

# Digital impact on Payments, Credit and Financial Risk Management : New ethical questions?

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## I. Overview

The ethics of a company starts with the definition of its reason for existence, of its mission, its goal as an organization. That's why it is so essential for a financial institution to put people at the center of its mission. In that sense, it is worth noting that banks play an essential role in society. Their main function is to help people and companies to bring their projects to fruition, not only through lending, but also by investing in human capital, financial inclusion, financial literacy and social programmes. Clients and the society must be at the heart of all our actions. This is a humanistic vision of the banking business that can be featured as "people-centric". Such a vision springs from a deep sense of awareness about the enormous impact our activity has on people's lives and hence the great responsibility that we have.

To understand better the ethical challenges financial institutions are facing, it is necessary to first describe the new environment where the financial activities take place today. The financial sector is at a major crossroads, making it imperative that we maintain this humanistic vision of banking. This sector is immersed in the digital transformation of the economy, based to a great extent on a balanced access to and use of data, the new oil of the economy.

### The digital transformation of the economy

The number of connections, interactions and information transmissions that we engage in using digital technology is growing exponentially, blurring physical barriers and reducing the cost of accessing information. Mobile technology, social networks, artificial intelligence, blockchain, cloud computing and Big Data are the main disruptive technologies to which companies now have to adapt. Welcome to the brave new world of hyperconnectivity!

### Big Data: the catalyst for the digital transformation

The exponential increase in digital activity also leaves a trail of information which can be exploited in order to gain a better understanding of the behaviour of the various market

agents. Advances in Big Data analysis techniques (such as data mining, data analytics and machine learning algorithms), the rise in the potential of the cloud (for storage and computing efficiency) and the ability to access tremendous amounts of computing power enable value to be extracted from large volumes of information at a high speed. “The added value of Big Data resides in the potential to uncover new correlations for new potential uses once the data have been collected.”<sup>1</sup>

### Big Data breeds the transformation of the the Financial sector

In the financial sector, which has been involved in digitisation for many years now, the depth and scale of analysis performed using Big Data is impressive and very advanced. Key pieces of information include data self-reported by customers, transactional data that banks directly observe, internal operational data and information publicly available on the Internet. Financial institutions, but also the new players of the digital world, the ‘fintechs’ and the GAFA<sup>2</sup> digital giants are increasingly paying attention to the value they can extract from the large amounts of data they have access to. New analytics fueled by Big Data may not only improve credit-risk assessment and fraud prevention, but also may be used to predict behavior, identify trends or forecast future events. In addition, access to Big Data allow internal processes to be increasingly automated and decision-making to be based on better evidence. By knowing their customers better, banks can anticipate customer needs and offer more tailored advice, products and services, at the right time.

### Freemium or purely free services convert data into the new currency of the economy

Some of the most popular services in the information society – social networks, search engines and apps– are completely free. But, are they really? What business model is this, that makes it possible to make money by offering things for free? In many cases the model used in the world of digital platforms is the so-called “freemium”, based on a free basic service for the user and offering a paid alternative with improved service (fewer limitations, no advertising, etc.) to the customer. Freemium is just one of the manifestations of the new data economy. ‘Purely free’ is another one. In any case, the services we access free via the Internet are not actually free –the currency being traded is our data. In this ‘prosumer’ environment, people consume content and services, while at the same time producing data, which they then exchange for these services.

That brings us to structure our presentation in three parts, covering three broad issues in which “digital”, “finance” and “ethics” interact:

1. First of all, we will review to what extent the digital revolution influences the capacity of the financial services to reaffirm its purpose in the perspective of inclusion and the fight against poverty.
2. Then, we will discuss privacy and cybersecurity, the two pillars of trust, and the main challenges associated with privacy.

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<sup>1</sup> Moerel L., “Big Data protection: how to make the draft EU regulation on data protection future proof”, Feb 2014

<sup>2</sup> GAFA is standing for ‘Google, Apple, Facebook and Amazon’

3. Finally, before the section of conclusions, we will introduce the new concept of 'data philanthropy', or how information can be turned into knowledge for the common good.

## II. Digital Financial Inclusion or the victory of the dignity

In 2014, according to the latest "Global Findex" Survey<sup>3</sup>, only 62% of adults in the world had a bank account. Being unbanked prevents families from accessing financial services, such as credit and insurance, needed to start a business, invest in education and health, and improve the overall quality of their lives. The high percentage of unbanked populations has turned the promotion of financial inclusion into a priority, recognised both by national governments and global standard setters – regulators, development institutions, and NGOs.<sup>4</sup>

As Pope Francis proclaims in the latest Encyclical, *Laudato Si*, "Greater attention must be given to the needs of the poor, the weak and the vulnerable... We need to strengthen the conviction that we are one single human family."<sup>5</sup> Referring to the financial sector, Pope Francis insists that, in the protection of equal human dignity and the common good, people are entitled "equal access to the means of technical education, credit, insurance and markets."<sup>6</sup>

In summary, financial inclusion is a question of justice. It is a question of freedom. It is a question of dignity. It is related to human rights. Without access to financial services, inequality results, leading to social instability, and eventually social disruption.

Let's move on to the analysis of why Financial Inclusion is on the verge of a massive change.

Financial Inclusion is now at the intersection of three significant global trends<sup>7</sup>:

- the high level of penetration of mobile phones in emerging economies,
- Big Data advances in credit assessment, bringing efficiency,
- billions of lower-middle-class consumers, particularly in emerging markets, have growing income (even if these incomes stay pretty low to compare with developed country standards), which fuels their needs for financial services.

It's easy to understand why the term 'financial inclusion' is quickly replaced by the term 'digital financial inclusion'. Digital advances, especially in Big Data, and mobile technology

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<sup>3</sup> Demircug-Kunt, A. et al. (2015). The Global Findex Database 2014. Measuring Financial Inclusion around the World. World Bank Policy Research Working Paper.

<sup>4</sup> For example, the G20's strong commitment to promoting financial inclusion has prompted the increased involvement of other global standard-setting bodies national legislators and industry participants.

<sup>5</sup> Pope Francis, Encyclical 'Laudato Si', Section 52

<sup>6</sup> Ibid n.5, Section 94

<sup>7</sup> Big Data, Small credit, The digital revolution and its impact on emerging market consumers, Omidyar Network, October 2016

are key components to drive real improvements in access to financial services and help people to fully participate in economic life, driving economic growth and reducing poverty.

Digital technology innovation is enabling banks to profitably build a high-volume and relatively low-margin business in the un/underbanked markets.

Extending loans in underserved markets has always been challenging. One of the main reasons for this situation was the lack of data. Indeed, the difficulty in collecting adequate predictive data on underserved consumers in a cost-effective manner has plagued credit providers for decades.

The use of Big Data is changing everything. Now, it's possible to develop credit scoring using nontraditional data, dramatically lowering the cost of identifying, assessing, and reaching un/underbanked consumers.

As always with Big Data, the type of data used can be extremely varied<sup>8</sup>: Examples of data types include call data patterns, web browsing history, social media activity, location data, government records and public databases. These will be complemented by more personal data like behavioral analytics, utility payment records, mobile money transaction data, different proofs (as ID, income or residence), and psychometric data.

Real life examples like Destácame<sup>9</sup> in Chile and Tala<sup>10</sup> in Colombia, tend to show that some consumers are willing to exchange their data—even their most closely held, confidential data— in exchange for bigger or better loans. Other relevant case is the fintech Cignifi<sup>11</sup> that uses algorithms based on anonymised mobile phone data and SMS patterns to assess consumer credit risk.

It is worth stating at this point that as the first financial services to be offered to the unbanked population, payments play a key role in increasing the amount of credit offered globally. At the same time, financial inclusion, by increasing the number of cashless payments, positively affects the overall efficiency of a country's payment system, due to economies of scale and network externalities. Thus there is a virtuous circle between both of the main functions of banking in the context of financial inclusion: improving payment systems and granting more loans.

### III. Trust, the cornerstone of the digital economy, and other ethical challenges

The crux of the issue in the new digital economy is how to protect the new wealth that represents Big Data. First of all, we will remember why the rights to privacy and protection of personal data are inviolable. Then, we will go into a deeper analysis of trust in the new

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<sup>8</sup> Ibid n. 7

<sup>9</sup> for more information: [www.destacame.cl](http://www.destacame.cl)

<sup>10</sup> for more information: [www.tala.co](http://www.tala.co)

<sup>11</sup> for more information: [www.cignifi.com](http://www.cignifi.com)

digital era and discuss the ethical challenges that arise through the different layers of data protection.

### 1. Rights to privacy are inviolable

The fundamental rights to privacy and to the protection of personal data have become more important for the protection of human dignity than ever before.<sup>12</sup> The Charter of fundamental rights of the European Union, following the Universal Declaration of Human Rights and the European Convention of Human Rights, points out in Article 1 that “Human dignity is inviolable”. In the same vein, Pope Francis, in the encyclical ‘Laudato Si’, sheds light on this notion of human dignity, using the word “dignity” no less than 23 times. Human dignity must be respected and protected. The dignity of the human person is a fundamental right in itself. In addition, human dignity paves the way for other rights, including the rights to privacy and protection of personal data. Losing control of one’s personal information is to a large extent losing control of one’s life and one’s dignity.<sup>13</sup>

### 2. ‘Trust’ in the new digital era

Trust is the foundation of the banking business. As such, it is a bank’s responsibility to operate in a way that inspires trust between itself and its clients. This trust mainly relies on the capacity of the bank to store and protect depositor’s savings and money.

Trust, is also the cornerstone of the digital economy. However, data, rather than money, is the new currency. Without trust, digital businesses cannot gather consent from their clients to use and share the data that underpins their operations.

Organisations have been busy focussing on countless new tools and techniques to collect data and extract from them valuable analysis to make decisions. However, as these products and services are rolled-out on a wider scale, the risk of errors and security breaches only increases, along with the risk of permanent damage to customer trust.

And what good is all of that data, without the permission to use it?

To unlock the potential of the data, enterprises must inspire consumer confidence, by shaping themselves around two strong principles: data privacy and cybersecurity. If properly embraced, these two pillars will help support customers’ decisions and strengthen confidence in the banking sector, enabling banks to lead their clients forward, into the digital future.

Data is the identity of our customers, and we must take care of it. Making sure outsiders don’t gain unauthorized access to data and damage hard-won trust is of vital importance. Wherever data goes, security must go with it. Therefore, intensive cybersecurity, encompassing advanced techniques such as cryptography and authentication, is crucial to create a stronghold for customer data.

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<sup>12</sup> European Data Protection Supervisor, “Towards a new digital ethics”, Sep 2015

<sup>13</sup> See Michael Mc Farland, “Why we care about privacy”, Markkula Center for Applied Ethics, Santa Clara University, June 2012

As seen previously, personal data has an economic value, as it is a factor for exchange on the Internet. Data is used for the purposes of advertising, marketing, generating profiles and tracking consumer habits. Today, most people are unaware of the broad extent of this tracking. Due to the quantity, sensitivity and complexity of personal data being collected, regulators have stepped in to define acceptable uses of consumer data. However, regulation by itself is not enough: Internet users must exercise responsible behavior and take into account who is using the data, how, what for purpose... and whether there are sufficient levels of security.

Let's focus on the three pillars of the data protection, where the major ethical challenges related with trust arise: consent to process data, the individual's control over his/her own data, and control of the process by an independent authority.

#### a) Consent to process the user's data

There is a need for 'clear and affirmative consent' for the use of personal data by the company.

That's why you need clear and understandable language' in privacy clauses. The problem with Internet users is that most of them don't read the terms and conditions of the websites they access, and that's where it is clearly stated what's done with their data, the processing policies, and the general policies of the website. This undoubtedly calls for education on data protection.

A fact deserves special consideration: "It would take the average person about 250 working hours every year, or about 30 full working days - to actually read the privacy policies of the websites they visit in a year."<sup>14</sup> Therefore, the 'Terms & Conditions' have a long way to go in terms of transparency and clarity.

#### b) The individual's control over his/her own data.

Doubtless, better descriptions of how private data will be protected will significantly increase trust. Transparency and clarity are essential for ensuring that people always understand how their personal data will be managed and which rights do they have regarding their personal data:

- The right to be informed about one's personal data.
- The right to be informed if personal data has been pirated.
- The right of access to data which has been collected concerning him or her. Each individual must have control over what is done with his data and the principle of transparency: that he really knows what his data are being used for. "Personal data should be processed only in ways compatible with the specific purpose for which they were collected is essential to respecting individuals' personal legitimate expectations. For example, codes of conduct, certification and audits can help build a robust trust in the digital market."<sup>15</sup>

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<sup>14</sup> Aleecia M. McDonald and Lorrie Faith Cranor "The Cost of Reading Privacy Policies" in *'A Journal of Law and Policy for the Information Society'*, 2008 / Mike Masnik, To Read All Of The Privacy Policies You Encounter, You'd Need To Take A Month Off From Work Each Year, April 23rd 2012

<sup>15</sup> Ibid n. 12

To verify the character of the stated purpose is not necessarily an easy task:

- Anonymisation: companies may consider most of their data to be non-personal datasets because they anonymise all personal data. However, in reality it is now rare for data generated by user activity to be completely and irreversibly anonymised. But technological advances and the ability to associate data across multiple sources is shifting boundaries of what is or is not potentially re-identifiable<sup>16</sup>. This raises the question of integrity of personal data: if, sooner or later, one is very likely to be re-identified, this lack of a real anonymisation clearly undermines the concept of personal data itself.
- The objective of the data collection: the clear objective of Big Data is to uncover new correlations for new potential uses, that may have nothing to do with the original purposes for which the data were collected.
- The risk of the profiles: most of the time, the provider will create profiles built around the behaviour of the user that can be used as the basis for decisions affecting the user. “Profiles used to predict people’s behaviour risk stigmatisation, reinforcing existing stereotypes, social and cultural segregation and exclusion.”<sup>17</sup> Rather than allowing the user to determine who he wants to be and what he wants to consume online, the service provider’s use of Big Data creates a situation in which the user is fed content reinforcing a generalized, stereotyped version of himself, his peers and his views.
- Discrimination: article 21 of the Charter of Fundamental Rights states “Any discrimination based on any ground such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation shall be prohibited.”. The discrimination can be explicit, or due to preexisting biases.

That’s why users, in order to detect unfair price discrimination on the basis of poor data quality and unfair profiling and correlations<sup>18</sup>, should get access to the profiles and the logic underlying the decision-making processes.

- The right to have personal data rectified or deleted if necessary (right to be forgotten in certain conditions).

In theory, users can request website administrator to eliminate personal information contained on their databases.. However, this is sometimes pointless, as there are widespread data-sharing practices whereby personal data collected is passed on to other partners, and can no longer be controlled by the owner of the data. This highlights the importance of entering personal data exclusively on reliable sites.

- ‘The right of Portability’, or the right to transfer most of one’s own personal data to another service provider is an effective starting point for creating the conditions for true consumer choice.<sup>19</sup>

<sup>16</sup> See, for example “Alternative data sellers fail to remove personal information, say hedge funds”, Financial Times, 12 December 2016

<sup>17</sup> Ibid n. 12

<sup>18</sup> European Data Protection Supervisor, “Preliminary Opinion on Privacy and Competitiveness in the Age of Big Data”, March 2014

<sup>19</sup> Ibid n. 12

### c) Control of the whole process by an independent authority

Compliance with rules regarding user consent to access data, shall be subject to control by an independent authority.

As analysed previously, data owners have the rights of consultation and complaint. Through these tools individuals can request to see, update and correct their data, and revoke and suppress access to any third parties who may possess their information. If the third party does not respond, or if the response is negative, the owner may petition the supervisory body to conduct an investigation and make a decision.

Among possible decisions, the supervisory body could use fines to penalise improper use of personal data. As an illustration of that, the new EU Data Protection Regulation includes fines of up to €20 million or 4% of annual Group turnover.

To conclude this section, we will outline a series of other challenges in relation to protection of data.

### d) Other ethical challenges in relation to protection of data

- Systemic risk in the offing ?

A growing dependence on a global system of continued collection and analysis of new data could make society and the economy more vulnerable to unprecedented security flaws and malicious attacks.<sup>20</sup>

- Divide between the haves and the have-nots

It seems that a large divide is taking place between the haves and the have-nots, the ones who know how to access to the right information and analyse it, and the ones who don't, the ones who can stand up for their rights, and the ones who can't. In the context of this "digital divide", Robert A. Shultz<sup>21</sup> presents two key questions to consider: (1) How does the use of the Internet by the least advantaged affect their life prospects? and (2) How does the use of the internet by other sectors of the economy contribute to the life prospects of the least advantaged?

- More democracy ?

At first sight, greater information availability seems to enable more transparency and therefore, more democracy. However, the reality is quite different<sup>22</sup>:

- China requires service providers doing business in China to reveal data to Chinese law enforcement authorities.
- In the United States, the Snowden case<sup>23</sup> revealed numerous global surveillance programs run by the NSA.

<sup>20</sup> Ibid n. 12. See also Marc Goodman, "Future crimes", Random House, 2016

<sup>21</sup> Robert A. Shultz, "Ethics and the Internet", *Values and Ethics for the 21st Century*

<sup>22</sup> As the philosopher Byung-Chul Han says "The society of total transparency is necessarily transformed into tyranny, at the mercy of total control and vigilance." ("The society of transparency", Stanford University Press, 2015)

<sup>23</sup> For more information about Snowden case, refer to: [www.theguardian.com/us-news/the-nsa-files](http://www.theguardian.com/us-news/the-nsa-files)

Financial entities have made great efforts to attain the highest levels of data security and to educate customers on safety and privacy best practices. In order to guarantee consumer protection and maintain the excellence achieved, the authorities should establish the same security requirements for all payment service providers and avoid sharing personal credentials among players in order to safeguard customers information. Furthermore, a level playing-field for security requirements should follow international standards to ensure inter-country operability, but be flexible enough to follow market evolution and protect against new potential fraud mechanisms.

#### IV. 'Data philanthropy': information turned into knowledge for the common good

Private sector companies accumulate a tremendous amount of data in their day-to-day operations. Market research, communications tracking, client relationship management, and market activities generate a wealth of information, which tends to stay in the private domain. The call for increased privacy standards and opt-out conditions for such data has been reinforced by recent national and international security announcements. At the same time, there is increasing recognition that private sector data and Big Data can be used for public good, giving rise to a new "data philanthropy."

To illustrate this, let's share one example of how Big Data, through the analysis of financial transaction data, can turn information into knowledge for the common good.

[UN Global Pulse and BBVA Data & Analytics](#), BBVA's center of excellence in financial data analysis, developed a partnership to explore how financial transaction data can be analysed to better understand the economic resilience<sup>24</sup> of people affected by natural disasters.

The project analyzed Point of Sale (POS) payment and ATM cash withdrawal data at high geospatial resolution to gain insight into the way people in Baja California Sur (Mexico) behaved prior to, during and in the wake of hurricane Odile. Analysis of the transaction data provided an opportunity to understand behavioural patterns displayed when people are subject to external shocks such as natural disasters. This is just one example of how public-private partnerships may help citizens. The emergence of the concept of "smart cities" or some advanced forms of e-government provide additional examples.

#### V. Conclusion

The financial sector is immersed in the digital transformation of the economy, driven by Big Data, the new oil of the economy. Big Data is no longer a promise nor a trend. Big Data is here and is sparking profound changes in the financial industry. Regarding banking, Big Data affects the three primary roles: the role of depositary, the role in the payment system and last but not least, the role as intermediary between depositors and borrowers. .

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<sup>24</sup> Access to the microsite: [odile.bbvadata.com](http://odile.bbvadata.com)

The impressive development of financial inclusion, especially in emerging economies, is a good example of this time of great changes. In addition, the use of Big Data and its analysis, in all economies, significantly improves the credit scoring process and efficiently generates new business opportunities.

However, the analysis of large volumes of information like Big Data, raises a series of ethical issues, in particular regarding the protection of data and safeguarding of customer trust.

Technology and data are neutral, it is their use that can both generate great value and create significant harm<sup>25</sup>. Once Big Data systems know us better than we know ourselves, the risk is that authority will de facto shift from humans to algorithms<sup>26</sup>. Eventually financial institutions, but also people themselves, may implicitly give algorithms the authority to make the most important decisions in their lives, including the financial ones. That would mean a lack of freedom for people, and the end of free will. Identifying in a limited way what is good for you, Big Data could then empower Big Brother. Against this risk, self-awareness, self-control, and education in human values are the best antidotes.

Improving trust should be a top priority for financial companies. As everybody knows, trust is hard to earn but easy to lose. A bad experience can undo much of the trust placed in a financial institution. Data privacy and cybersecurity, the two pillars of trust, must be primary considerations in the digital economy. In addition, transparency, clarity, integrity and respect of people are key elements to build trust. This is a necessary condition to drive the consumers into the new digital era.

Beyond the notions of business, respect of people's data privacy on the one hand, and advances in financial inclusion, on the other hand, are questions of dignity and human rights.

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<sup>25</sup> Unlocking the Value of Personal Data: From Collection to Usage, World Economic Forum, February 2013

<sup>26</sup> Yuval Noah Harari on big data, Google and the end of free will, Financial Times, August 26, 2016