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Between territorial and virtual proximities. The digitization process of the French ecosystem of complementary local currencies

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Abstract (no longer than 200 words)

In less than 10 years, "complementary local currencies" have multiplied in France and have created a dynamic ecosystem. While almost all of them have developed with the introduction of paper money (notes), there is now a rapid shift towards digital tools, which for many analysts appears to be an essential factor in moving to a new stage in the development of these currencies.

In part one, the paper will discuss the challenges of this transition and the competitive/complementary relationships between local currencies and cryptocurrencies in the French context. The second part will study the strategies of actors to position themselves in the ongoing reconfiguration of the ecosystem. It will study the competition between digital solutions being adopted by complementary local currencies and consider the possibility of a new generation of local currencies in France through the emergence of FinTech players.

Keywords (3-5 keywords)

BLOCKCHAIN - COMPLEMENTARY LOCAL CURRENCY - CRYPTOCURRENCY -
DIGITIZATION - FRANCE

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1. Introduction

In less than ten years, the number of "complementary local currencies" has increased rapidly in France: there were 74 in circulation at the end of 2018 (Blanc, Lakócai, 2019) and their number is expected to reach 80 in September 2019 with the launch of new projects. There are different types of local currency (Blanc, 2011) and in this contribution, we limit the notion of local currency to those currencies that Jérôme Blanc (2018) describes as "fourth group" to differentiate them from other practices such as local exchange systems (LETS), time banks, etc... This development has been accelerated by their legal recognition by the law of July 2014 and also by the film *Demain (Tomorrow)* by Cyril Dion and Mélanie Laurent, released in 2015, which has generated many initiatives. All these currencies are on par with the European currency, the euro, and are secured by a deposit in euros - equivalent to the amount of the local currency issued - at a bank or financial institution. Created by the conversion of euros into local currencies, they are used as a means of payment by the members of the structure (generally an association) to pay their expenses to professional bodies (shops, companies, associations, local authorities, etc.) that accept them within a limited territory. Only professionals can convert these local currencies back into euros, usually with a commission of 2 to 5%.

These currencies have real convergences with regard to the targeted societal issues: all aim to promote local economic development by strengthening exchanges within a territory. While some of them are limited to this local development issue, most local currencies in France combine an approach in favor of ecological transition (notably through the development of short circuits) as well as a collective re-appropriation of the currency through citizen engagement (Fare, 2016). But they are also characterized by heterogeneity both in terms of their size (the equivalent of a few hundred or thousand euros for most of them¹, more than one million euros for the most important, the **eusko**) and in terms of their organizational methods (presence or absence of the gesellian regular depreciation of face-value, permanent employees or exclusive commitment of volunteers, support or not by local authorities, etc.).

Despite these differences, we can speak of an ecosystem insofar as, apart from a few currencies carried by commercial or market structures, there is a community of values and practices that bring these currencies together, sharing a strong institutional proximity (Kirat, Lung, 1999). Beyond the legal framework (July 2014 law), they are being implemented according to methods suggested by numerous books on local currencies proposed by several publishers (notably Yves Michel Editions) provide advice and best practices for setting up a local currency. But the main source of information remains the websites

¹ The modal amount of the currency in circulation would be around 13,000 euros in 2018 (source: Blanc, Lakócai, 2019)

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of local currency networks. In France, there are two networks: the SOL movement² and the network of complementary local and citizen currencies (MLCC)³, which thus play a role as prescribers of standards at the various stages of the implementation of these currencies. Federated by these networks but also within the framework of multiple bilateral relations, local currencies exchange on their respective practices, which encourages the diffusion of innovations introduced by some of them and the transmission of the skills developed by the oldest ones.

Our hypothesis is that this ecosystem of local currencies that has been built up in France since 2010 (Blanc, Fare, 2018) is being reconfigured by the shift to digitization. This hypothesis that we will develop is based on studies conducted on several local currencies, mainly in Nouvelle-Aquitaine region, the collection of information on the websites of local currencies and local currency networks as well as interviews conducted in the region and in France with several actors offering digital solutions.

In the first part, the aim is to clarify the challenges of digitization by analyzing how, beyond the often postulated opposition between digital and local currencies, there are forms of complementarities between the local citizen currencies approach and digital tools. The second part analyses the strategies of actors to position themselves in the ongoing reconfiguration of the ecosystem with this digitization process.

1. Digitization: between opposition and complementarity

The shift from a set of paper-based local currencies (notes) to digital payment is bringing about profound transformations. It is therefore important to specify the stakes before relativizing the oppositions often postulated on a technological basis (blockchain).

1.1 The challenges of local currencies digitization

While almost all of them have developed with the introduction of paper money (notes) only, there is now a rapid shift in local currencies in France towards the digital form initiated by some precursors (**sonantes** and **eusko**). For many analysts, this shift to digital appears to be an essential factor in these currencies spreading (Martin, 2018) and several local currencies have obtained financial support from local authorities (municipalities, communities of municipalities, departments or regions) to finance the development of their digital version. But it could lead to the fragmentation of this ecosystem.

Of course, digital technologies are not new and are part of the ecosystem in various forms. Before the transition to digital local currency (payment by electronic card or by smartphone), associations carrying a

² <http://www.sol-reseau.org/>

³ <http://monnaie-locale-complementaire-citoyenne.net/>

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local currency used computer applications for their back office operations (management of members, exchange offices, accounts, etc.) with basic applications (at least the use of spreadsheets) or the acquisition of standard software (including the tools offered by Cyclos). They also do so in terms of communication with the animation of websites (often including a map of professionals accepting the local currency) or a Facebook page. They also manage certain financial operations with alternative dot-com (transfer management, participatory financing by Helloasso, Ulule or Jadopteurprojet.com). All these dimensions participate to the structuring of the ecosystem. What is "disruptive" is the transition from paper (notes) to digital money for individual users of local currency, including the shift to smartphone payment, because this transition implies a "change in culture".

First of all, this shift may have sparked heated internal debates on the values associated with the local currency symbolized by the notes. The choice of the images that make up the notes was often the subject of an important collective discussion during the emergence of the local currency. It is therefore a sign of affirmation of values and of recognition when used in shops. On the other hand, the use of a mobile phone or smartphone raises fears that the payment process in complementary local currencies will become commonplace.

Secondly, the digitization implies a change of dimension to trigger the increasing adoption returns (Arthur, 1989) of the local currency. For local currencies, we are well in a positive feedback loop: the more professionals accept payment in local currency, the more individuals (and professionals for inter-company payments) have opportunities to use this currency; conversely, the more people use local currency, the more interesting it is for a professional to accept payment in local currency to attract this clientele. However, local currencies have often stumbled in their development on the limits of the use of the only paper currency that predominates (Blanc, Fare, 2018). The choice of digital for local currencies is a trade-off between the ethical values defended by the payment community, and the transaction costs related to the use of digital money compared to paper money. The introduction of a digital version, in addition to maintaining notes in most cases, is justified by the need to move to a broader spreading stage by reducing certain transaction costs (time and travel of volunteers to make changes) or encouraging new people or businesses to enter the network. Digital payment, whether by credit card or smartphone, is now tending to predominate, while cash payment is declining, particularly in France, which uses relatively less paper money than its European partners (Esselink, Hernandez, 2017): local currencies can hardly escape digitization.

Finally, the shift to digital is an opportunity for the emergence of new players seeking to position themselves in the local currency ecosystem, what we will develop in the second part. But first it is necessary to mention the debate on the role of cryptocurrencies in this context.

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1.2 Virtual currency *versus* territorial currency

The debates on the dynamics of digitization of alternative currencies initially focused on the opposition between local currencies and cryptocurrencies. If these two types of currencies have in common the project to create areas for the circulation of money outside the financial system, they would be in radical opposition on three aspects: (1) the ethical basis with a rather solidarity and ecological approach for local currencies where cryptocurrencies promote a libertarian ideology; (2) the search for the connection between citizens by local currencies (territorial proximity) versus the ephemeral virtual relationship for the latter (virtual proximity); (3) the size of the area for currency circulation restricted to a local territory, unlike an approach in the global space allowed by the Internet. In a way, while cryptocurrencies would bring all the ingredients of ("pure") market exchange as economists imagine it, local currencies rely more on the re-embedding of exchange in social relations.

This opposition is largely due to the discussion of the **bitcoin** example alone as a cryptocurrency. However, there are several hundred different cryptocurrencies. Many "social and solidarity" cryptocurrencies have since developed, such as **faircoin**, which share the values of local currencies (citizen engagement, social solidarity, ecological transition) while circulating over a wider geographical area. They can be perceived as competing with local currencies on certain dimensions, with a broader development perspective and based on other foundations of trust necessary for the circulation of the currency (Aglietta, Orléan, 2002).

The paradoxical case of the **ripple** underlines the ambiguity that it can exist between cryptocurrencies (or more generally digital currencies) and local currencies. It is a protocol that is now used for cross-border funds transfers between major financial institutions, and has its own cryptology, the XRP. This one, then called Ripplepay, was initially a project coded by Ryan Fugger to map local exchange systems and create local currencies, based on trust between actors and their relationship⁴. Far from challenging the banking system, it has recovered the ripple, which has become a blockchain-based service used by major banks.

But we can also find examples of local cryptocurrency systems that aim to go beyond the framework of virtual encounters to encourage the animation of a territory through meetings between citizens. Three examples illustrate this in France.

- The experience of the local currency in Mayenne illustrates this type of approach: initially envisaged

⁴ <https://classic.ripplepay.com/about/>

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as a complementary local currency, the **sou**⁵, the collective finally opted for a cryptocurrency, the June - based on Dunitier - qualified as "free currency" which aims at the distribution of a basic income (Laborde, 2011). The local association tries to animate the Mayenne territory as a local currency would do. The values held by this group are identical to those of local citizen currencies.

- On the other hand, at the beginning of 2019, a local currency appeared in Corsica that explicitly claims to be a "local cryptocurrency" but did not subscribe to these societal values by positioning itself solely on the challenge of local development: the **corsicoin**. A few weeks after its launch, this currency announced on its website on 17 July 2019⁶: 3154 registered users having downloaded the application, 127 shops and 37 associations for a converted amount of 41,000 euros. This would place it in the group of solid complementary local currencies (the **sol violette**), just behind the **eusko** in the ranking established by Blanc and Lakócai (2019). A blistering start.

- Finally, the third case is that of a local currency that fully integrates the societal issues (ecological transition, citizen appropriation of the currency) that the MLCC network carries. **Léman** is a local currency that is fairly firmly established in French-speaking Switzerland and neighbouring French departments (Haute-Savoie and Ain). It has embarked on a move towards digital technology by using blockchain technology to strengthen the security of local currency payments, particularly in business-to-business (B2B) exchanges, or by proposing to offer new functionalities to local currencies.

At the international level, various examples such as **monedapar** in Argentina⁷ illustrate the possibility of using blockchain technology for local currencies (Friis, Glaser, 2018). Digital technologies make it possible to maintain core values such as the regular depreciation of the face-value of money (*stamped* or *free money* proposed by Silvio Gesell in 1916, cf. Blanc, 1998), to which several complementary local currencies are attached. They could even double the temporal depreciation with a spatial depreciation by introducing a geolocalized system (Tichit, Lafourcade, Mazenod, 2018). But in the French case, this technology does not seem to be among the most likely in the coming years given the irreversible effects of the trajectories undertaken (in the case of the eusko, see Pinos, 2019).

⁵ <https://www.le-sou.org/>

⁶ <https://corsicoin.com/>

⁷ <https://www.monedapar.com.ar/>

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2. The strategies of the actors in the digitization process

The diffusion of digital technologies makes it possible to amplify the dynamics of increasing adoption returns that is already at the heart of the development of local currencies. The shift to digital money opens up new perspectives, but it is also accompanied by the characteristics of competition between different technological standards: irreversibilities, reconversion costs and the impact of small events (David, 1989), which justifies paying particular attention to the strategies of the actors in this context (Shapiro, Varian, 1998). We will first specify how existing local currencies in France manage the shift to digital by sometimes soliciting other actors before discussing the possibility of the emergence of a new generation of local currency in France following the irruption of new actors in the landscape.

2.1 Digitization solutions offered to local currencies in France

The survey carried out on the digital shift of local currencies in France focuses mainly on currencies that have developed on paper money (notes) and complete their offer by introducing a digital version, what is the most frequent case⁸. We are in a rather classic situation of competition between several technologies for this digital switchover.

Table 1 - The main integrated solutions available for the transition to e-money

	Endogeneous solutions	National or international solutions
Without blockchain	Kohinos (e-Doume)	Cyclos (Cylaos – SoMoney)
With blockchain	Biletujo (e-Léman)	Monkey Money

Source: authors

A first solution is proposed by Cyclos⁹, a project of the Social Trade Organization, an important player in the social economy in the Netherlands, which offers multiple digital solutions in alternative finance (micro-finance structures, local exchange trading systems, time banks, barter, etc.). For several years, Cyclos offered free software that allowed local currency associations to manage a relatively complex part of their operations. Several of them have thus adopted this solution at a reduced cost, which has enabled it to be widely used in the local currency community in France: around ten complementary currencies have adopted the back-office solution, among the most important ones (abeille, eusko, gonette, rollon, sol-violette, sonantes, etc.) and a framework agreement has been concluded with the SOL movement. Internationally, Cyclos is also widely distributed, particularly in the most emblematic local currencies

⁸ Only two local currencies are exclusively digital in France: the **trèfle** in the Dordogne (Périgueux) and **corsicoin**.

⁹ <https://www.cyclos.org/>

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such as Bristol Pound, Las Palmas and Sardex. Since version 4 of the application, it is a proprietary software that offers a solution for the digitization of local currencies.

The Cyclos solution in France is relayed in France by two players: the company Cylaos ICT and the Crédit Municipal de Nantes (SoMoney application) which are not in competition but rather in partnership. Cylaos ICT thus encourages its clients to rely on a financial institution for legal security. The French company Cylaos ICT¹⁰ offers technical and legal support to local currencies to implement this solution and offer this new service to their members in French-speaking countries (including Belgium, Quebec, Africa), what interests several currencies in France. For example, the **sol-violette** in Toulouse, the **gonette** in Lyon and the **abeille** in Lot-et-Garonne - which are among the oldest and most important local currencies in France - should offer a digital version before the end of 2019. As for SoMoney¹¹, it is the only solution (front office) supported by a financial institution in France, Crédit Municipal de Nantes. It is based on Crédit Municipal's involvement in the development of the local currency, the **sonantes** and has found another relay with the **rollon** in Normandy (as well as for the currency of Montreal, Canada, the **flot** launched in March 2018). The fact that **sonantes** and **rollon** have been ambitious projects led by local authorities probably explains this support from a financial institution. Such a support indicates the preference of local elected officials to limit the risks associated with associative structures and these elected officials sometimes prescribe this solution to the detriment of other proposals.

A second solution is proposed by a financial start-up, Monkey Money¹². This young FinTech company located in Montreuil near Paris was created in 2017 exclusively to offer digital solutions integrated for local currencies. It is developing an application using a private blockchain with several offers (service levels): a first block (Backoffice) manages members and counters; a second block (Digital Community) adds a layer that essentially concerns communication (including mapping); finally the most complete package (100% numeric) includes digital payment. In addition, the tools are supported and maintained. The pricing depends on the level of services chosen and the size of the local currency (number of private and professional members and volume of activity for the last offer). The test phase has been completed and this solution is being installed in at least four local currencies¹³: **galais** (Ploërmel) and **galleco** (Rennes) in Brittany, **pêche** in Paris and **laurentian** in Quebec (Canada).

Finally, the third type of solution is endogenous because it is an application developed by programmers,

¹⁰ <https://www.cylaos.com/>

¹¹ <https://creditmunicipal-nantes.fr/somoney-plateforme-barter-monnaie-locale/>

¹² <https://www.monkeymoney.fr/>

¹³ Source: Monkey Money website. Last accessed: July 18, 2019.

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often unpaid volunteers from local currencies. There have been attempts, using the SOL or MLCC networks, to propose a common solution for local currencies in France, such as the Moloco project¹⁴, which aimed to collectively develop free software that could be immediately shared. But this perspective could not be achieved and several local currencies developed their own solutions, sometimes using Cyclos applications. This is the case of the Basque Country (**eusko**), which has the particularity of offering a payment card (Christy, et alii, 2019), while the other solutions are based on the use of mobile phones by sending an SMS or using a QR code. This is also the case for the e-**cairn** in Grenoble. Like the **trèfle** (whose solution is not very suitable for other currencies because it is exclusively an electronic currency and therefore does not integrate the complex management of exchange offices), these currencies offer to share their solution with others. This effort to share effort was particularly driven by two local currencies: the **léman** (French-speaking Switzerland and neighbouring departments) and the **doume** (Clermont-Ferrand).

With its Biletujo project¹⁵, the **léman** has been particularly active in offering to share its solution. But delays in the development of the project and the doubts of some people about the choice of a blockchain technology¹⁶ have finally poured cold water on this approach, which does not seem to be materializing among local currencies in France. The ComChain cooperative project, which aimed to develop a blockchain in the service of the commons, does not seem to be succeeding. On the other hand, the solution proposed by the **doume** has a certain echo. The failure of the Moloco project initiated by the Clermont-Ferrand currency computer scientist Stephan Gelberger did not discourage him. A strong advocate of free software, he developed the electronic version of the doume (e-doume) based on a detailed knowledge of the needs of associations managing local currencies. Digital money is not at the heart of the project, but a plus (a bit like in the Cyclos project). This Kohinos solution is offered free or at a moderate cost to other complementary currencies and several of them are committed to it: it is being installed in four other currencies and others are being contacted. The project is technically strengthened with the creation of a developer community, composed of 10 people in July 2019, on the Kohinos project.

¹⁴ <http://monnaie-locale-complementaire-citoyenne.net/le-moloco-un-logiciel-open-source-pour-les-monnaies-locales/>

Last accessed: July, 19 2019

¹⁵ <https://forum.sol-reseau.org/t/documentation-biletujo-v2/128> Last accessed: July, 19 2019

¹⁶ Thus, the Tera eco-village project (<http://www.tera.coop/>) which was initially interested by Biletujo, abandoned it in favor of adopting the local complementary currency existing in Lot-et-Garonne, the **abeille**, whose it has accelerated its digitization with the support of Cylaos ICT.

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Even if exchanges take place between the different endogenous solutions, attempts to build a coordinated solution between the actors of the local currency ecosystem have failed in France. Currencies engage in a relatively disorderly manner in the digital shift by adopting multiple solutions, which may ultimately pose problems of compatibility between the different systems adopted. However, digital technologies offer opportunities for sharing solutions in local currency, or even for convertibility between them, possibilities that will be limited with a multiplicity of technological solutions adopted. Actors who were previously absent or marginal in the ecosystem are taking on a strategic role, as mastery of digital tools is a key step in the dynamics of these currencies. Two market solutions (those based on Cyclos and Monkey Money) seem to be the most widespread to date, while only Kohinos seems to be taking a place in the game, but among the least important currencies, whose associations cannot pay the price of market solutions. Given the effects of irreversibility, it will be difficult to go back.

The digitalization process implies a professionalization of the activity of the associations involved, requiring relatively advanced computer skills and a secure system to avoid any malfunction, which is not the same with paper money. This is the limit of associative unpaid volunteering: associations need to have internal resources (skills and availability of computer scientists), resources that must be sustained. The system cannot be held by a single person who can disengage at any time.

2.2 The FinTech at the origin of a new generation of local currencies?

But the transition to digital technology is also an opportunity to see the emergence of initiatives led by financial start-ups (FinTechs) that propose new forms of local currency. The solutions offered often exist internationally: they are essentially currencies rewarding ethical behaviour or more simply mutual credits (barter). But in France, these are innovations because their introduction is recent and their dissemination is made possible today with the digitization of exchanges.

On the one hand, there are digital currencies that are intended as incentive tools to promote ethical or ecological approaches such as the **dig** (“a digital tool of generosity based on a generosity coin”)¹⁷ or the **poi** that aims to “certify “the impact of our daily behaviors to bring the economy and its actors to a more local and resilient model”¹⁸.

- The Indigo cooperative thus proposes to download an application on AppStore or GooglePlay to

¹⁷ <https://indigo.world/en/>

¹⁸ <https://www.poi.network/en>

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connect with others in order to exchange goods and services or to help associations. In return, the user acquires **digos**, qualified as "social solidarity currency" that he can use to buy goods or services on the application.

- In the case of the **poi** (for Proof of Impact), initially called "good coin", it is a matter of creating, via a sidechain on the Ethereum blockchain and a number of smart contracts, an incentive for virtuous consumption behaviour at the local level. Its founders abandoned the initial project of offering a digital application to local currencies in favor of the development of a "utility token". The poi would like to rely on pre-existing communities such as local currencies, LETS or simply networks of traders, in order to stimulate them. But the first contacts made with representatives of certain local currencies (such as **miel** in Bordeaux or **eusko** in Bayonne) did not lead to a result due to differences between the business logic and the ethic values carried by the currencies.

On the other hand, actors are emerging in France who carry a mutual credit between companies (barter) that corresponds to a currency. While complementary local currencies such as ethical currencies target individuals, mutual credit is mainly oriented towards companies by allowing them to trade directly, bypassing the financial system and its costs (or credit restrictions) and improving companies' cash flow. This system has been widely used internationally for several decades in the case of WIR in Switzerland or more recently with the Sardex in Sicily (Italy). Until recently, mutual credit did not break through in France but, thanks to digital technology, it seems to have found a new dynamic with the establishment of foreign companies but also with the creation of French companies such as BarterFrance or BarterLink. A barter market is emerging in France. As with any sector characterized by increasing adoption returns, rapid growth in network size is a prerequisite for success and some companies have contacted local currencies to offer them to join their network. Taking up the approach initiated by Sardex (Amato, 2016), initially a B2B-oriented barter that became local currency (B2C), the aim is to accelerate the diffusion of the currency as the **link** for BarterLink to quickly take a favorable position in this fast-growing market. Other actors could appear in France in order to take advantage of this environment by proposing original solutions - based on public expenditure by local authorities - developed in the DigiPay4Growth project¹⁹.

These various initiatives suggest that the landscape of alternative currencies in France could quickly be enriched with new tools, complementing the categories established by Jérôme Blanc (2011).

¹⁹ European project coordinated by Cyclos, an omnipresent player in this digitization of local complementary currencies. Cf. <https://cordis.europa.eu/project/rcn/191828/factsheet/en>

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Conclusion

The digitization of complementary local currencies in France reveals a landscape undergoing profound restructuring in relation to the system that had gradually been put in place in the 2010's. In the end, the debate between local currencies and cryptocurrencies does not seem to be the main issue in the ongoing transformations. This debate masks the emergence of new players who can become partners to local currencies, facilitating their transition to digital, but also competitors offering alternatives to existing local currencies. The introduction of a market logic is likely to contaminate the local currency ecosystem by substituting an entrepreneurial approach to the detriment of the citizen values carried by these currencies. More generally, the digital transition, like the scaling up, probably implies professionalization and the need for ethical choices, which may prove to be as many difficulties for complementary local currencies that operate mainly through volunteer activists, but which, if outdated, may allow these currencies to develop more rapidly.

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