italian	Ticino	63. Scambio di Favori	Mutual credit C	1997	700	60	135
Italian	Ticino	64. TicinoCoin	Issued currency	2014			

Figure 1: Swiss currency systems atlas in August 2018



### 3. A REFERENCE CASE STUDY: LÉMAN, A CROSS-BORDER CURRENCY

The first world known cross-border currency, named Kékfrank, between Hungary, Austria and Croatia, was launched in spring 2010. Indeed, Kékfrank, name of a famous red wine called blue franc, was created the 7th of May 2010 in the 57'000 inhabitants' city of Sopron in the western border of Hungary, 60 km from Wien, by a European Cooperative Society, based on the Latin Societas Cooperativa Europae, gathering Hungarian, Austrian and Croatian individuals and legal entities for a total of 150 members. In 2011, only 13% of those who know Kékfrank use it, and 13% of them use it on a monthly regular basis. In 2013, about HUF 10 million equivalent of Kékfrank were in circulation among the network of 650 acceptors, with a conversion fee of 0.25%, plus valued added tax, with the Hungarian forint, for a minimum of 500 HUF conversion (Szalay, 2011; Sárdi et al., 2013). In Switzerland, the local issued currency Bon-Netz-Bon, renamed NetzBon in 2015, was a democratically transnational alternative currency system as you could exchange it with the local issued currency Sol, in the French region Alsace part of the Grand Est from 2005 to 2010, and with the local issued currency Markgräfler, subsequently the DreyEcker as a metaphor for Dreieckland, in the German Freiburg administrative district of Baden-Württemberg state from 2007

to 2010 (Burgy, 2009). Then, a new cross-border currency, Léman, was born between Switzerland and France in autumn 2015, in the Genevan basin, called the Greater Geneva, a developed cross-border region which encompasses almost 920,000 inhabitants, 400,000 jobs and 40,000 businesses as the second largest conurbation in Switzerland as well as in the Rhône-Alpes region, with economic stability and financial health with its mechatronics cluster and plastics hub in the French part, and its watchmaking precision machinery and world financial place in the Swiss part (Place et al., 2017). Furthermore, Geneva is a multicultural canton with 493'706 inhabitants in 2016 originally from: 22.7% Confederates, 36.7% Genevan, 40.5% from abroad from which 18.1% Portuguese, 15.5% French, 10.4% Italian and 7.6% Spanish (OCSTAT, 2017).

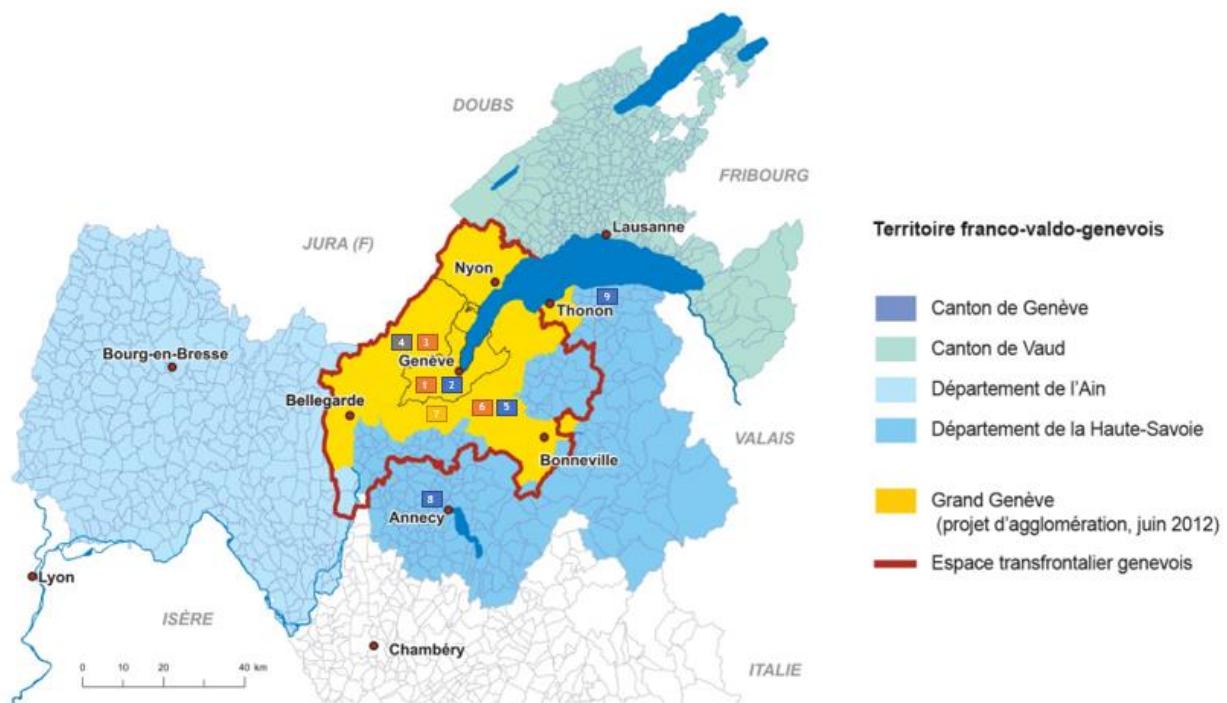
Concerning complementary currency projects in or near the Greater Geneva region, based on a literature review, a data analysis, and a survey of 12 questions sent to potential contacts of 7 Greater Geneva currency systems with 4 returns, here are the results according to the following criteria, only active networks from less than a semester from January 2018 are considered on this list (number of currencies, percentage for a total of 9) (Monnaie Complémentaire Locale Citoyenne, 2016):

- Currency name: number which appears on the atlas below.
- System type: issued currency for loyalty reward or pledge backed currency with L for local currency (4, 44%); mutual credit for local exchange trading system or time banking (5, 56%). Digital softwares: H: digital software Hamlets of Community Forge (3, 33%); A: digital software Accorderie of Le Réseau des Accorderies de France (1, 11%); own system (5, 56%).
- Units: units in circulation.
- Organizations: number of organization members such as businesses or producers.
- Individuals: number of individual members such as users or consumers.

Board 2: Greater Geneva currency systems compendium in August 2018

Geographical basin	Currency name	System type	Launch date (Draft date)	Units	Organizations	Individuals
Genève, Geneva	1. SEL du Lac	<b>Mutual credit H</b>  <b>Issued currency L</b> ,	2009			
Greater Geneva, Lemanic Arc	2. Léman	euro and swiss franc par Mutual credit	2015 (2010)	160'000	550	4'000
Saint-Genis-Pouilly, Ain	3. SEL du Pays de Gex	<b>Mutual credit H</b>	2010			40
Thoiry, Ain	4. Tiok	Mutual credit	2012 (2011)	500		30
Annemasse, Haute-Savoie	5. Éco du Bon Sens	<b>Issued currency L</b> , euro par	2012 (2010)		70	
Annemasse, Haute-Savoie	6. SEL du Genevois	<b>Mutual credit H</b>	2016			
Saint-Julien-en-Genevois, Haute-Savoie	7. Accorderie du Genevois	<b>Mutual credit A</b>	2016 (2014)			155
Annecy, Haute-Savoie	8. Gentiane	<b>Issued currency L</b> , euro par	2017 (2011)			
Chablais, Haute-Savoie	9. Chab	<b>Issued currency L</b> , euro par	2017 (2016)			

Figure 2: Greater Geneva currency systems atlas in August 2018



Source : OST, Grand Genève

In 2015, the sustainable development or social innovation network of Geneva, called APRÈS-GE the social and solidarity economy chamber of Geneva, had 270 members, from which 54% receive some public subventions, financing or allowance and 76% are association, foundation or cooperative, was to compare with the Geneva business network of 27'000 companies and 80 professional associations, called Fédération des Entreprises Romandes. However, in 2015, with a financial volume of CHF 400 million, the social and solidarity economy chamber of Geneva represented 11% of the job employment in the Geneva canton, with 5'000 employees and 12'000 volunteers, and offer goods and services to 400'000 beneficiaries (APRÈS-GE, 2015). APRÈS-GE decided, by a unanimous General Assembly vote, the 29th of May 2013, to cooperate with the complementary currency creation process. Thus, the Greater Geneva Currency pre-project group for a collective co-creation was created the 27th of September 2013 (APRÈS-GE, 2014; Monnaie Grand Genève, 2014). Since June 2010, on the French part of the Greater Geneva, the Eco was created and launched the 13th of September 2012 in the Annemasse urban conurbation reached 70 service providers in 2016 and partly integrated the Léman project (Eco Du Bon Sens, 2012; Monnaie Complémentaire Locale Citoyenne, 2016).

The 2nd of February 2014, the SASFERA association was created and the 8th of July 2015, this same association was dissolved to transfer the fund for the creation of two Léman currency association, the Swiss Léman currency based in Geneva for the Swiss part and the France Léman currency based in Annemasse for the French part. The 18th of September 2015, the Léman, also entitled Lemā or Le Léman in French, was launched at the Alternatiba Léman festival, thanks to a business to business to consumer system, collective and voluntary co-creation, and open and participatory governance in the cross-border Genevan region with an objective of 500 users and 100 businesses in a year to strengthen the network and encourage local economy for a regional sustainable development (Monnaie Léman, 2016). Built from the open source code of Ethereum blockchain technology, the 27th of October 2017 was launched both the digital currency of mutual credit Lémanex and issued currency e-Léman at par with both Swiss franc and euro with 41 pioneering organizations using it. In January 2018, 150'000 units were in circulation among a network of 460 organizations and 4'000 users. After the TicinoCoin code creation in 2014 without circulation, the Lémanex and e-Léman launched in October 2017, was the first concrete Swiss synergy between local complementary currency and cryptocurrency using blockchain technology.

Here are the three main study results concerning the Greater Geneva currency pre-project (Place, 2018; Place, 2015):

- Favourable opinion on the implementation thanks to a qualitative survey of 14 stakeholders where perceived benefits outweigh the perceived costs. Its main salient attribute is to be an accelerator of wealth and an innovation with high added value (Nginamau, 2013).
- Value proposition not fully in line with expressed needs and concept perception: perception correlation on local exchange notion and consumption stimulation, but perception divergence on participative governance and social and solidarity economy objective according to 15 potential users (Chervaz, 2014)
- High potential of creating new transaction flow: one-third of the transaction volume of 13 members of APRÈS-GE could be made with actors respecting social and solidarity economy values showing a high potential for the flow dynamization of this network, whereas one-third of their transaction are already made with partners respecting these same values (Calderon, 2015). One-third of economic relation, of analyzed actors, are made with partners sharing social and solidarity economy values and one-third of transactions made with actors, defending different values, could be made with actors sharing social and solidarity economy values according to a flow analysis of 13 organisations, of the social and solidarity economy chamber of Geneva, based on a survey of inter-enterprises transfer registration from 2012 to 2014 (Community Forge, 2014).

Here are the three main study results concerning the Léman currency project (Place et al., 2017):

- Only 10.2% use the Léman currency from a sample of 98 persons, and for them, the business network increase and the currency image communication with a label are the priority strategic approach. For those who never used the Léman currency, the priority strategic approach are the promotion, communication, and advertisement of the Léman currency and the financial advantages to incentivize exchange, thanks to promotional discount (Cordeiro, 2016). From a sample of 98 persons between 18 and 30 years old, 61.2% heard about the Léman and 16.7% of them used it at least one time.
- 75% of 16 businesses are favourable to the implementation of a micro-audit service for sustainable management support which can justify a 200 CHF yearly membership even if impacts are low at the moment (Cordeiro, 2016).
- 93.3% of 15 consumers consider the Léman as a label, 66.7% feel a sense of community, 53.3% improve their consumption behaviour thanks to the Léman (Raynard, 2018).

*Board 3: synthesis of the Greater Geneva pre-project and Léman project studies' results*

Study	Results details	Methodology (sample)
Nginamau, 2013	Favourable opinion: perceived benefits outweigh perceived cost Salient attribute: wealth accelerator and high added value innovation	Qualitative survey (14 stakeholders)
Chervaz, 2014	Value proposition perception correlation: local exchange notion and consumption stimulation Value proposition perception divergence: participatory governance and social and solidarity economy objective	Qualitative survey (15 potential users)
Calderon, 2015	Existing transaction flow: 1/3 of network transaction volume are made with partners respecting social and solidarity economy values Flow dynamization high potential: 1/3 of network transaction volume could be made with actors respecting social and solidarity economy values	Quantitative analysis (13 organizations)
Cordeiro, 2016	10.2% use the Léman currency: 61.2% heard about the Léman and 16.7% of them used it at least one time. 61% chose business network growth, currency image communication and financial advantage with promotional discount as a strategic approach 75% favourable for micro-audit service for sustainable management implementation: to justify an eventual 200 CHF yearly membership	Qualitative survey (98 potential users)
Raynard,	93.3% consider the Léman as a label. 66.7% feel a sense of community	Qualitative survey (15)

2018	and 40% of cooperation and solidarity. 53.3% improve their consumption behaviour. 66.7% do not find it user-friendly. 60% do not sufficiently find basic goods and services. 20% use some Léman on a monthly basis. 48.1% receive some Léman on a monthly basis. 14.8% pay their suppliers in Léman. 63% do not swap back their Léman in Swiss francs. 81.5% do not improve their sustainable management practices. 88.9% do not improve their client turnover or loyalty.	consumers) Qualitative survey (27 producers)
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Source: Place et al., 2017

Table 1: synthesis of the Greater Genevan currency Léman characteristics (officially registered in May 2018)

Launch date	18 <sup>th</sup> of September 2015
Geographical location	Greater Geneva conurbation, Lemanic Arc metropolis
Name	Léman, [Lemā] in phonetics, also entitled <i>Le Léman</i> or <i>Monnaie Léman</i> in French
Slogan baseline	Your currency, or <i>votre monnaie</i> in French (before: cross-border Lemanic basin local currency)
Value proposition	Local, citizen, ethical solidarity and ecology, cross-border
Ethic charter	Local, solidarity, working conditions, real economy, social-ecologically responsible, continuous improvement
Organization	Monnaie Léman Suisse (in Switzerland), Monnaie Léman France (in France), 1'600 members in May 2018.
Volunteer members	200 in November 2016, 100 in June 2016, 30 in 2013, 10 in 2011
Support	6 experts, 6 academic or research institutions, 7 ambassadors for director's fees or income percentage paid in Léman
Stakeholders	Social and Solidarity Economy Chamber in Geneva (270 members), 2 city councils (Carouge, Annemasse)
System	Issued currency pledge by Swiss franc and euro and mutual credit
Format	Physical currency with paper notes and digital currency (e-Léman for issued currency, Lémanex for mutual credit)
Note denomination	1, 5, 10, 20
Par	1 léman is equivalent to 1 Swiss franc and equivalent to 1 euro
Conversion	1 EUR = 1 LEM = 1 CHF. EUR/CHF exchange of November 2016 equal to 1.076. 3% of conversion rate when swap back LEM to CHF or EUR.
Revenue model	Free software application and 50 CHF facultative annual membership for individuals 75 to 800 CHF annual membership based on juridical structure and size of the organization 1% transaction commission except on wages paid by an organization to an employee
Units in circulation	160'000 in May 2018, 150'000 in January 2018, 80'000 in November 2016, 50'000 in June 2016
Business/producers	550 in May 2018, 460 in January 2018, 350 in November 2016, 250 in June 2016, 17 in September 2015
Users/consumers	4'000 in January 2018, 1'300 in November 2016, 800 in June 2016, 67 in September 2015

Source: Place et al., 2017

In January 2018, in term of business model and legal status, the Léman was entirely managed by the two central associations Monnaie Léman Suisse in Switzerland and Monnaie Léman France in France. In the future, annual membership of individuals and organizations will become the revenue of these two associations in charge of the communication, training, conference and local shop development service provision in terms of events, contacts and articles. A Lémanex cooperative with a revenue based on 1% transaction commission from which 0.3% for a reserve fund, mainly managed by these two associations, APRES-GE and CRESS Auvergne Rhône-Alpes, the social and solidarity economy chamber of French region Auvergne Rhône-Alpes, will be in charge of the commercial offer of the monetary innovation with credit line analysis for organization financing facilitation and sales brokers for market place activation between suppliers and clients. A ComChain cooperative for the open source consortium of peer-to-peer blockchain technology for the commons, will be in charge of the technological software of issued currency, mutual credit, income payment, e-commerce market place digital systems through its application

Biletujo: a multi-currency interoperability wallet with decentralized and shared governance with electronic voting.

As currency is a payment service for a community network, to increase the confidence, credibility and viability of the Léman currency, the value proposition need to answer the user needs. To design this service concept in the synergy of a participatory governance, which is the key of monetary innovation and co-creation principle, users need to be integrated in the currency modality creation process. Currently, the value proposition is based on four topics: local, citizen, ethical social and ecology, cross-border. Nevertheless, the above studies have demonstrated that participatory governance and social and solidarity economy objective were not important for users, whereas local exchange notion and consumption stimulation were important. Furthermore, users need a growth of the business network, a better currency image communication and some financial advantages, while organizations wish a sustainable management micro-audit. Public service payment, salary bonus, promotional discount, and transaction stimulation with legal technical sales representatives are essential to increase the purchase offer diversity and boost the purchase power of the user to give value to the Léman currency. Indeed, a currency has value not only when you trust it but also when you can use it to purchase basic, vital or wished goods and services (Cordeiro, 2016; Raynard, 2018).

Consequently, the activation of the business network is necessary, but to do so, the Léman currency need to propose a genuine value added, like a 5 stars' label program. But this label system, based on a micro-audit certification, can only exist if the Léman currency image communication is intelligible and accessible for everybody. After focusing on the client advantage, a financial plan, to calculate the necessary financial needs to highlight the team of skilled human resources, and an impact report, to assess the economic, social and environmental impact of the currency, should be integrated in a business plan to raise some fund from private and public sponsors such as Swiss cantons, French department, Greater Geneva and Lemanic Arc. Thanks to legal technical salespersons, not only the goods and services offer diversity would increase thanks to the network growth, but also the volume transaction within the business network would be incentivize. A digital platform, or even a mobile payment gateway, would propose a mutual credit, improve the promotional discount system, and assess the impact of the currency stock and flow (Place et al., 2017).

#### 4. SWISS CURRENCY REGULATIONS

In the European Union, since the revised payment service directive which has come into force on the 13th of January 2018, payment service providers without credit card will now be subject to the same regulatory and supervisory standards as all other payment institutions (Zanolli, 2017). Nevertheless, this directive does not apply to the services based on specific payment instruments that can be used only in a limited way, that meet the following condition:

- Currencies issued in a limited network under a commercial contract with a professional emitter.
- "Instruments allowing the holder to acquire goods or services only in the premises of the issuer or within a limited network of service providers under direct commercial agreement with a professional issuer". (Official Journal of the European Union, 2015).

Swiss citizens refused the adhesion to Economic and Monetary Union of the European Union, the conservation of its central bank's gold reserve, and the universal basic income system. Indeed, here are some federal popular initiatives, presented at the Federal Chancellery of Switzerland between 1891 and 2017, linked with the monetary policy of the Swiss Confederation (Federal Chancellery, 2018):

Board 4: list of Swiss federal popular initiatives

Swiss federal popular initiative	Voting date Participation rate	People result Result rate	Cantonal result Result rate
European Union adhesion negotiation: what people decide! Bilateral treaties I between the Swiss Confederation and the European Union signed the 21 <sup>st</sup> of June 1999.	06.06.1997 35.44%	No 74.10%	No 26/26
Yes to Europe! Bilateral treaties II between the Swiss Confederation and the European Union signed the 26 <sup>th</sup> of October 2004.	04.03.2001 55.79%	No 76.80%	No 26/26
Swiss National Bank gold reserves surplus for the National Pension Fund payment Retirement and Survivor Insurance is the main social security system in Switzerland.	22.09.2002 45.17%	No 52.20%	No 20/6
Swiss National Bank profits for the National Pension Fund payment	24.09.2006 48.75%	No 58.30%	No 23/6
Save the Swiss gold (gold initiative) Swiss National Bank gold reserve is inalienable, should be stock in Switzerland, should represent 20% of the national asset. In 1992, Switzerland join the International Monetary Fund and withdraw from its 40% minimum gold cover for Swiss Franc. In 1999, with the new federal constitution the gold cover for Swiss Franc is dissolved. From 2'590 tons of gold reserve in the Swiss National Bank in 2000, 1'300 tons have been sold till 2005 for 21.1 milliard Swiss Franc for the cantons and the National Pension Fund, and 250 tons in 2008 (Swiss National Bank BANK, 2014).	30.11.2014 48.70%	No 77.30%	No 26/26
For a basic income 2'500 CHF per adult and 625 CHF per child as a monthly basic income was proposed. Unconditional basic income or universal basic income or basic income guarantee should not be confused with living wage.	05.06.2016 46.40%	No 76.90%	No 26/26
For a sustainable economy based on efficient management of resources (green economy initiative) This federal popular initiative was not directly linked with monetary policy but with green and circular economy that would be indirectly in favour of community and complementary currency systems implementation.	25.09.2016 42.2%	No 63.6%	No 25/26
For a money away from crisis: Swiss National Bank money issue only (full money initiative) The full money initiative has been deposited the 01.12.2015 with 110'955 valid signatures, to force commercial bank to only issue money from its savers, investors and the Swiss National Bank to avoid the commercial bank money creation system and its privilege, also called full-reserve banking or 100% reserve banking as a monetary reform. Article 99 authorise the emission of private means of payment with limited users under the Swiss National Bank legal mandate conformity and constitutional legal security guaranteed (Swiss Sovereign Money Initiative, 2018).	10.06.2018 33.8%	No 75.7%	No 26/26

Source: Federal Chancellery, 2018

According to the Federal Law on the Swiss National Bank and the Federal Law on monetary unit and payment means: the Swiss National Bank, as an independent central bank, is administered under the surveillance of the Swiss Confederation, Swiss franc is the only legal currency on the territory and coins and banknotes issue is the exclusive privilege of the Swiss Confederation (Swiss Confederation, 1999). Swiss franc is based on laws, decrees and decisions of the Swiss federal state since 1848, before incorporating businesses in 1907 (Martignoni, 2012). Financial intermediaries are under strict rules in relation with currency issue according to the anti-money laundering law from the Federal Commission Order of banks in terms of anti-money laundering measures (Swiss Confederation, 1997). Security and traceability control of currencies is such an important issue in Switzerland that,

thanks to the Bitcoin case, the Swiss Financial Market Supervisory Authority FINMA ruled on the virtual currency legislation (FINMA, 2014; Swiss Confederation, 2014; Es Kommt Darauf An, 2014):

- Non-convertible currency, virtual currency for virtual currency, are legal as for social game, such as in game currency like video game currency.
- Semi-convertible currency, swiss franc in virtual currency only, are legal as for loyalty voucher, such as store currency like Migros Cumulus, Supercard Coop or Reka cheque.
- Convertible currency, virtual currency in swiss franc and swiss franc in virtual currency, are legal as for currency market, such as internet currency like Bitcoin.

"The use of bitcoins as a means of paying for goods and services in Switzerland is not regulated; in other words, no special licence is required." (FINMA, 2014).

Swiss legislation is favourable to monetary innovation as convertible currencies, as means of paying for goods and services, are not regulated, no special licence is required, and thus legal. Indeed, payment method for goods and services is not regulated in Switzerland and therefore legal, and Swiss law contains no specific provisions on virtual currencies, though depending on conversion scheme and business model, some activities are subject to regulations:

- Financial intermediary for virtual currency peer-to-peer trade, exchange or brokers platform. "The purchase and sale of bitcoins on a commercial basis is subject to Switzerland's Anti-Money Laundering Act. The same applies to the operation of trading platforms which are used to transfer money or bitcoins from a platform's users to other users." (FINMA, 2014).
- Full-banking license for virtual currency fiat money deposit on a commercial basis. "Some commercial activities involving bitcoins require a banking licence. This is generally the case when an organisation, as part of its business activities, accepts money on a commercial basis from clients and keeps it in its own accounts. The same applies to providers who accept bitcoins from clients and administer bitcoin holdings for clients." (FINMA, 2014).

In 2014, Bity and Bitcoin Suisse were approved as cryptofinance members of a Swiss self-regulatory organization, enabling them to legally operate cryptocurrency brokerage services in Switzerland, and Ethereum Foundation launched a token sale under the Swiss Financial Market Supervisory Authority FINMA. In 2015, the Swiss Federal Council and Swiss Financial Market Supervisory Authority FINMA announced and stated that Bitcoin was a virtual currency treated as a foreign currency, without any new regulations needed but with transactions exempted from sales taxes, and the Digital Finance Compliance Association drove a friendly regulatory framework for cryptofinance in Switzerland and promote technology neutrality. In 2016, the Swiss Financial Market Supervisory Authority FINMA updated its anti-money laundering policy to classify Bitcoin transactions under money transmission with exemption for strictly person-to-person bilateral transactions, to authorize financial institution to accept electronic methods in place of paper documents for opening accounts, and to not require a banking licence for third-party storage of cryptocurrency assets which is not a form of deposit taking falling under banking regulations. This same year, the Swiss Federal Council announced a FinTech licence with reduced regulatory requirements to encourage innovation in this field of financial technology with more than 200 start-ups in Switzerland (Crypto Valley, 2018).

Indeed, Switzerland figures among the top five countries for FinTech companies, as no specific regulatory or tax rules apply to FinTech. For the time being, these businesses are subject to the ordinary framework of the Swiss Financial Market Supervisory Authority FINMA as well as to anti-money laundering provisions. Thus, for anti-money laundering, FinTech start-ups should, prior to starting, obtain a FINMA licence or register with a Swiss self-regulatory organization, to discuss business model and obtain certainty as to regulatory treatment. Indeed, a banking licence may be needed if client funds are held for more than 7 days or received from more than 20 clients. In February 2017, legislative amendments have been proposed to set the holding period for client funds to 60 days instead of 7 and to allow the holding of one million Swiss francs, 1'000'000 CHF, in client assets without triggering a banking licence requirement by creating a new lighter FinTech licence for businesses holding up to one million Swiss francs, 1'000'000 CHF, in client deposits or currencies circulation. Thanks to this initiative to become even more competitive, Switzerland may result in the most tax efficient country for FinTech structures, to

maximize their funds at disposal to finance their relevant projects (Oberson Abels, 2017). It has also been said that this lighter FinTech licence could allow the creation of a FinTech electronic bank with three hundred thousand Swiss francs, 300'000 CHF, of owners' equity instead of eight to twenty million Swiss francs, 8'000'000 CHF to 20'000'000 CHF, of shareholders' equity for a classic commercial bank, or cooperative bank as used to be the Banque populaire suisse before 1990

Since 2016, the Swiss Financial Market Supervisory Authority FINMA exchanged some letters, of about fifteen questions to re-establish legal order according to the anti-money laundering law, with several Swiss currency systems and authorized them, without triggering a banking licence requirement or being registered with a Swiss self-regulatory organization, to either limit the maximum amount of currency exchanged at once up to 3'000 CHF, or back the entire amount of currency in circulation in a pledge account of a commercial bank who engage its control responsibility but not guarantee the deposit (FINMA, 2018). From now on, it is necessary to notify the Swiss Financial Market Supervisory Authority FINMA before launching a monetary innovation in Switzerland and answer the questionnaire within a week. Being regulated directly under a Swiss Financial Market Supervisory Authority FINMA licence or registered with a Swiss self-regulatory organization such as the Financial Services Standards Association VQF used by some cryptocurrencies, or even by creating a specific one for monetary innovation under the Swiss Forum-SRO for Forum association of self-regulatory organizations, is nowadays the correct procedure to follow under an overseeing body. By being directly controlled by the Financial Market Supervisory Authority, cost is proportionate to income. Nevertheless, to avoid excessive formalities at a cantonal or federal level and in accordance with the personal data protection within a private club using an intermediary of payment in a restricted community, the official list of individuals or organizations members is not necessary. Remind ourselves that Swiss freemen or burgesses can issue currency and that tally stick, two unforgeable pieces of the same wood with nock as a proof of value, are recognized as a currency in some Swiss cantons.

Notwithstanding, to overpass the limitation of the current institutional regulation and policy in many countries, which imposes existing criteria and framework restrictions to monetary innovation or complementary currency, in the capacity of financial technology, gift voucher or social and solidarity economy organisation, a functional regulation would be more accurate to differentiate them: considering them as a service provider for liquidity, borrowing and saving, payment, insurance, and investment capital; within a limited network in size and scale according to the volume of users, organisations, transactions or market share; and managed under a for-profit shareholder company or non-profit structure ownership such as a social enterprise, a community interest company, a cooperative, or a union (Bindewald, 2018).

## 5. TOWARD A SWISS CURRENCY CONFEDERATION

An opinion poll on 3 topics was sent, between December 2016 and March 2017, to 58 Swiss currency systems with 6 returns showing that financing and impact are more important for Swiss currency systems than dissemination, promotion and federation (opinion: 4: very high importance, 3: high importance, 2: low importance, 1: very low):

1. Crowdfunding platform to support complementary currency systems? Average of 2.42 over 4.
2. Applied research on systems evolution, best practice, impact improvement? Average of 2.33 over 4.
3. Association to disseminate, promote and federate Swiss currency systems at a municipal, cantonal, national, and international level? Average of 2.08 over 4.

Based on this opinion poll and inspired by not only the initiative of the Bristol Pound to launch in United Kingdom a Guild of Independent Currencies in October 2014, which became later the Independent Money Alliance, but also the Swiss Crowdfunding Association, funded in June 2015 in Geneva to gather crowd-donating, crowd-lending, crowd-investing, and property crowdfunding, and the Crypto Valley Association, funded in January 2017 in Zug to gather blockchain ecosystems in a crypto-technology cluster, the Swiss Currency Confederation was publicly presented at the 1st Swiss Complementary Currency Encounter organized by NetzBon the 16th of September 2017 in Basel and informally launched at the 2nd Swiss Complementary Currency Encounter organized by Léman the 28th of October 2017 in Geneva. The 3rd Swiss Complementary Currency Encounter organized by Farinet the 05th of May 2018 in Sion formalized its consolidation.

Swiss Currency Confederation was initiated by Prof. Mag. Christophe PLACE after presenting the 10th of May 2017 a research paper, entitled Swiss impact currency: improving impactful currency systems for a sustainable economy in Switzerland and published in the conference proceedings of the 4th International Conference on Social and Complementary Currencies organized by the Research Association on Monetary Innovation and Community and Complementary Currency Systems and the Universitat Oberta de Catalunya in Barcelona, and the 14th of May 2017, he presided intermittently a group of researchers and practitioners working on Swiss currency systems who met, and finally founded the Swiss Currency Confederation (Place et al., 2017). After identifying Switzerland as a role model in terms of business-friendly environment, with not only its historical diplomatic neutrality and monetary and economic stability but also its world-class educational infrastructure and entrepreneurial innovation, and in terms of centuries-old decentralized culture of individual rights, with its citizen-controlled political system through its direct democracy voting systems, it was clear that this country was the perfect fertile ground and melting pot for monetary innovation. Indeed, historical monetary stability and decentralisation of power is in the heart of this multilingual and multicultural country. Switzerland could become an ideal environment for building the new generation of monetary innovation with cryptocurrency synergy like the TicinoCoin or the e-Léman and Lémanex using blockchain technology.

Figure 3: Swiss Currency Confederation logotype



Source: Swiss Currency Confederation, 2018

Swiss Currency Confederation mission was defined as follows:

"Our purpose is to gather, study, disseminate, and support the pluralism of Swiss currency systems at a municipal, cantonal, national, and international level:

- Gather all the diversity of currency systems in Switzerland.
- Study the art and practice of monetary innovations in Switzerland and abroad.
- Disseminate some relevant publications among its stakeholders.
- Support interdisciplinary research and education for their improvement." (Swiss Currency Confederation, 2018).

An honorary committee with Prof. Jean-Michel SERVET, a research committee with Prof. James STODDER, Prof. Isidor WALLIMANN, and a steering committee with Ph.D. Virgile PERRET, Dipl.Ing., MBA Jens MARTIGNONI and M.Ing., M.Sc., MBA Christophe PLACE, were created before formalizing and decreeing the future legal status of this association.

## 6. CONCLUSION

Switzerland is historically known for its economic and monetary health all around the world. With 3 different spoken languages, 3 main digital software, 64 community and complementary currency systems in January 2018 in the 99th sovereign state by population, with 8'465'234 inhabitants in September 2017, from which the oldest and biggest modern complementary currency in the world and the first cross-border local currency in the world using blockchain technology, Switzerland brought us international reference case studies. Our Swiss currency systems research study at a national and local level fulfilled our objective of revealing their repartition and legal framework. Indeed, according to our results, we can answer our research questions as follow: (1) half of the currency systems are in the French-speaking part and almost two-fifth in the German-speaking-part, more than two-third are mutual credit and less than one-third are issued currency, almost two-fifth use Cyclos software and one-third use enLien software whereas one-tenth use Hamlets software, (2) Léman case study taught us that the strategic implementation of a blockchain technology for both mutual credit and issued currency can attract more companies and individuals, but cannot substitute the need of a relevant value proposition and salespersons to

activate the exchanges within the network, (3) Swiss federal legislation, by driving the development of a friendly regulatory environment, is favourable to monetary innovation because convertible currency, as mean of paying for goods and services, is not regulated under 3'000 CHF exchanged at once, and only requires a lighter FinTech licence with a self-regulatory organization under 1'000'000 CHF in currency circulation. Consequently, Swiss Currency Confederation by gathering Swiss currency systems, should not only forge links with the Swiss Financial Market Supervisory Authority in virtue of pedagogical explanation of the different objectives of complementary currency systems, but also organize themselves to analyse if this lighter FinTech licence is a relevant legislation to support such monetary innovation. Indeed, is there a potential interest of creating a self-regulatory organization, or even a proper functional regulation emanating from the Swiss National Bank, for Swiss currency systems or the supposedly favourable legislation for currencies development would be enough for a direct regulation under the Swiss Financial Market Supervisory Authority? The question remains open and need further development to be answered.

In relation with our hypothesis, due to the various range of spoken languages, digital software, and currency system types between mutual credit, issued currency and cryptocurrency, Swiss Currency Confederation, besides gathering, disseminating, promoting and supporting these systems in Switzerland and abroad by developing an ecosystem of expert professional service providers and supportive relationships with the authorities to attract leading monetary innovation technologies, could take the advantage of network effects clusters or hubs by creating a self-regulatory organization with an economy of scale, if necessary. Due to its multicultural quantitative and qualitative reference case studies and its competitive regulation for crypto and complementary currency aside from European Union, could Switzerland potentially become a European laboratory for monetary innovation? At the leading edge of blockchain technology with its Crypto Valley funded in January 2017, gathering their strengths with the Swiss Currency Confederation launched in October 2017, is there an interest of developing monetary innovation for a sustainable economy in Switzerland? We only glance over the historical, cultural, political and economic context of this innovation laboratory, but to potentially become a European laboratory for monetary innovation, and to reach such an ambitious objective as a skill competence centre of excellence at the leading edge of monetary innovation reference case studies and technologies within a Currencies Hub, Cluster or Valley, a lot of works have to be done, starting with the creation of a formal association, and if relevant, a self-regulatory organization.

However, our weak return rate on our survey did not allow us to deeply analyse the genuine utility and impact of these currencies, and thus the interest of using such tools to reach sustainable development goals, to finally evaluate the interest of using complementary and virtual currency systems for a sustainable economy. Beyond revealing reference case studies and favourable regulations, further research or different methodology need to be done on this topic to fully answer these new research questions, by comparing them to other European countries. Nevertheless, Swiss currency systems, like most of the complementary currency systems, are not known to everyone, and only few people, who heard about it, really use it in a regular basis. The real challenge is to demonstrate the interest, advantages and benefits of using such a tool, as a service, in comparison with conventional money. To do so, a business plan, integrating an impact report, is not only essential to improve the value proposition to answer the client need and problematic, but also to raise the necessary fund to reach the network size and diversity goals. A clear value proposition, a strong purchase offer diversity, and a continuous impact improvement would legitimate the currency utility, value, trust, credibility for the stakeholders of these Swiss impact currency systems as a useful tool for a sustainable economy.

In a network of sustainable consumers and producers, made of non-governmental organisations, governmental institutions and private enterprises, it is indispensable to consolidate the strategic policy of corporate social responsibility in a pragmatic piloting process of value co-creation between stakeholders and sustainable impact improvement thanks to pioneering incentive and sharing systems. In fact, the implementation of monetary innovation aimed at motivating responsible behaviour within a territory and a community becomes essential for tomorrow leaders, policy-makers and decision-makers. Complementary and virtual currency systems are a strategic, management and economic tool that can help a network of organization, and thus an organization, for its decision support, impact improvement, and extra-financial cost-benefit analysis towards a sustainable development value co-creation. Thus, we need a formal methodology to demonstrate the interest of using complementary and virtual currency systems in such a perspective beyond the business to consumer loyalty program voucher, or in

store currency. Consequently, to prove that complementary and virtual currency systems, within a network of organizations, a cross-border territory and sustainable community of producers and consumers, activate wealth, stimulate exchange and improve economic, social and environmental impact for regional sustainable development, we need more applied research on monetary innovation to design a service concept for impact improvement in order to improve its implementation usability and credibility.

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