Revista de Administração Contemporânea
Journal of Contemporary Administration

ASSOCIAÇÃO NACIONAL DE PÓS-GRADUAÇÃO E PESQUISA EM ADMINISTRAÇÃO

e-ISSN: 1982-7849

Case for Teaching

Palmas to E-Dinheiro! Clapping the Digital Evolution of a Local Social Currency

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Palmas para o E-Dinheiro! A Evolução Digital de uma Moeda Social Local

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INTRODUCTION

Joaquim Melo was excited about the possibility of expanding the E-Dinheiro service and the financial inclusion of thousands of people all over Brazil when he received two pieces of unexpected and distressing news: the partner technology company had decided to withdraw itself from the project, and would do it within a week!

João Joaquim de Melo Neto Segundo, known to all as "Joaquim of the Palmas," is a social entrepreneur, community leader, and administrator of the Banco Palmas (Palmas Bank), a community bank created to support the development of the Conjunto Palmeira neighborhood in Fortaleza, state of Ceará, Brazil.

During decades of struggles and conquests, the community and the bank have promoted innumerable social innovations ranging from a local social currency and empowerment initiatives to the creation of the E-Dinheiro, a digital platform operating electronic money, mobile payment services, and know-how transfer to other community banks.

The Banco Palmas' most recent technological initiative had been bringing in positive results and its future looked promising. Joaquim was negotiating with the Brazilian Community Banks Network to propagate the local success to various other locations in the country and benefit many thousands of low-income people.

Before that could be achieved, however, new challenges arose and critical business decisions had to be made

JEL Code: A2, E42, E51.

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Cite as: Cernev, A. K., & Diniz, E. H. (2020). Palmas to e-dinheiro! Clapping the digital evolution of a local social currency. *Revista de Administração Contemporânea*, 24(5), 487-506. https://doi.org/10.1590/1982-7849rac2020190390

Received: November 25, 2019
Last version received: April 26, 2020
Accepted: April 27, 2020

THE ORIGINS OF PALMAS

It was the year 1973 and Brazil was experiencing the heady effects of the 'economic miracle'. A community of fishermen families, living for years on the beachfront, in the north of Fortaleza city, was being moved to another location. In the name of progress, the order was to clean up the north coast region to make way for the prosperous region it has become today, Meireles Beach and its environs, a highly developed tourism destination (recently attributed an HDI of 0.95, similar to that of Norway, one of the most developed countries in Europe). In that way, one of the city's most luxurious neighborhoods emerged.

At the same time, one of the city's poorest localities emerged: the Conjunto Palmeira, at the extreme southern end of the municipality, a region of scrub, mud, and wild palm trees with no infrastructure and more than 15 km away from the residents' former seaside abode, located after the biggest waste dumps of the city. The term 'Conjunto' (housing scheme) was just an empty word.

Around 1,500 families were dumped there like rubbish to be forgotten and neglected by all the social progress. Not only had they lost all their assets and their livelihood, but also their very self-esteem, self-determination, and dignity had been swept away. They had suddenly been placed in highly precarious living conditions with no housing (they had to build their own residences by joint community efforts), no water supply, no sanitation, no electricity, no public transport, and no health or education services. Figure 1 illustrates the precarious living conditions in the Conjunto Palmeira in the 1970s.

Faced with huge difficulties, individuals began to support one another in groups and the groups supported one another in a community that sought to obtain all that had been taken away from them. Within a few years, the community had founded the Conjunto Palmeira Residents Association (Associação dos Moradores do Conjunto Palmeira — Asmoconp) and become stronger, promoting improvements in the neighborhood and a sense of community. In their own words, "God made the world but we made the Conjunto Palmeira," a way of denoting how little the public authorities or any other organization had contributed to that development.

However, the achieved prosperity had a side effect: gentrification. With the improvements such as electricity and piped water supply, the cost of living rose and it became prohibitive for many of the residents to remain there.

So they asked themselves: "Why are we so economically poor when we have been capable of building up so much in the neighborhood?" The answer was always the same: "We are poor because we have no money." Joaquim remembers thinking how that answer was so obvious that it could not be correct. Concern about the situation and the presence of a community spirit led to the emergence of initiatives designed to keep the population from moving away from Conjunto Palmeira and ensure the neighborhood's continued development. It could not be that, once again, 'progress' should expel them from their homes.

In 1997, the first Map of Consumption of the Conjunto Palmeira was made and it revealed two important pieces of information; over R$ 1.2 million a month were consumed in the community but only 20% of that circulated in the neighborhood; the other 80% were spent in other places. Joaquim remarks that "divided by the 25 thousand residents at that time, that would not amount to much individually, but collectively it had valuable economic power." At that moment, the residents realized what one of the main factors of local impoverishment was: the community's low level of local consumption led to a drain on its savings and consequently on its capacity to generate employment and income.

So the Banco Palmas emerged, a community development bank (CDB) of and for the residents of the neighborhood, designed to offer low-cost loans mainly focused on investments in production and alleviating poverty. The Palmas initiative also emerged, a social currency with local circulation only within the Conjunto Palmeira.

PALMAS INSPIRES ACTION

The Banco Palmas was created in January 1998 with an initial capital of just R$ 2.000,00 (two thousand Brazilian Reais) and a territorial development model based on local production and consumption, which at that time was an unprecedented initiative in Brazil. Later the name was changed to Instituto Palmas (Palmas Institute) because the Brazilian Central Bank (Banco Central do Brasil [BACEN]) understood that it was an initiative that could not use the denomination 'bank'. In practice, it performed as a Civil Society Organization of Social Interest (Organização da Sociedade Civil de Interesse Público — Oscip) in the

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field of microfinance. In the years that followed, it implemented financial products and services focused on low-income population as well as various other neighborhood development initiatives.

Local currency

The Palmas local currency was launched in 2000 in the form of paper notes with a parity of one to one against the Real, the Brazilian national currency. Based on the conclusions drawn from the consumption mapping, the idea was to reduce the financial amount spent in other places and endeavor to concentrate spending within the Conjunto Palmeira; in other words, keep the collective wealth in the neighborhood itself. To achieve that it was necessary to overcome various challenges such as getting the residents to adopt the new currency, ensuring the effective use and circulation of the currency, and investing in production for local consumption. Figure 2 shows images of the physical currency Palmas.

On the one hand, the community bank would grant pro-production loans to small local merchants and producers (productive microcredit) and finance a part of the neighborhood's consumption. On the other, together with the Residents Association, it would seek to teach new skills to local entrepreneurs. With support from the local Sebrae (Brazilian Support Service for Small and Micro-Companies), several courses were given such as how to produce cleaning and hygiene products, and training courses in hotel services and sewing.

Studies carried out in the period from 1997 to 2009 registered a complete inversion of consumption curve in the neighborhood: the mere 20% that families formerly purchased in the neighborhood went up to 93%, so that spending in other places was reduced to just 7%. In 2011 the wealth that circulated in the neighborhood was to the order of R$ 68 million.

As Joaquim explained, "the Banco Palmas contributed towards promoting a sense of community and the principles of a solidarity economy, salvaging the feelings of self-esteem and of belonging to the neighborhood."

Expansion and process

The success of the Banco Palmas and many of its initiatives and social impacts have been widely acknowledged wherever it operates (See Appendix 1), but more than being just an inspiration for other places, the Palmas methodology needs to be shared. The Instituto Palmas has already transferred the know-how, the model, and the technology to dozens of community banks all over Brazil; those efforts, however, could be boosted even more. In 2007 the Brazilian Community Banks Network (Rede Brasileira de Bancos Comunitários — Rede) was formalized, with similar objectives to those of the Institute, namely: promote and disseminate a solidarity economy, share knowledge, and technology, and coordinate the search for financial resources for its loans, giving support to local leaders in the creation and management of new community banks. Furthermore, on the subject of collective initiatives, the year 2014 saw the creation of the Institute and Bank of the Periphery (Instituto e o Banco da Periferia) that brought together 40 community banks in the city of Fortaleza, Ceará, and, in 2015, the National Communities Bank (Banco Nacional das Comunidades) was created. According to the Palmas Institute, at the beginning of 2019, "from the Amazon River islands to the poor outskirts of cities in Rio Grande do Sul, embracing indigenous, agricultural settlement, fishermen and quilombola villages and urban and rural territories alike" there were 117 community development banks present in 20 Brazilian states and 80 municipalities.

Not everyone was applauding, however. At the beginning of the year 2000, on the initiative of the Brazilian Central Bank (Bacen), the Palmas Bank and Joaquim Melo himself were being formally prosecuted for what was supposedly 'a crime against the Brazilian State' insofar as they had created a currency parallel to the country's official money (Real) and conducted credit operations without being formally constituted as bank integrated to the national financial system. In 2003, however, the courts granted the Banco Palmas the right to continue its work and today the Bacen considers it an important and inspiring financial inclusion initiative focused on low-income populations.

The first mobile project

In 2010, inspired by financial inclusion initiatives in other countries, especially the M-Pesa in Kenya, the Brazilian Ministry of Social Development and the Fight against Hunger (MDS) intended to conduct a pilot project to pay of the Bolsa Família benefit via cell phone. If the pilot were successful in its bid to serve 14.4 million beneficiary families, then it could become the biggest example of mobile payment in the world! However, fearing that such a

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scheme could interfere with the emergence of other mobile payment services in the country, insofar as it could potentially create 'corporate silos', that is, services that were hardly interoperable, the Bacen formally recommended that the project be suspended.

Towards the end of 2011, without any participation or stimulus on the part of the MDS, but aiming to promote a pilot project similarly focused on low-income families and Bolsa Família beneficiaries, the Government Savings Bank (Caixa Econômica Federal [CEF]) headed a joint initiative together with Mastercard, Redecard, Vivo, and Banco Palmas, which was called 'Mastercard Mobile', a sophisticated name that achieved very little adherence on part of its target audience, the residents of Conjunto Palmeira. Despite the distribution of 1,400 cell phone chips (SIM cards) to service users free of charge, the project did not prosper, mainly because of the low level of service use. In mid-2013, it was abandoned without any formal communication among the parties.

So once more the Banco Palmas was left without a technological alternative for improving its financial services. Palmas users and local merchants alike were frustrated.

Some months later, personnel from the MDS informally suggested that the bank could approach a technology company in Brasília called MoneyClip, which was developing mobile payment apps. Joaquim considered that there would be greater chance of success for a new initiative involving the digitalization of the local currency, because Banco Palmas would have more control and a greater protagonist role in the venture, leaving the technological aspect in the hands of the partner company. That was how the Palmas E-Dinheiro came into being.

PALMAS E-DINHEIRO

On April 9, 2015 the Banco Palmas launched its mobile payment service Palmas E-Dinheiro (local pronunciation of E-Dinheiro makes it sound like 'It's Money'). It was offered in a revenue-sharing partnership with MoneyClip, whereby revenue would be divided equally between the partners. Furthermore, in consonance with the terms of Law 12.865/2013, which governs such institutions and payment arrangements, that new mobile service also had the characteristics of electronic money, so that it was in fact a hybrid model of mobile payments and mobile money.

Objectives

The main objectives of E-Dinheiro were: to digitalize the Palmas which still circulated as a paper currency, to improve the community bank's financial services offer and to foster greater financial inclusion in the region. That would be possible because, by adopting a digital platform, the bank would be able to offer services such as paying bills, electronic money transfers (including person to person), statements and balances, airtime mobile phone purchases, directed communication, and service-use graphs, the last two being valuable for use in financial education actions. In addition, with data gathered by the platform, the bank could get to know each user better and that would assist the loan concession process and enable better management of the currency in circulation.

More than that: for many people the digital account they opened with the E-Dinheiro app was still the only financial account they had. In practice, the primary objective of the Palmas paper currency had already been achieved, namely, the construction of a sense of community and solidarity among the neighborhood's residents. In Joaquim's words, "the elimination of the paper currency does not change the residents' engagement or pride in any way."

At that time, the Conjunto Palmeira already presented a reasonable degree of local development, but even so its HDI was very low, a mere 0.118 (if it were a country, that would be equivalent to 1/3 of the HDI of the poorest African country), thus revealing the huge socioeconomic inequality that existed in the municipality and showing how much still needed to be done in the neighborhood. Figure 3 illustrates the stage of development of the Conjunto Palmeira around the year 2014.

Characteristics and technology

The E-Dinheiro is a digital platform with two technological versions available for its users: an app for smartphones that requires data networks or Wi-Fi connections; and via SMS and USSD commands directly in the cell phones, suitable for even the very simple low-end ones that were most used in the neighborhood. The E-Dinheiro app for Android and IOS included payment services (also QR code for offline operations), transfers, debt reminders, statements, airtime phone purchase, deposits, and

withdrawals (these last two in the bank only) as set out in Figure 4. So, this applicative made it possible to access services not available to the low-end cell phone users who could only access information on their account balance and make transfers. Furthermore, the users' experience with the app was significantly better for checking balances and making transfers than with the message exchanging system (SMS and USSD). In addition to being an instrument for making payments, the E-Dinheiro is also a digital current account linked to the user's telephone number in the same way that it is linked to WhatsApp. As previously mentioned, for many low-income people, that digital account via an app for smartphone was probably their first and only experience of having and using a financial account.

Costs

There is no cost for clients when using the E-Dinheiro, not even when it is used to pay people (person to person). For merchants, there is a charge of 2% over the amount of the transaction with an extra 1% when there are money withdrawals or transfers to a traditional bank account. It must be borne in mind that this technological model dispenses the need for point of sale (POS) machines to register the transactions. Thus, there are no additional costs associated to renting the machine used with magnetic cards. Even when the fee was the maximum of 3%, it was still very competitive compared with the high charges usually made in the Brazilian cards market.

However, there were some other indirect costs that were a serious challenge to the adoption and use of E-Dinheiro by the local population and merchants: the price of a smartphone, even the very simplest model, and again the charges on using the mobile data services. One resident put it this way: "I don't want a second-class service using messages on an old-style cell phone, but the costs of the smartphone and data are very expensive."

Adoption and use

To get around the problem of high cost of the device and stimulate the use of E-Dinheiro, the Banco Palmas began to offer financing for the acquisition of less expensive smartphones, with payment diluted in many small installments and low interest rates. Those smartphones were much more than a consumer's consumption dream; they had an important role to play in the community's digital and financial inclusion.

In an effort to reduce other costs, like the mobile companies' charges for the use of data services, the bank activated Wi-Fi networks in various hotspots in the Conjunto Palmeira to offer free of charge broadband access to the internet. The service was called PalmasNet and publicized as "Awesome Wi-Fi," enabling families to enjoy a considerable reduction in their spending on telecommunication as it became easy to replace the paid services by the free ones such as WhatsApp, Facebook, Messenger, and Skype. Not only did E-Dinheiro avoid increasing its users' overall costs, it actually managed to reduce them.

To stimulate the adoption by local merchants and the effective use of the services by the community members, the bank promoted a launch event during which more than 12 thousand transactions were made. Furthermore, it maintains a team of employees in the neighborhood to publicize the system, provide customer service, and support and process the acquiring of more merchants, including informal micro-entrepreneurs with activities like selling sugar cane juice and other street vending activities. No other digital payment service at that time offered services to that segment of small and informal entrepreneurs.

Results obtained

On the day of the E-Dinheiro launch in April 2015, when the project was still at the pilot stage, the potential clients showed enormous curiosity, there were around 200 adherences to the service and more than 12,000 transactions were made. Many of those transactions were simply tests that the residents made among themselves (P2P), given that there was no cost in transactions between users. In December 2016, when the expansion of E-Dinheiro to other localities began, 2,477 people were already using the platform in 166 accredited commercial entities, with a volume of transactions that totaled R$ 10.5 million. Nevertheless, the Banco Palmas knew that, being a more complicated mean of payment than simple paper currency, and involving technology and money, the E-Dinheiro still faced certain restrictions to its wider adoption. On the other hand, it had great potential for growth.

Joaquim and other community leaders felt that the success of the Palmas E-Dinheiro needed to be replicated to other community banks in Brazil, more than a hundred at that time, and, who knows, contribute to the emergence of other banks.

E-DINHEIRO FOR ALL

The E-Dinheiro ought to become a technological platform not just of bits and bytes but also of know-how and infrastructure that would make it possible to open more community banks in Brazil. Joaquim declared that "instead of having to establish a headquarters, and hire and train employees, print out social money and so on, this digital platform makes it possible for a single administrator with a micro-computer to start to operate a bank with community money." Moreover, E-Dinheiro could serve the needs of other locations and reach out to many more people via Rede and, in the future, via new community banks that might come into existence; all that aiming to promote far broader financial inclusion in the country.

With a collective decision-making process, an assembly of members of Rede decided that the E-Dinheiro would start to be implanted in more communities. That idea was soon transformed into action and, in 2016, more than twenty community banks had adopted the platform in their territories. Among them were: the Banco Itapoã and Banco Estrutural (Brasília/DF), Banco Paju (Maracanaú/CE), Banco Bem (Vitória/ES), Instituto Tupinambá (Itaú de Minas/MG), Banco Passarela and Banco Viver (Serra/ES), Banco Liberdade (Belo Horizonte/MG), Banco União Sampaio (São Paulo/SP), and, more recently, the Banco Mumbuca (Maricá/RJ), which already had a social currency implemented using magnetic cards.

THE TECHNOLOGY BREAK OFF

On October 3, 2017, Joaquim was unexpectedly called to attend a meeting at the MoneyClip head office. "We are unhappy with the project's financial results, Joaquim" said in a straight away José, one of the partners. "The E-Dinheiro has been operating for months and we are nowhere near achieving the expected revenue for the period."

"But that is how it works," said Joaquim, trying to explain. "Our public is quick to test but takes a while before they want to use the service every day. Only in that way does more money come in. We cannot force anyone."

"Our technological operation is very costly now and we cannot go on operating in the red," José replied. "In fact, the partners have already made a decision: we are going step out from the E-Dinheiro project."

"Let's just wait a little longer. With the festive season at the end of the year, the transactions are sure to increase," argued Joaquim.

The company's partners were not convinced and after a few minutes of dialogue, José emphatically stated: "We can't wait any longer. Seven days from now we are going to withdraw our support."

Joaquim knew very well that without the support for the app and system, the continuance of the service was doomed. Worse than that, the digital platform could be deactivated because it functioned on equipment and services contracted by MoneyClip.

Feeling entirely at a loss, Joaquim shared the bad news with Alex, his right-hand-man in many of the Banco Palmas initiatives.

"We cannot continue the project on our own" said Alex. "We don't have the necessary technical skills, at least not at the moment. But even if we did manage to put a team together fast, the control and the ownership of the technology belong to MoneyClip, and I am sure they would charge us for the use of their technology."

"That's right, Alex, in fact they already have set a price for the technological platform: R$ 800,000!"

Well aware that the Banco Palmas did not have that financial resource available in the short term, Joaquim wondered whether that was not the end of the E-Dinheiro after all.

THE SEARCH FOR ALTERNATIVES

In the days that followed the announcement, Joaquim, Alex, and the members of the Banco Palmas team evaluated alternatives aiming to ensure the survival of E-Dinheiro. After innumerable consultations with partners and experts, they met again because a decision had to be made immediately. There were a few options on the table.

Acquire the technology company

Alex put forward a very simple idea: "One way we could appropriate the technology and maintain the team of technical employees would be to purchase the partner company itself! That is not so uncommon in the technology market."

"For that we would need a lot of money right away" put in Joaquim, "and we would still need to guarantee that the technical staff would stay on in the company. I don't know if they would be willing to leave Brasília and move to Fortaleza; or would we have

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to open a branch of the bank in Brasília?" he queried. The participants considered that the risk associated to that option were moderate, given that the know-how would be preserved in the purchased company, but of that there was no guarantee. Furthermore, given that MoneyClip offered other services to the market, not all of which had to do with the low-income clientele, then such an action would imply that the Banco Palmas would change its core business.

Acquire the technology alone and take on the E-Dinheiro project without the partner

Instead of buying the partner company, which would involve a huge financial investment, would have to be done right away, and would also involve a profound change in the Banco Palmas core business, an alternative would be to purchase the technology alone, thereby guaranteeing greater control over the project.

"That would include obtaining the user license and/or the ownership of the software and its source codes, purchasing equipment, and contracting new technological services such as cloud computing" Alex explained. "Relatively speaking it would be much cheaper; however, we would still have the problem of our lack of technical expertise like MoneyClip to provide continuity of E-Dinheiro development and support for it."

Not only would they have to find financial resources in a short term, but they would also have to acquire those technological skills very quickly.

Subsidizing MoneyClip for it to remain in the project

"Extreme situations call for extreme measures," Alex remarked before presenting the third alternative to the group. "One of the main reasons MoneyClip is quitting the project is that the financial returns fall short of their expectations. So perhaps we could transfer more money to them to meet their short-term expectation."

"But that would not be fairly balanced for us" put in Joaquim. "That would mean that the company was merely another contracted entity and not a technological partner of the venture, running the same risks as us in the hopes of better returns."

All of them knew that the immediate risk was low even though it meant a new input of capital for Banco Palmas without expanding its control over the project. On the other hand, it would mean putting off the breakeven even farther, jeopardizing the project's financial sustainability and future investments — time and money —, but time was running out for E-Dinheiro.

Replace the current E-Dinheiro technology with blockchain

During the period when the Banco Palmas team was examining alternatives, a different one emerged: "Why not take advantage of the unforeseen situation to rebuild the project from scratch, but this time, adopting blockchain? It's a highly promising technology for digital currencies," suggested Mariana, one of the Bank's staff. She had been talking to several of the partners and experts who had told her how blockchain technology was the base for many innovative crypto-assets and services, including crypto-currencies such as Bitcoin and Etherium. Furthermore, it was already being used in other countries as the structural technology of some cryptocurrencies with social objectives such as the Auroracoin (Iceland), Cadastral (Ghana), MonedaPar (Argentina), and the Tel-Aviv Shekel (Israel). Appendix 2 provides a brief description of blockchain technology and its applications.

The team soon realized that the reconstruction of the E-Dinheiro technological model would be a risky venture. Joaquim however considered that it could place the Banco Palmas in the vanguard of world financial services once more. The option would mean having to acquire new technological skills, restart the process of user adoption, obtain the accredited merchants' acquiescence with the change in technology, and conduct operations in an area that had yet to be regulated in Brazil.

The risks were high because all the actions to make it feasible were surrounded by uncertainty and at the very best they were medium to long term measures. On the other hand, the Palmas had already been involved with various organizations and research institutions and would be able to count on them to improve the conception of the new project and then proceed to its implantation. Furthermore, many technology and finance startups, the so-called fintechs, were already operating financial and payment services using blockchain, and they could be very interested in establishing a partnership that would enable both sides to expand their businesses.

Finalize the current E-Dinheiro project and adhere to another mobile payments service

All those options were on the table, including the idea of closing down altogether, given the contingencies of that moment. It was not something desirable,

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but neither was the sudden communication from MoneyClip that it was going to quit the partnership.

"What are we going to do if we can't make any of those alternatives viable in the short term?" asked Alex, causing an uncomfortable silence in the meeting.

"We have to think about the clients, both users and merchants," added Mariana. "If nothing else works, wouldn't it be the case that we should migrate to another mobile payments service?"

The team had studied the market and knew the existing options such as the PayPal services (USA) and WeChat (China), both with huge networks of clients and highly developed technology. In Brazil, the options included Mercado Pago (digital payment and wallet services of Mercado Livre platform) and PicPay (Banco Original's app, a new digital bank). Although those options would make it possible to continue to provide services to the Palmas clients, in all of them it was hardly likely that Banco Palmas would perform as a strategic partner in the business.

"E-Dinheiro is not just an app, it is also a strategy to disseminate community bank methodology," Joaquim reminded everyone. "Shouldn't we involve the community bank leaders in this discussion and decision?"

They all agreed with Joaquim, but there was another doubt left hanging in the air: would those community bank leaders be qualified to make decisions involving technology, investments, and project governance? In the end, it was Joaquim who would have to take responsibility for whatever was decided.

IT IS HARD TO DECIDE

Joaquim Melo was facing a difficult choice. All the alternatives they had analyzed in the preceding days had their pros and cons, their opportunities and risks for the project, and some of them were mutually incompatible. Eventually it could be possible to mix some of the actions that had been examined; in any event, it was necessary to make a clear and objective decision within the next few days.

MoneyClip had made it clear that it would no longer leave any of its staff dedicated to the project. To make the situation even tenser, some of the community bank leaders questioned the feasibility of the E-Dinheiro's continuity, putting the expansion of the project and its objective of financial inclusion at risk because, after all, they considered themselves partners insofar as they were platform users.

The decision had to be not only immediate, but also definitive!

Figure 1. Conjunto Palmeira in the 1970s.
Source: Instituto Palmas (2019).

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Figure 2. **Palmas currency.**
Source: Instituto Palmas (2019).

Figure 3. **Conjunto Palmeira in the period 2013-2015.**
Source: Instituto Palmas (2019).

Figure 4. **E-Dinheiro platform and functions of the app for smartphones.**
Source: https://edinheiro.net.br/ retrieved in April 1, 2020.

APPENDIX 1

AWARDS AND PARTNERSHIPS

In 2005, the Banco Palmas received the Bank of Brazil Foundation's Social Technology Award, an award designed to stimulate the dissemination of its methodology and the implantation of new community banks all over Brazil.

In 2008, it received the Millennium Development Goals Award — Brazil, an award scheme coordinated by the Secretary-General of the Presidency of the Republic in a partnership arrangement with the United Nations Development Program (UNDP).

In 2008, the Banco Palmas received again the Fineo Social Technology Awards in the "National" category and in 2011 the Brazilian Central Bank Bacen published the Technical Note PGBC 387/2011, formally recognizing that social currencies like the Palmas were an important instrument for fostering financial inclusion of the very poor.

By 2019, there were various organizations and institutions researching and supporting Banco Palmas initiatives, among them: Sebrae (Brazilian Support Service for Small and Micro-Companies), Senaes (National Department for a Solidarity Economy), and some Brazilian universities (FGV-Eaesp, UCB, UFB, UFC, Ufrgs, Ufsc, UnB, USP, and others); and in other countries such as the Massachusetts Institute of Technology (USA), Columbia University (USA), HEC Montreal (Canada), University of Brussels (Belgium), and others.

BLOCKCHAIN TECHNOLOGY AND APPLICATIONS

Blockchain is an emerging technology that makes it possible to register data in a different way from that used by traditional means such as data servers and cloud computing.

Making use of sophisticated cryptographic resources, distributed ledger technology (DLT), and consensual protocols, the blockchain technology has some unique features that endow it with transparency, privacy and immutability (it is impossible to alter any data once it is been registered), perpetuity (the registrations can never be erased) and trustworthiness, and it is free from the need for intermediation (there is no central agent in the blockchain networks).

Despite being well-known in the academic and corporate worlds, in practice, blockchain technology is still merely incipient. According to technology consultants Gartner Inc., it is a technology destined to have a strong impact on business infrastructure and on the products and services offer to users. However, it will only achieve maturity, which is the stage when its applications are widely distributed in the market, in 5 to 10 years from the time this case was written.

There are various possible applications for blockchain, ranging from cryptocurrencies (like Bitcoin, Etherium, Ripple, Auroracoin, and MonedaPar) and tokens, which are representations of assets (like Tether, BNDES Token, and Moeda) to a variety of corporate services such as interbank transaction systems (R3/Corda), registrar-type authentication, and registration (OriginalMy) for bank, personal identification, electronic voting processes (Estonia's e-ID and I-Voting), asset tracking (DeBeers, for the diamond market), and marine logistics (TradeLens, from IBM & Maersk), among others.

Revista de Administração Contemporânea - RAC, v. 24, n. 5, art. 7, pp. 487-506, 2020 | doi.org/10.1590/1982-7849rac2020190390| e-ISSN 1982-7849 | rac.anpad.org.br

Teaching Notes

ABSTRACT

This teaching case addresses the digitization of the local social currency Palmas, issued since the beginning of the years 2000 as a paper currency by Banco Palmas, to a new hybrid model of mobile payments and mobile money, named E-Dinheiro. This is a social development and financial inclusion venture in Brazil, having already great national and international recognition. By telling the history of the community bank and some of its initiatives, this case intends to demonstrate the innovation process in a social fintech, addressing issues such as governance, platform management, information technology, business models and strategy. However, as its business model spreads to other community banks, new challenges emerge to ensure the growth and longevity of the project.

Keywords: social currency; community bank; mobile payment; financial inclusion; information technology.

RESUMO

Este caso de ensino aborda a digitalização da moeda social local Palmas, emitida desde o início dos anos 2000 em papel-moeda pelo Banco Palmas, para um novo modelo híbrido de *mobile payments* e *mobile money*, denominado E-Dinheiro. Trata-se de um empreendimento de desenvolvimento social e de inclusão financeira com amplo reconhecimento nacional e internacional. Ao contar a história do banco comunitário e algumas de suas iniciativas, pretende-se demonstrar o processo de inovação em uma *fintech* social, abordando questões de governança, gestão de plataformas, aspectos tecnológicos, modelos e estratégia de negócio. Entretanto, com a propagação do seu modelo de negócio para outros bancos comunitários, novos desafios se colocam para o crescimento e a perenidade do empreendimento.

Palavras-chave: moeda social; banco comunitário; pagamentos móveis; inclusão financeira; tecnologia de informação.

Learning objectives

After reading and discussing this case, participants will:

- Have good knowledge of the innovation process of a social fintech;
- Be able to recognize the challenges faced by social ventures involving information technology and its governance;
- Be capable of applying digital platform governance and management concepts and of supporting strategic business decisions.

Obtaining data

The narration of this case was based on data collected from the Instituto Palmas and its employees by means of interviews and analyses of material as well as publicly available information on the organizations mentioned in the text.

The authors conducted six face-to-face interviews with Joaquim Melo on different occasions in the period from 2015 to 2019 for elaborating academic articles and reports involving the context addressed in this case. More specifically, for the elaboration of the final version of the case, a two-day immersion meeting was held in July 2019 at the head office of the Banco Palmas in the Conjunto Palmeira in Fortaleza, Ceará, with the participation of one of the authors.

Other face-to-face interviews were held with seven Instituto Palmas staff in that period. In order to enhance the reading flow of the text, the visions and opinions of the team members have been condensed in the form of idealized dialogues involving the fictitious personalities Alex and Mariana. During the same period, semi-structured interviews were held with service users and merchants to gain an understanding of their perceptions regarding the E-Dinheiro service.

The analyses of the E-Dinheiro technological artifact in the period 2015-2019 were achieved using three mobile accounts that the Bank staff opened specifically for that purpose; two accounts had a service-user profile and the other had a merchant profile. Publicly accessible information was obtained to detail the data contained in the case. Among such sources were academic articles, research reports, news reports in the media, videos and audios of events that Joaquim Melo took part in, and websites. Specific information was obtained via the Brazilian Information Access Law, whose process number is registered in the references section.

Application

This teaching case was designed to be applied in undergraduate and graduate programs in Administration, in courses of Entrepreneurism and Innovation, and Digital Business Models because it addresses issues such as social entrepreneurism and digital platform governance and management.

Support material

The instructor may wish to make use of or suggest additional materials in the preparatory stage, during the discussions, or even after the application of this case (the URLs to access the videos are in the references at the end):

- Video on the Banco Palmas and the Conjunto Palmeira (Instituto Banco Palmas, 2014);
- Video addressing the question of community leaders' interest in adopting a digital social currency (Diniz & Cernev, 2014);
- Videos about the E-Dinheiro: (Centro Popular de Cultura e Comunicação, 2016; Instituto Banco Palmas, 2015);
- Teaching cases regarding the Mumbuca community bank and its digital social currency, namely:
- Mumbuca: Brazil's first digital social currency (Cernev & Proença, 2016);
- Mumbuca is money (with the use of the E-Dinheiro service): (Cernev, 2019);
- More specifically, on the question of blockchain technology, if the instructor deems it necessary, it is suggested that participants be given prior access to the following materials:
- Explanatory video on blockchain technology presented in five depth levels (with subtitles in Portuguese) (Wired, 2017);
- Online article of the ComputerWorld magazine: "Everything you wanted to know about blockchain and were reluctant to ask" (Steler & Cerqueira, 2017);
- Chapter of the textbook: "Blockchain: a nova revolução tecnológica nos serviços" (Diniz & Cernev, 2019).

Preparatory activities

Depending on their degree of knowledge regarding the themes and technologies involved in the case, different questions and activities can be proposed in order to facilitate the discussions later on. There now follow some suggestions for such activities.

1. Give a succinct, objective description of the difference between a traditional retail bank and a community development bank, touching on the aspects of objectives, audience, ownership, governance, and management.
2. What are local social currencies, what end do they serve, and what is their relationship with the country's official currency?
3. What are the differences between the concepts of mobile banking, mobile payments, e-wallet, and electronic money? Give examples of such services.
4. What role does technology play in the project presented in this case? How is the technological dimension managed?
5. Describe, in general terms, blockchain and its characteristics and applications.
6. Among the alternatives presented in the case, which one would you choose and why?

Theories and concepts

Different theoretical lenses can be adopted to analyze this case, but in these teaching notes, the focus has been on digital platform management (Tiwana, 2014). Other important concepts are presented below.

Digital platform management

Considering that there are always several interested parties involved in a social currency, it is important to understand its governance structure characterized by the decision-making process regarding strategic and operational aspects, which may be centralized or be of a more open, shared nature.

In the case of the E-Dinheiro platform, there is a potential source of governance conflict because while on the one hand it is a project intended to have a cooperative and democratic base, a veritable 'money of the people' (Community Currencies in Action [CCIA], 2015), on the other, insofar as it has the ownership of the technical knowledge needed to operate the platform, MoneyClip centralizes the technical decisions because the source code for the software belongs to that company. Then there is the commercial aspect, because E-Dinheiro had

a business model whereby the revenue was shared between the Instituto Banco Palmas and MoneyClip.

However, as Tiwana (2014) reminds us, "the way a platform is governed (decisions model) and the way it is architected (technological model) should be mirror images of one another so that each reinforces the other" (Tiwana, 2014, p. 44). In other words, the organizational structure underlying a platform should reflect the way in which its architecture is developed.

Thus, we can readily understand the potential conflict that might arise between governance and architecture in the case of the E-Dinheiro because the centralized logic of MoneyClip is not in perfect alignment with the cooperative logic of a 'poor outskirts bank', a situation that is articulated in the commercial logic of the two organizations. In the context of this case, we are interested in understanding the mechanisms of control over the technological development of the platform, its connection to the social approach of a community currency platform, and the impact of those two apparently conflicting approaches on the commercial policies that the two parties established by common accord.

Integrating those governances in a more open model aligned with the philosophy of the Banco Palmas would be a great challenge, given the domain of the specific technical skills for decision-making. Tiwana (2014) states that the technical nature and the strategic implications of the technological decisions regarding a platform's architecture have enormous strategic consequences that confuse the technical team and the management team because they embrace both domains and more often than not neither one of the two sides has sufficient competence to understand the logic of the other.

On the other hand, opting to transfer platform governance to the network of community banks (Rede) to take advantage of its externalities would be a movement diametrically opposed to the idea of fostering the establishment of a core, open, shared platform. The challenge would be even greater, involving not only the acquisition of the aforementioned competences but also the need to conduct platform management with decision-making processes traditionally based on the collectivity.

Another important issue regarding digital platform management concerns the degree of openness that its owners propose to promote. When the ownership is shared by various agents (as in the case of open-source software), then generally speaking there is a broader governance structure with a less centralized decision-making process, which can be an impediment to the dynamics of its evolution. On the other hand, when the ownership of the platform and/or its assets is centralized in one or very few agents, the decision-making tends to be speedier but with far less external participation.

> "If the ownership of a platform is shared among multiple owners or it is based on an open standard, it represents a shared rather than a proprietary platform (which belongs to one platform owner). These multiple owners of the platform must cooperate to make any changes to the platform architecture. Such distributed ownership mitigates the hold-up risk faced by app developers but also suffers from coordination challenges. It can result in a gridlock in making platform strategic decisions that can impede the evolution of the platform as well as its ecosystem. In contrast, a single platform owner has more power over the direction of a platform. It is therefore useful to view an increase in the number of platform owners as diffusion of power related to the platform's architecture." (Tiwana, 2014, p. 132).

In the context of this case, the possibility of sharing the management of E-Dinheiro with the Rede would mean amplifying the sphere of its governance and of the technological decisions. On the other hand, the actual existence of modularized governance in the platform's technological dimension (with MoneyClip or some other company) could very well frustrate the expectation of other stakeholders and might even restrict the possibility of its future expansion.

Solidarity finance

Solidarity finance may involve concepts that are yet unknown to the readers such as community bank, local social currency, social fintech, and even mobile payments and blockchain. To some of them it may come as a surprise that there are more than one hundred Brazilian currencies in circulation, all duly regulated! That being so, we present some definitions and suggestions for complementary research:

> "Community banks are solidarity financial services, in a network, of an associative and communitarian nature orientated towards generating work and income in the perspective of re-organizing local economies and based on the principles of the Solidarity Economy. Their objective is to develop low-income territories by fostering the creation of local production and consumption networks. They are based on supporting solidarity in grassroots economic initiatives in their various ambits such as: small-scale production or service provision ventures, support for commercialization and for a vast range of small grassroots economies" (Instituto Banco Palmas, 2019).

A social currency is a currency parallel to the official one, usually with a parity of one to one, created by community banks as an instrument for keeping the wealth of a given geographic territory within its bounds. It was originally issued as paper notes by community banks, but more recently the question of the importance and the possibility of digitizing it has arisen Diniz, Cernev, & Nascimento, 2016) and indeed some digital currencies have already appeared (Cernev & Proença, 2016).

Fintechs are organizations offering financial services with a technological basis and, generally speaking, they have constituted a new, disruptive player in the markets where they have emerged. A social fintech, in turn, is all the above but it is orientated by social and human development principles. Banco Palmas, in addition to other possible categories to which it could belong, can be taken as an example of a social fintech.

Mobile payments are not a new idea in Brazil, but they can be considered new in the context of local development and microfinance. The academic literature on them already has reports of successes (Institute for Money, Technology and Financial Inclusion [IMTFI], 2019) and failures (Diniz, Cernev, & Albuquerque, 2013). In Brazil, the appearance of such digital services was boosted by the enactment of Law 12.865 in 2013, which regulates the respective institutions and payment arrangements. E-Dinheiro governance is directly subordinated to that Law.

Blockchain is a promising emergent technology strongly based on cryptography and it has been used in structuring innovative crypto-asset financial services (see Appendix 2 of the case). Some solidarity finance initiatives have already been structured using blockchain (Diniz, Cernev, Daneluzzi, & Rodrigues, 2018), and it is expected that many others will appear in the coming years.

Two-sided market platform

Hagiu (2014) discusses the emergence and management of digital platforms in markets with two or even many sides, demonstrating the importance of the coordinated network effect on both sides for the balanced and sustainable growth of the platform. In the context of the present case, there is a clear need to amplify the user base as more and more merchants adhere to the platform often taking advantage of externalities that enhance its value. The replication of E-Dinheiro to other locations via Rede could be a positive network externality; however, it does depend on establishing broad networks of local users and merchants for it to effectively achieve success. Adoption and effective use of mobile payments may well be two complementary challenges. Some of the alternatives put forward in the case (restructuring with blockchain, migrating to another mobile payments service) may mean having to start the service adoption and use all over again for both sides of the platform; something highly complex and risky, and that would take a long time to achieve.

Questions for discussion

We suggest some questions for discussion of the case as they are in alignment with the class plans presented as follows.

Are there any differences between the E-Dinheiro service and those of other mobile payment and electronic money services?

The purpose of this initial question is to level the understanding of what E-Dinheiro is, making the differences and similarities between it and other mobile payment services explicit. More precisely, it is hoped that the participants will understand how the social objectives and the low-income target audience influence other important differences of the E-Dinheiro service.

To make comparisons easier, it is suggested that an alternative mobile payments service should be selected, such as PicPay, Mercado Pago, etc. The instructor could then ask whether any of the participants knows and/or uses any mobile payment app and accordingly select the most convenient example.

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Following that, the instructor can facilitate the process by asking questions that lead to comparisons and registering the contributions on the blackboard: So what about the technology in the hands of the clients? For whom is it designed? Who developed and maintains the platform? Figure 5 summarizes some of the characteristics of such services.

To discuss the perceived value, the instructor can turn to those participants that use m-payment services and ask them "what makes a mobile payment service good or valued for you?" In addition to those common aspects that are expected (utility, ease of use, and convenience), it is hoped that the question of 'acceptance' of the service will be mentioned because for a m-payment service to be useful for its users, there needs to be an adequate network of shops that accept it; and on the other hand, for the merchant to be interested in adhering to yet another payment service, there needs to be a good number of costumers willing to use it.

	E-Dinheiro	**Other service**
Target audience	Low income with little technological experience	Higher income with more technological experience
Outreach	Local, within the territory	National or international
Purpose	Financial inclusion and local development	Alternative means of payment generating gains for the entrepreneur
Technology	Basic smartphone and simple cell phone (low-end)	Smartphone (high-end)
Proprietor	Community bank	Retail bank or fintech
Platform	Developed by third party (MoneyClip)	Usually developed and managed within the venture itself
Governance	Modular, shared	Monolithic, centralized
Perceived value	Local development and utility	Utility, user friendliness, convenience

Figure 5. Comparison of E-Dinheiro with other mobile payment services.

At that point, the instructor should articulate the concepts of a two-sided market platform leading the discussion towards the subject of constructing the E-Dinheiro user and consumer networks. In addition to the abovementioned characteristics, it is important to emphasize the aspects of financial inclusion and local development. For many Palmas users, that service is their first ever financial account even though they do not have an account in a traditional bank! For the community, keeping the money circulating in the territory contributes to its development and benefits everyone.

In regard to the transition, the question could be: "The mobile payment service functions as a digital platform, but who manages that platform?" Unlike most of the payment services, the management of E-Dinheiro is shared at least in its technological aspect.

Is the management of the E-Dinheiro service similar to other m-payments, like those of a bank, for example?

From the operational point of view, there are definitely similarities in the management of those services, especially in regard to their adoption by users and merchants. Even with their respective peculiarities in their purpose, communication, and customer service systems, in every case they are two-sided market platforms and accordingly they need to foster the coordinated growth of both sides in order to maintain a balance. In a similar way to the mobility service Uber (another two-sided market platform), if one side grows faster than the other there will be negative implications.

Concerning the aspect of technological management, the differences are more obvious. While most of the mobile payment services construct, adapt, and maintain their technology 'at home' because it is core to the venture, for historical reasons Banco Palmas 'outsourced' its technical development, maintenance, and support activities to its partner MoneyClip. It is a fact that the Palmas did not and does not have the technical know-how that the project requires. That kind of interdependence is uncommon in bank services and payment services and brings with it a different kind of governance model.

The decision-making process of Palmas, and therefore of the community banks that adopt

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E-Dinheiro, is reasonably well shared. Palmas and the community banks serve their clients directly but any '2nd level' technical issues, involving platform maintenance or correction, are passed on to the technology partner. Prioritizing demands, for example, becomes a negotiation among the organizations involved, including the Rede.

Governance dimensions one and two proposed by Tiwana (2014) and presented before are significantly different in E-Dinheiro. That is a relevant fact for participants to bear in mind so that they make an adequate evaluation of the alternatives, because whatever decision is made needs to be in alignment with the current governance model or propose structural changes in it.

At that point, the instructor could ask: "What then is the central question of the case?" The answer one could expect from the participants would be which alternative should be adopted to replace MoneyClip in the project. However, the central question involves some interrelated problems, namely: E-Dinheiro's technological dependence on an external agent, technology management, and the governance model to be adopted from then on. The fact is that E-Dinheiro has modular governance: on the one side, there is the community aspect with shared decision-making and solidarity objectives while on the other there is the centralization of technological decisions with dependence on a company exogenous to the traditional solidarity finance ecosystem.

Having registered on the board all the differences in the E-Dinheiro management compared to the other services, and having identified the problems and central question of the case, the instructor should then proceed to an analysis of the alternatives.

The instructor can change the dynamics of the class and conduct a survey asking "which alternative would you choose?", registering the number of responses for each alternative. The instructor could then go on to examine the pros and cons of each alternative.

How would the decision alternatives solve the problem facing the platform manager?

The option acquire the technology company, thereby making the governance monolithic, could be interesting in a first analysis insofar as it maintains control of project governance in the domain of the community banks themselves. However, two critical issues need to be addressed: how to obtain the voluminous financial resources that would be needed to acquire and maintain the technological know-how and the team engaged in the project. Furthermore, the bank would have to acquire new technology management skills, something far distant from the actual scenario. On the other hand, that alternative of acquiring the E-Dinheiro technology alone or the license to use it and governing the platform's technological dimension without an external company could be interesting for Palmas insofar as it would reduce the immediate need for financial resources. The biggest challenge would still be maintaining the technological competences. One way to overcome that would be to transform the E-Dinheiro into a platform with open source code software, encouraging the formation of a community of developers, but against that there was the fact that there was too little time available.

The alternative of subsidizing the technological company to keep it engaged in the project would guarantee the operations of the E-Dinheiro but it would still not solve the case's central problem, which is the dependence on an external company whose objectives are not aligned with the principles of solidarity finance. Not only would it be merely temporarily putting off the problem, but also it would have an immediate negative financial impact on the Palmas, placing the venture's sustainability and longevity in jeopardy.

In a similar way, the adopt blockchain alternative could obtain good results and there are other cases of success in that direction. Even though it might involve the support of partner institutions, the control would remain with Palmas and the other community banks. However, its implementation would require specific technological skills and a relatively long time for development and maturation. Both sides need to be stimulated to adopt and use the service (two-sided market), a challenge which at the very least would take a considerable time to address, and time was a resource in short supply for all involved. The hypothesis of bringing in an external partner (fintech) to streamline this technological option would not solve and could even increase the central problem, which is the project's external dependence.

As remarked earlier, the possibility of sharing the management of E-Dinheiro with the Rede would mean increasing the modularity of its governance

model and further decentralizing the technological decisions. The actors already practice collective decision-making, but not in the technological dimension. The existence of a company with control of the technology (MoneyClip or any other) that centralizes such decisions could well frustrate the expectations of all involved and even limit the possibility of expanding to other projects and purposes, restricting precisely those externalities that could eventually expand the networks and enhance the project's success.

Lastly, the option of the migration of E-Dinheiro clients to other services, despite the great integrity it represented, would mean the end of this instrument of financial inclusion and the very strategy of expanding the community bank methodology, which was something unacceptable to all stakeholders.

The Figure 6 below summarizes the positive and negative points of each alternative.

Alternative	Positive points	Negative points
Acquire the company	Expertise and technological control	High cost, new expertise, changes the core
Purchase technology	Technological control, relatively lower cost	Lack the expertise
Subsidize the partner	Quick solution, avoids blackout	Financial sustainability
Start over with blockchain	Support of institutions, innovative technology	Long-term, regulation, possible dependence
Client migration	Decent way out for clients and merchants	Lose the domain and/or shut down the project

Figure 6. Positive and negative aspects of the alternatives.

As a transition question, the instructor can ask one of the participants that chose the most voted alternative: "If you were Joaquim, how would you communicate your decision to the community banks?" The idea here is to discuss the more expanded governance of the project, not just the Palmas in relation to MoneyClip (the technological dimension) but of the Palmas in relation to all other community banks.

How should the pending decision be communicated to other stakeholders?

The question is not just to communicate, but to involve! The other community banks share the same need for control over the platform, and decisions that have an impact on all ought to be shared, at the very least via prior consultation, otherwise the relations of Palmas with the other community development banks would merely replicate, to a greater or lesser extent, the relations of Palmas with MoneyClip.

The CDBs are not Palmas 'clients', they are autonomous entities that share the same technology and make solidarity-based payment for services used. Thus, there is a natural pressure for the platform to have shared governance. Nevertheless, however much the business decisions are traditionally shared, confirming the importance of the Rede, in reality very few of the community leaders have the technical knowledge required for making such a decision. Moreover, if they do not have that much technical knowledge, much less do they have the technological skills needed to carry out the actions involved in any one of the alternatives being considered.

Thus, the need arises to articulate a technical team for the project whether it be internal or outsourced, but with control centralized in the venture itself. Some competence in IT must be present in any centralizing point (in the Palmas organization, for example) and it makes no sense to replicate it to all other CDBs.

So, one of the conclusions is that the technology has its own governance! Even in a project with communitarian characteristics and shared governance, the technological dimension may require its own governance with a certain degree of centralization and independence.

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Teaching plan suggestion

Introduction (15 minutes): If it has not been done previously, the instructor can request that participants form small groups to analyze the 'preparatory questions' in order to obtain a level field of knowledge regarding the concepts that will be addressed in the discussion. If it is feasible, the instructor can present a video of the service or ask participants to download the app and try it out.

Comparison of the services (15 minutes): Once the 'questions for discussions' gets underway, the instructor can create a table of comparisons on the board, noting participants' comments and highlighting the differences related to the E-Dinheiro in the various aspects under analysis.

Platform management (10 minutes): During this stage, instructor can ask participants a series of inductive questions directed at getting them to analyze the operational, technical decision-making, and governance features of the service; questions such as "and what about the technology management?"

Analysis of the alternatives (25 minutes): When launching the little survey of the participants' choices of alternatives, the instructor can give opposing opinions to theirs and in that way construct a table registering the pros and cons for each alternative. If the discussion dries up too soon, then additional questions can be asked such as: "Would there be any other options, beyond those studied in the case?" If necessary, the instructor could ask one of the participants to explain blockchain and its main applications.

Decision-making and governance (15 minutes): After the alternatives mentioned in the case have been discussed, there is an opportunity to focus on the project governance. The instructor could begin by asking "how should the decision be communicated to the stakeholders?" as a way of highlighting the question of communication versus involvement. At that point, it might be convenient to present the theoretical aspect: modular governance versus centralized governance, centralized technological governance, ownership versus control versus decision, etc. It is important that the participants should understand that there are distinct models of governance partly motivated by the technological aspect: the technology brings with it a layer of governance of its own, that can influence or even remodel the traditional decision-making and governance of the community banks. It is an unintentional consequence of the technology and that observation is another lesson learned from the case.

Closure (10 minutes): To conclude the discussions, it is suggested that the instructor should summarize all the subjects, concepts, and situations that were addressed in the discussion. The decision related to a digital platform is indeed complex insofar as it supplants the traditional social decisions of community banks by aggregating the technological dimension to the respective governance.

At the end of the discussion, the participants' comments can be organized on the board in the following way (Figure 7).

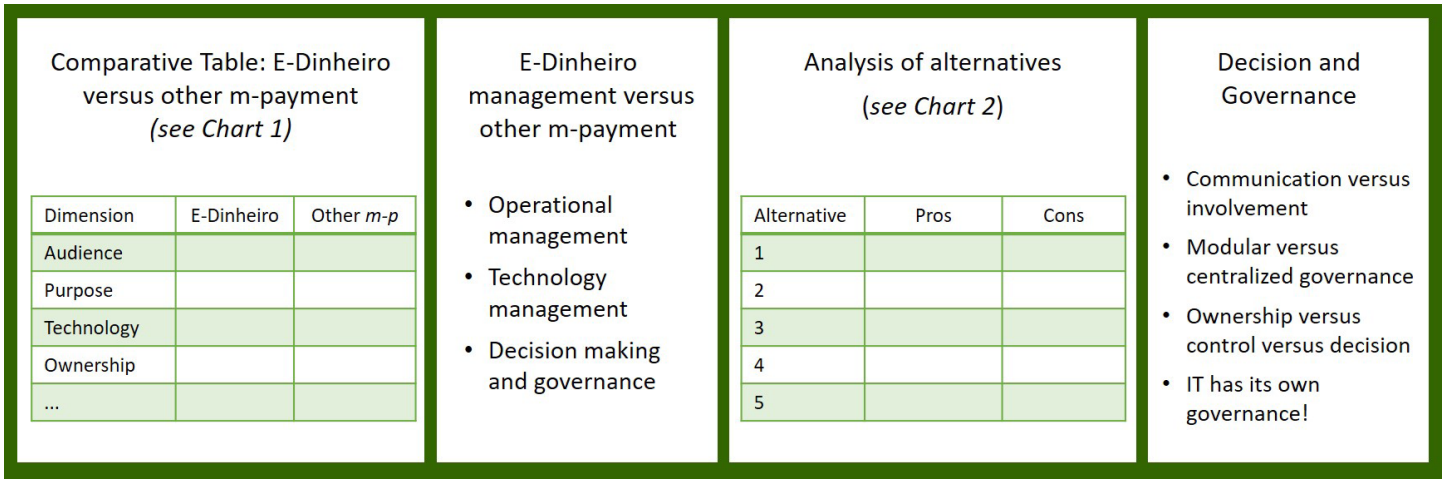

Figure 7. Example of the registration of the discussion comments on the board.

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Outcome of the case

On November 9, 2017, Joaquim negotiated the right to use the digital platform with the MoneyClip partners for the sum of R$ 140,000. The fund was obtained from the BNDES (National Social Development Bank). The negotiation process took a little more than the seven days stipulated by the company, but even so, it was relatively fast, considering the need to seek new external financing.

The MoneyClip Company shut down its activities and it was succeeded by the MoneyCloud Company, which was owned by just one of the partners of the original company. This new company provides technological services, including hosting, development, and maintenance of the digital platform and the app, charging for the services it provides (there is no longer any revenue sharing scheme in place). The company also maintains the ownership of the source codes and the software, and it may provide services and/or sell its technology to other clients.

Banco Palmas did not arrive at that decision alone. The decision-making process involved more community banks leaders, in order to make E-Dinheiro a common platform for the entire Rede, and not just for one community bank, so that gains of scale were effectively achieved.

When this case was submitted in the second half-year of 2019, the E-Dinheiro was already being used by 40 community banks, including that of Maricá in the state of Rio de Janeiro, where the Mumbuca was in circulation (the first digital social currency in Brazil, operated with magnetic cards). The expectation was that E-Dinheiro would be adopted by dozens of other locations and projects from that year on.

Given that innovation is an ongoing practice at the Banco Palmas, the possibility still exists that one day it may use blockchain technology to improve its financial services even further.

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Funding

The authors report that there is no financial support for the research in this article.

Conflict of Interest

The authors have stated that there is no conflict of interest.

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