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Study of User Experience Design of Digital Financial Services

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Abstract

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<p>This Master Thesis is focused on a research on the field of digital financial services focused on money transfer and payments. The main purpose of the work is to analyse and understand what is happening now in the industry, and how it has evolved so we can define some direction for the next steps. The thesis has been developed while working at the company Vipera Ibérica S.L., which is specialized in the development of digital payment methods.</p> <p>For this, a user-centered design approached has been used, dividing the research process in two parts: desk research and user interviews. The analysis of the entire research has led to several conclusions on how these services are approached, and also some ideas on what the next steps would be to take.</p> <p>The conclusions of this Master Thesis will provide some initial points in which to base the design of new concepts in money transfer and payment services or iterate existing ones.</p>	
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1 Introduction

According to research, there has been an incremental adoption of different financial services across many categories. The Fintech industry has grown in technology and a variety of use, not limiting itself to traditional services such as banking.

New commercial possibilities have arisen and now the customer has access to plenty of opportunities from their own digital device. With this rapid growth of the industry, companies in the financial sector need to adapt to a user with much more experience in the digital world. But, are companies actually adapting to the user needs?

2 Context of work

This thesis has been produced during a 5-month internship with the company Vipera Ibérica S.L. (Vipera Ibérica S.L., 2020) in their branch located in Madrid.

2.1 Vipera Ibérica

Vipera Ibérica (hereafter Vipera) is a Fintech company that provides digital customer engagement solutions for banks and retailers. Formerly known as SoftTelecom, since 2018 Vipera is part of the Italian Fabrick S.p.A (Fabrick S.p.A., 2020), that itself forms part of Gruppo Sella (Banca Sella, 2020).

With more than 115 employees in Madrid's branch, they work in a variety of projects related to international money transfer, online payments, and innovation on the use for blockchain. Since they were founded back in 2005 the company has reached more than 4 million mobile devices with their financial apps.

2.2 Teams organization and hierarchy

Within the company, with so many different projects occurring at the same time, it is important to have a clear structure of the teams involved. For this, Vipera's employees are dedicated to specific projects instead of being involved with multiple projects at once.

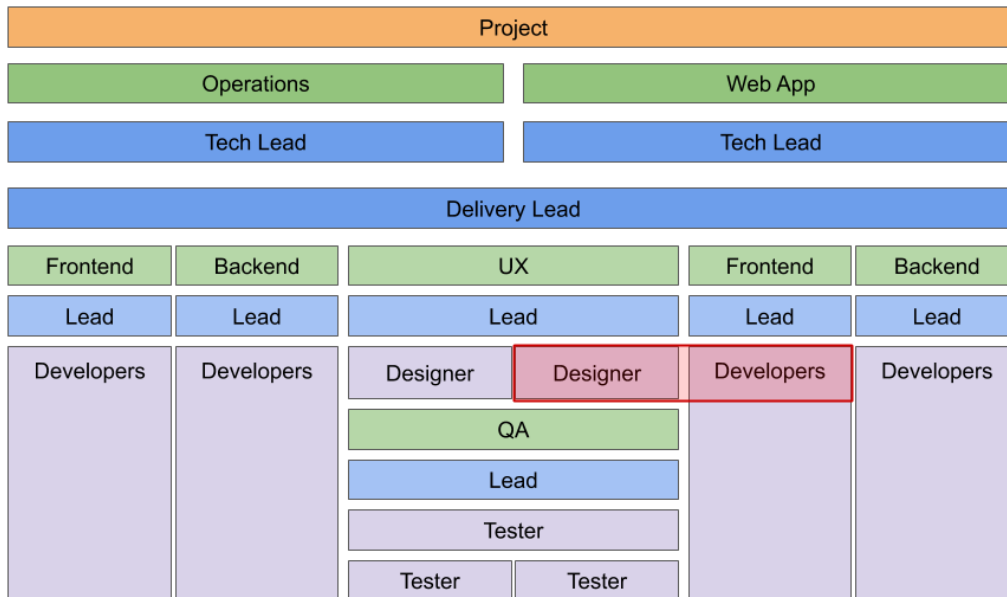


Figure 1 -Typical team structure at Vipera Ibérica

As an example, Figure 1 shows the structure of a two-side platform: the main web application that is addressed to the final users, and a portal for the client to manage ongoing operations in the web app. As seen in Figure 1 above, both areas of the project count with a technical leader who manages that part. Additionally, there is a delivery leader who is in charge of synchronizing both areas, as well as acting as the Scrum Master. The aforementioned roles, although involved in the development of new features, are more administrative related than technical.

Following this example, there are different sub-teams in this project: front-end and back-end for operations, front-end and back-end for the web app, and User Experience (UX) and Quality Assurance (QA) for both operations and web app. All these sub-teams count with a leader whose responsibility is the same as the rest of the team in terms of development, design, or testing, but they are also the go-to people from upper management -levels (such as delivery lead or tech lead). They represent their groups if there is a need for it.

Despite this hierarchy, Vipera is a consultancy company, meaning that in some cases it still depends on the client for management. Product Owners are not included in Figure 1 because they come from the client-side. What feature should be included? Which design approach should be followed? Those are decisions that Product Owners will make. In order for this to work, there must be a clear work methodology established. As such, Vipera works using Scrum.

2.3 Methods and Tools

2.3.1 Agile methodology: Scrum

Scrum is defined by its creators as a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value (Schwaber & Sutherland, 2017). This agile methodology has been in use since the early 1990s, and it was initially created for managing and developing products, but it expanded to develop software, hardware, networks, government, marketing, and many other fields.

But how does Scrum work and how is this applied in Vipera? The process is broken up into smaller pieces, planning a minimum set of features that are built, then reviewed, and finally become ready to ship. This occurs in periods of time of two weeks called sprints. With each sprint, the product slowly evolves and becomes easy to fix and adapt to new issues.

There are several components that compose the Scrum process:

- Roles:
 - Product Owner (PO): the person responsible for defining the features that are needed in the product. As stated in the previous section, in this case, the Product Owners are part of the project from the client-side, so they do not count as part of Vipera.
 - Scrum Master (SM): this is the leader of the Team, responsible for protecting them from frictions during the process, running meetings, and keeping everything going. Again, in the case of Vipera the Scrum Master is also the Delivery Lead.
 - Team: the group of developers, testers, designers that build the product features.
- Artifacts:
 - Product Backlog (PB): this is a prioritized list of features (user stories). This list evolves and changes priorities with each sprint.
 - User Stories (US): they are a way of describing a feature set. User Stories follow the structure “*As a __, I need __ so that __.*” This allows the PO to specify the right amount of detail so the Team is able to estimate the size of the task. User Stories with the highest priorities will move into the current sprint backlog. In Vipera there are four types of stories depending on the content:
 - Epic: it creates a bigger scope gathering certain features to achieve a certain goal.
 - Spike: some investigation should be done regarding certain features that were not expected.
 - Bug: a bug raised from an incident report, customer service, or QA report.
 - Feature: a feature that should be implemented for a certain epic.
 - Burndown Chart: it shows the progress during the sprint on the completion of tasks from the sprint backlog. This chart should approach zero points as the work is being completed.
- Ceremonies:
 - Sprint Planning: a meeting involving the Product Owner, the Scrum Master, and the Team to discuss User Stories and estimate their size, that is measured in Story Points. The estimation size system can be described as follows:
 - 1 point → Extra Small
 - 2 points → Small
 - 3 points → Medium
 - 5 points → Medium-Large
 - 8 points → Large

- 13 points → Extra large. This should be broken down into smaller tasks as it will not fit into one sprint.
- Daily Scrum: a brief standing meeting in which the Team talks about what has been done since the previous meeting, what they are working on, and what is blocking them. It usually takes 15 to 20 minutes, and should always occur in the same place.
- Sprint Review and Retrospective: this occurs at the end of the sprint. During the Sprint Review the Team demonstrates the completed work to the Product Owner, and after that starts the Retrospective, when everyone discusses what they can do to improve the process going forward.

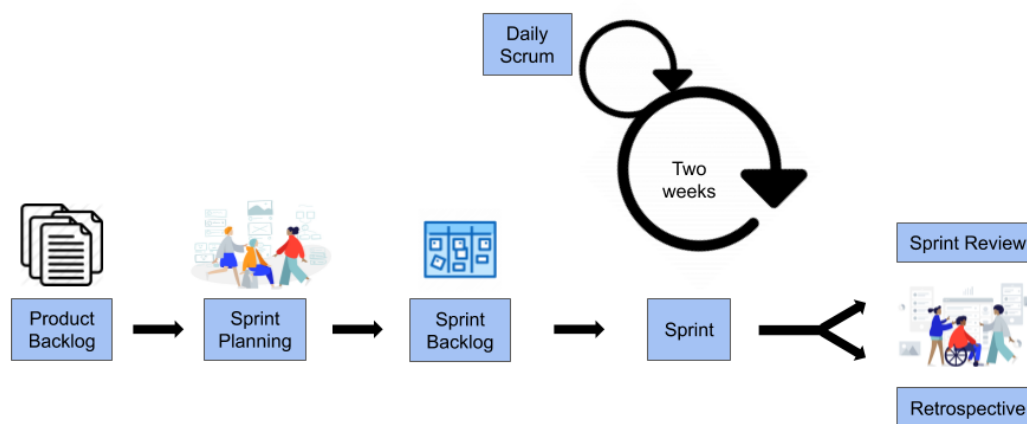


Figure 2 - Scrum workflow (illustrations from Humaaans (Stanley, 2020))

The essence of Scrum is applying an iterative, incremental approach to optimize and control risk. The process must be clear and visible to those responsible for the outcome. There is a need to define certain aspects by a common standard so observers share an understanding of what is to be achieved. For this, there are two concepts that should be clarified: Definition of Ready (DoR) and Definition of Done (DoD).

- DoR is a way for a product owner to indicate that an item in the product backlog is ready to be included in the sprint. It is the responsibility of the Product Owner to make sure that there is a Definition of Ready established. The Team can refuse to take an item into the current sprint if a User Story does not meet DoR.
- DoD describes the global acceptance criteria for a story, sprint, or release.

At Vipera, the concepts of DoR and DoD are especially important. As they are defined by the Product Owner, it becomes an issue of communication between client-side and team in Vipera. Over time and thanks to the feedback obtained from retrospective meetings, the initial definition of both concepts can be tweaked and adapted to the needs of both the team and the client, reducing mishappenings and misunderstandings.

Furthermore, everyone involved in the Scrum process should be ready to adapt to changes that can occur during the sprint. Scrum users should frequently make sure that everything is progressing towards a Sprint goal and detect undesirable variances. If some aspect is determined to be deviating from the acceptable limits, then the resulting product will be unacceptable. The process should be adjusted to avoid further deviation, what is done during the ceremonies described before.

2.3.2 Tools

Just using a good methodology does not make a team work along. Using the right tools is a key factor to keep in mind when putting in practice any methodology.

To ease the communication, the team uses **Slack**. Slack is a chat-based communication tool that allows its users to create multiple channels with specific purposes, which translates into locating the conversation into a single place. Moreover, there are a lot of tool integrations possible in Slack, which automatizes some processes and speeds up the work. Also in terms of communication tools, there is **Zoom**, a video conference tool that is mainly used for demos during the Sprint Review, and meetings with the Product Owners.

With big projects, the amount of documentation necessary for each feature becomes bigger and bigger, so it becomes important to rely on a good documentation tool. For this, the choice is **Confluence**. Here, every member of the team can access a workspace where all knowledge and research can be stored and easily categorized. This tool is key in the onboarding process of a new member of the team, as it also contains all the necessary descriptions of methodology, meetings, and team members.

As explained in the previous section (2.2), the work methodology used in this team is Scrum. In order to support this methodology the team uses **Jira**, an issue & project tracking software where Product Owners can create a backlog, user stories, and all the necessary items involved in Scrum, while having a clear overview of how the sprint is advancing. Confluence and Jira belong to the same company, Atlassian, which translates into a smooth integration between the two tools.

With reference to development, the main tools would be **Visual Studio Code** and **Github**. The first one is a code editor optimized for building modern web applications. It is easily configurable and many different plugins can be added as user preferences. The second one, Github, is a development platform where developers host code, manage repositories, and overall build software.

On the side of User Experience design, the main tools used are **Figma** and **Whimsical**. Figma is a design tool used to create and test prototypes. One of the most interesting features of Figma is that it allows real-time collaboration, so more than one designer can work in the same file at the same time without worrying about destroying somebody else's work. This tool was introduced during the internship due to some constraints of hardware. Usually, for the design task, the tool to be used would be Sketch, but the device provided by the company did not support this design software, so it was decided that at least for the time of the internship Figma would provide the essential needs for design and work collaboration. As for Whimsical, it is more focused on the exploration and ideation phases of the design process. It also has the same real-time collaboration feature

that Figma offers, but it provides different kinds of visual communication methods like flowcharts, wireframes, or mind maps.

2.4 Impact of COVID-19 in the work process

Even though the work structure within Vipera works fine, since March 2020 the company had to adapt to a new paradigm of working due to the COVID-19 pandemic. All in-office work is suspended and a remote-first approach has been established.

In the sense of agile methodology, this does not change how this works, but it changes how it is delivered. The main change is observed in the tools used for day-to-day work. Being able to correctly communicate and discuss ideas is more difficult when not all interlocutors are present in the same place. For this, one additional tool has been established:

- **Discord:** a voice-based communication tool that is perfect for work collaboration as it maintains a stable connection when continuously using voice-channels and screen-sharing. Not only does it help with the collaboration flow, but also reduces the feeling of loneliness that some can have while working from home under such a dangerous situation, as these voice-channels are usually opened and working throughout the day.

2.5 My work in the company

The main project during the internship is a digital service for international money transfer. My personal role in the team has been cross-functional, with the majority of tasks related to UX design but also some small percentage more related to front-end development, always addressed to the web app. As I have been working as an intern, the first couple of weeks were used for getting familiar with the tools and methodologies.

For the design-related tasks, I work together with the UX Design Lead and discuss tasks with her before delivering to Product Owners. In the case of design there is also one additional meeting during the sprint: UX Sync. During this meeting we review features with the Product Owners and show possible solutions that are studied by them and, based on pros and cons of each proposal, it is decided on which ones the team is moving forward. These meetings occur twice a week, as they also help refine the features and solve possible design issues that can come up from the development team.

Due to concerns from the client, it is not possible to use the actual service for the development of this thesis, hence the focus will be put on research about its field of work. Nevertheless, the experience obtained through the work on said project will be useful for the analysis of the research results, as well as for the proposal of future projections in the field.

3 State of the art

Before deepening into the research, there are some initial concepts that should be clarified for a better understanding of this material.

3.1 Financial Services and Fintech

In consonance with the Finance and Development department of the International Monetary Fund (IMF) (International Monetary Fund, 2020), financial service is best described as the process by which a consumer or business acquires a financial good.

Financial services are the economic services provided by the finance industry, which encompasses a broad range of businesses that manage money, including credit unions, banks, credit-card companies, insurance companies, accountancy companies, consumer-finance companies, stock brokerages, investment funds, individual managers and some government-sponsored enterprises.

Fintech, on the other hand, is the technology and innovation that aims to compete with traditional financial methods in the delivery of financial services. The traditional financial services industry has enormous budgets dedicated to product design, however, the industry struggles to innovate and create fast change to address the needs of potential customers. Fintech is a combination of technology and financial services that is transforming the way financial businesses operate, collaborate, and transact with their customers, regulators, and other players in the industry.

Digital innovation is disrupting and reshaping financial services at a rapid pace, and incumbents and challengers alike need to be attuned to the evolving expectations of their customers. Challengers have built themselves using a design-first approach and agile work processes. By keeping a technology-forward mindset, they are able to offer Fintech services that are at once personalized, accessible, transparent, frictionless and cost-effective.

There are two main reasons for the immense popularity of Fintechs. First, the global financial crisis of 2008 showed consumers the limitations and flaws of the more traditional banking system that led to the crisis. Second, the emergence of new technologies that helped provide mobility, ease of use, speed and lower cost of financial services, made consumer experience easier and better in other areas of their life, which changed the expectations they had from the banking services (Saksonova & Kuzmina-Merlino, 2017).

To that end, the core value of Fintechs is providing exceptional experiences to their users. These user-centric services are disrupting the financial landscape by harnessing the power of digital technologies. There are many benefits that Fintech companies bring to the financial sector, particularly for the end-users. These include, but are not limited to, improved personal finance, for example, easier money transfers and payments, better user experience, a wide range of services fulfilling every need a user might have, and financial inclusion.

According to multiple studies made by EY in 2015 (EY Global Financial Services Institute, 2015), 2017 (EY, 2017), and 2019 (EY, 2019), the evolution of the Fintech industry is clear now more than ever. While in 2015 the industry was in its early phase, in 2017 it already achieved initial mass adoption, and in 2019 this

industry has not only seen a tremendous improvement but also has expanded its offerings around the globe. What were considered Fintech challengers (also referred as challenger banks, they operate exclusively online and may have their own banking license or operate through licensed partners) have become proper competitors, with an increasingly global reach; and the interactions between stakeholders are forming Fintech ecosystems that are replacing traditional bilateral partnerships.

In terms of consumer adoption, the increment from 2015 to 2019 perfectly represents the rapid advance of the Fintech industry and its integration in modern society.

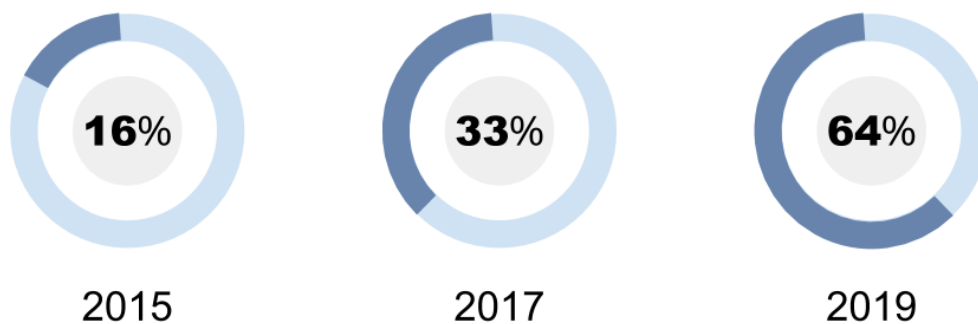


Figure 3 - Adapted from Global Fintech Adoption Index 2019 (EY, 2019)

But of course, this growth from the consumer perspective is not the same when observed from the industry perspective in all types of financial services. That 64% of consumers can be divided into 5 main categories:

1. Money transfer and payments
2. Savings and investments
3. Budgeting and planning
4. Insurance
5. Borrowing

Even though there have been some changes in different categories' rank, the clear advantage goes to **money transfer and payment**, hereafter MT&P, going from an adoption rate of 15% in 2015 to a surprising 75% in 2019 (EY, 2019).

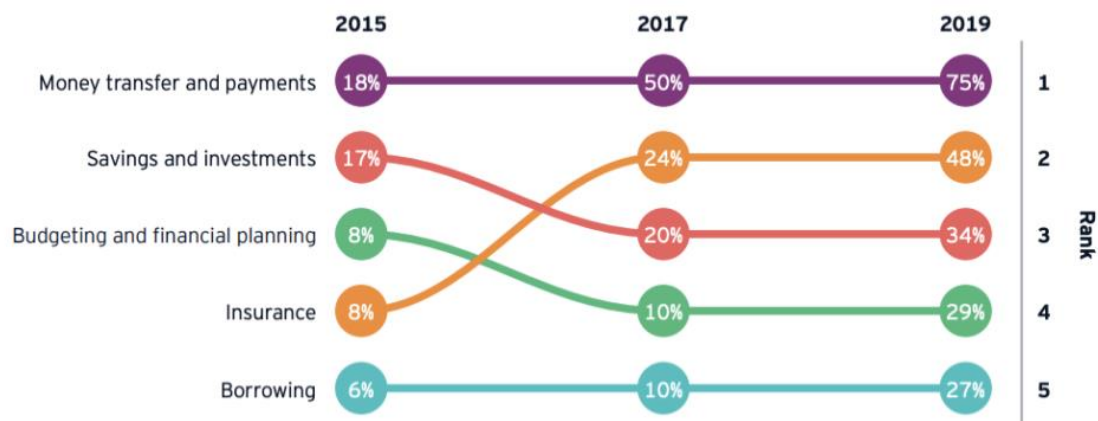


Figure 4 - Comparison of Fintech categories ranked by adoption rate from 2015 to 2019 (EY, 2019)

3.1.1 Money transfer and payments

As observed in Figure 4, the most commonly used category is MT&Ps. In China, where money apps offering this service are pretty common, the adoption rate goes up to 95%. The most generally used services in this category are peer-to-peer payments, non-bank money transfers, and in-store mobile payments.

Presently, to the consumer, there is no difference between a transfer going to a domestic or foreign recipient. The shortcomings of cross-border payment services are substantial. Typically, these transfers are costly and cumbersome, relying on opaque services: the price is not transparent, nor known at the time of initiating the transaction in most cases. Also, the process can become very slow, having to route payments through many banks before they reach their destination, which causes delays and incurring fees (He, y otros, 2017).

Having this in mind, it is easy to understand how attractive rates and fees have played a key role in the expansion of this field. When making cross-border payments, various types of users put special emphasis on low cost, security, convenience, predictability, and transparency. But not only consumers are using Fintech services more and more, but also Small and Medium sized Enterprises (SME) are joining Fintech ecosystems that integrate different financial services propositions. Such ecosystems offer SMEs added efficiency and security through their interoperability and ability to connect different business functions.

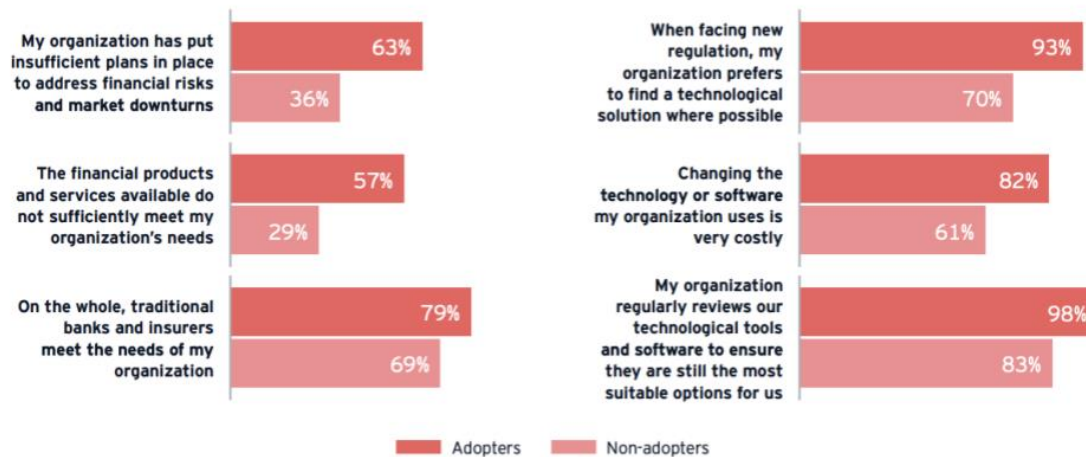


Figure 5 - Analysis of views on risk management, financial needs, and use of technology, by Fintech adopters and non-adopters (EY, 2019)

With the rising adoption rate from both consumers and SMEs, it becomes obvious that the offer in this field is just going to expand. There are a lot of providers accessible just with something as simple as a mobile app, but the incremental use of technology such as Artificial Intelligence and Blockchain can still bring a lot of innovations to the table.

3.1.2 Impact of COVID-19 in financial digital services

To top this organic improvement during the last 5 years, during the ongoing coronavirus pandemic there has been a massive 72% rise in the use of Fintech services in Europe (deVere Group, 2020). Although most sectors are starting to feel the effects of a coming worldwide recession, Fintech services use has rocketed mainly due to an adaption to life in lockdown. The measures taken to help fight back the virus are affecting the way we interact, live, work, and take care of our finances. Entertainment services like Netflix have hit new traffic records during the lockdown, as well as tools for remote working like Zoom. In the case of Fintech some services have reported a spike of even 718% (Saigol & Weeks, 2020).

According to a study by financial advisory deVere Group, the use of cash has been reduced by almost 50% in the days following lockdown announcements, while also the governments encouraged the use of contactless payments during the crisis. For the purpose of this thesis, MT&P would be the category that will be researched.

3.2 User experience design

The term User Experience (UX) has been coined by Donald Norman, a professor and researcher in design, usability, and cognitive science, and one of the main leaders of the field.

UX can be defined as every aspect of the user's interaction with a product, service, or company that make up the user's perceptions of the whole (Courage & Baxter, 2005). UX Design as a discipline is concerned with all the elements that make the interface, including layout, visual design, text, brand, sound, usability, and

interaction. When something is designed the main focus is not on whether the style is beautiful or not, but more on why does the customer need this product or service, how is it going to affect their behaviour, or how is the user going to feel while using the product. No product is an island. A product is a cohesive, integrated set of experiences: from initial intentions through final reflections.

Fintech, as mentioned before, has seen a tremendous growth due to the focus on their users. In terms of UX Design this means that it has a User-Centered Design (UCD) approach. The philosophy behind this is that the product should suit the user, rather than making the user suit the product. This is accomplished by employing techniques, processes, and methods throughout the product life cycle that focuses on the user.

3.2.1 User-centered design

There are three key aspects to UCD:

- **An early focus on users and tasks:** this focuses on a systematic and structured collection of user's experiences. Users should be involved from the moment of the product's inception. The earlier this happens, the fewer fixes are needed during the final stages. UCD should begin by collecting user experiences so designers can get an understanding of what the users want and need, how are they currently working, how they would like to work, and the mental representation of their domain.
- **Empirical measurements of product usage:** the focus here is on classical usability, meaning the ease of learning and effective, error-free use. This can be established by testing prototypes, where some metrics like number of errors or task completion rates can be measured. Performing an usability evaluation in a prototype allows the identification of usability issues in the product in an early stage so they can be fixed before the product is released.
- **Iterative design:** the idea behind this principle is that experiences are collected and the product is designed, modified, and tested repeatedly. It is better to fail early, as it would be much easier to change the User Interface on an early prototype than on a deployed system.

In order to integrate UCD principles into the development cycle of a product, the process can be divided into 4 stages: concept definition, design, developments, and release.

During the first phase, the idea is to explore the possibilities of the product, as well as to research the background and the user. This can be done with primary and secondary research activities, that will be described in the following section. With the information obtained from the research, some initial idea of the potential target can be formed, and that will lead to the creation of user profiles (detailed description of the user's attributes) and personas (fictional individuals created to describe the typical user profile).

Following with the second stage, design, all the information previously obtained should be used to create iterative prototypes. In this stage there should also be some testing on the prototypes using techniques like user walkthroughs, usability testing with low-fidelity prototypes, or execute user experience research activities such as focus groups.

As a third stage, now with enough information of what are the user needs and goals, as well as data from user testing on the prototypes, is the time to develop a first approach on the product.

The final stage, release of the product, usually involves both user experience research activities and other types of empirical measurements. For digital products or services, usability tests are usually executed on live working code. With the release of the product designers can obtain feedback from actual users and refine the product in an iterative manner.

3.2.2 Research methods

A designer's job is to understand their users, which means going beyond the initial assumptions and put themselves in another person's shoes so they can create solutions that respond to a human need.

There are several types of research depending on the goal or the resources at hand, but in favour of not duplicating existing knowledge, it is a good idea to start by performing secondary research.

3.2.2.1 Secondary research

This research method, also known as *desk research*, consists of reviewing existing data to gain a broad understanding of the field. The main advantages of using this kind of research are that it is very time/cost-efficient, it provides a great starting point, and helps guide subsequent primary research.

Existing data, obtained from articles, books, or previous studies, can be used to support design choices and also the context behind the design. In addition to it, secondary research is also used as a way to further validate user insights from primary research and create a stronger case for an overall design. It is acceptable to use secondary research to assess the design, but it is strongly recommended to do primary research along with it to get a better understanding of the concepts surrounding the product/service and to define and validate more relevant and compelling insights. But, exactly how should secondary research be performed? If the product or service does not exist, then the research can be limited to a literature review and competitive analysis. But if it already exists there are more sources of information such as customer support comments or analytics.

3.2.2.1.1 Literature review

When the research is done in an academic environment, the literature that applies to it can be mostly academic too. That means white papers, research articles, and so on. But when the research is for something not that much related to the academic environment, then the available literature becomes poor. In this case, an alternative to move forward is to rely on grey literature.

Grey literature are materials and research produced by organizations outside of the traditional commercial or academic publishing and distribution channels. Common grey literature publication types include reports (annual, research, technical, project, etc.), working papers, government documents, white papers and evaluations. Organizations that produce grey literature include government departments and agencies, civil society or non-governmental organizations, academic centres and departments, and private companies and consultants.

3.2.2.1.2 Competitive analysis

There is a great deal of information to learn from competitors. A competitive analysis lists the features, strengths, weaknesses, user base, and price of the competitors. It includes not only first-hand experiences with the product or service but also user reviews and analysis from external experts or trade publications. It is beneficial to conduct such an analysis in order to understand the ecosystem where the product or service is entering. It also is considered a strong strategy to understand why, if your product is failing, your competitor's are thriving.

3.2.2.1.3 Analytics

When dealing with existing products, there is always the possibility to use the product analytics to understand how it works, what is not working, which part of the process confuses the user, etc. These can come in the form of data extracted by an external service, such as Google Analytics or Full Story, or even as plain log text files in the server. The information that can be inferred from data analytics can determine how long does the user spend in a platform, where are they connecting from, the click path, pages visited, or where visitors leave pages.

3.2.2.1.4 Customer support comments

To continue with existing products, most of them have reviews available online. Extended services like mobile apps depend in a certain manner on public reviews in order to improve and to attract more customers. This information is valuable to learn what are the most common pains for users, as well as what are the areas that make them happy. However, users may not be able to accurately express the problem they have, but maybe they will point customer service into the right direction. This, together with user interviews, can unveil potential issues that are not correctly described in an initial state.

3.2.2.2 Primary research

With the primary research the goal is to come up with new information that will help understand to whom is the design addressed and what would be the parameters to keep in mind for the potential solutions. So as to gather these new data directly from the user, designers can use interviews with individuals, surveys, or even discussions in small groups (also known as focus groups) just to name some examples. It is important to understand *what* is it that should be researched, as well as the kind and quality of data that can be obtained from the use of different methods. For this, it is key to think about *validity* and *practicality*. The information can be reliable without being valid, so the practicalities of the research need to be carefully considered when developing the research. As an example, parameters that should be considered would be the size of the sample, the cost vs budget, and the scale and time employed on the research.

3.2.2.2.1 User interview

Interviews are one of the most frequent methods used for understanding users. In a general way, interviews consist of a guided conversation in which a person (interviewer) seeks information from another (interviewee). They are flexible and can be done as a solo activity or together with other research activities. When conducting an interview, there are some steps that need to be thoroughly prepared beforehand:

- Identify a clear purpose and goal.
- Choose the correct type of interview.
- Prepare the tools that will be needed, if any, during the interview.
- Identify the questions, avoiding those can be vague or conduct to a yes or no answer.
- Test the questions.

3.2.2.2.2 Surveys

Regarding UX, surveys are a quick and moderately easy method of getting data from the users and potential users. They generally consist of two types of questions: open or closed.

In the first case, the data obtained would be qualitative. Open questions help in understanding how the user thinks about a problem. For them, we would need to provide a large writing area so the user can explain the answer correctly.

In the second case, closed questions are used to obtain quantitative data. They do not provide context, motivation, or cause of the answer, and are usually represented by checkboxes, radio buttons, or ranges. The advantage of closed questions over open questions is that it becomes easier to visually represent the sentiment of the users, while with the open questions the answers have to be interpreted but might result in better insights.

3.2.2.2.3 Focus group

This method can be described as an interview in which a small group of participants are brought together to discuss their experiences and opinions towards a topic. For this method, there should be a moderator that will facilitate an open, non-judgemental session.

Focus group sessions usually have a duration of two hours, and it is good to quickly understand user perception over a particular topic.

The key benefits of this method are that the group dynamic brings up topics that might have been overseen by the researcher, and the discussion can stimulate new ideas or encourage participants to talk about things that would have not come to their minds if they were interviewed individually. On the other hand, one possible drawback from focus groups is that the participants may be more susceptible to being influenced by other members of the group.

4 Methodology

As mentioned in previous sections, the research field for this topic will be *digital services on money transfer and payments*. In order to do this, it is important to declare how the research is going to be approached, what methods will be considered useful, and how those methods are going to be applied.

4.1 Main process

The process followed to investigate this field would be the following:

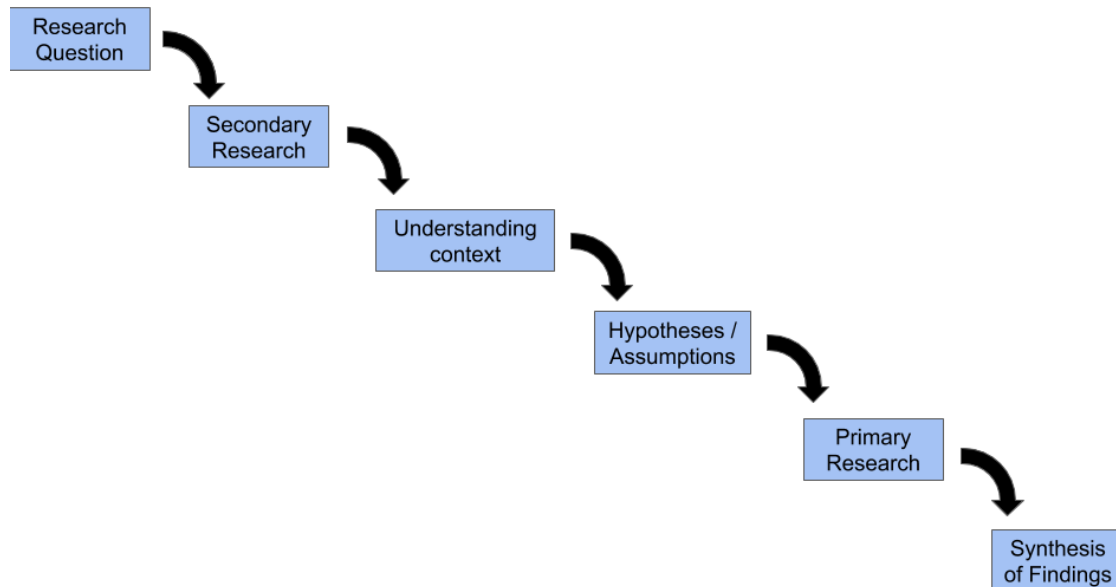


Figure 6 - Research methodology

The initial Research Question (RQ) is “*What are the main practices applied in UX design for financial services*”, specifically in the category of MT&P.

4.2 Secondary research

In this thesis, the research will be for an existing service, but not an individual product. For this, it is possible to use both a literature review approach and information coming from already existing services. From this research, there will be some hypotheses to validate with the following primary research.

4.2.1 Inclusion criteria

Before starting with the research, there is something that needs to be addressed. How should accurate/credible information be found? In this case, the sources do not need to be academic, as the research is focused mainly on the industry. For this reason, grey literature will be accepted and the sources for this research will include:

- International organizations.
- White papers: an authoritative report or guide that informs readers concisely about a complex issue and presents the issuing body’s philosophy on the matter.
- Academic papers.
- Industry studies: from specialized companies or consultancy companies.

- Government studies.
- Articles and videos from professionals in the field: they might come from professionals in the industry of Fintech or they could also come from design agencies as long as they are specialized in financial services.
- Case studies: they provide examples of how the industry is applying good or bad practices.
- Internal reports: studies conducted by the company in which this thesis is taking place.

For all cases, the information should not be previous to 2015 so it can still be considered valid. The reason behind this decision is that during that year Fintech started to grow at a significant rate, achieving initial mass adoption by 2017 (EY, 2019). Studies and statistics will be considered if the demographic is worldwide, European, or Spanish unless some specific area of said studies does not depend on the demographic.

4.2.2 Exclusion criteria

Studies that do not provide sources and methodology in which they were based will be disregarded, as well as those that do not come from sources specialized in the field of financial services. Information older than 5 years old will not be taken into consideration. Those reports specific to regions outside of the before-mentioned options should not be considered because the technological and financial ecosystem is unknown. Studies that are specific to a small demographic (due to age or gender) should not be taken into account, as it would be too specialized for the purpose of this thesis.

4.3 Primary research

For the purpose of this thesis, the initial idea was to base the primary research on two methods: focus group and user interview. The focus group would have been addressed to 3 or 4 participants with a professional profile in the field, with the goal being to validate and find additional insights into what has been analysed in the secondary research. However, due to the lockdown in several countries, moving forward with this method has become more complicated than expected. For this reason, it has been decided to switch to a one-method approach and continue the primary research with only one method: user interviews.

4.3.1 User interviews

There will be two types of user interviews: the first one will be addressed to people from the professional sector and will include participants working in the field of MT&P, while the second type will be addressed to final users.

Based on the secondary research findings there will be some questions that will make more sense to address to customers rather than technical profiles. Some of the questions will be valid for both user segments but the answers might differ, and the comparison between the answers could bring more diverse insights to the overall research.

In both cases, the interview will be semi-structured. This way the interviewees will be allowed to go into each point with as much detail as they prefer. In this manner, questions will remain open-ended and the topics will be covered in an order that goes along with the conversation.

4.3.1.1 Conducting interviews

In order to efficiently conduct the interview, there is a structure that will be followed for both cases:

Topic	Duration (minutes)	Goal
Welcome	3	Explain what is going to happen during the session and some of the rules to keep it organized
Introduction of participants	5-8	[If more than 1 participant] Get participants talking and meeting each other during this introduction. This should focus on making them feel comfortable.
Introduction of topic	2	Transition to the topic; get participants into context by providing a short explanation of the thesis and initial findings
Questions	23-25	Get insights for the specific research questions. Timing will vary depending on the type of participant.
Summary	5	Let participants validate the key findings from the session.
Wrap-up	5	If some topic has arisen during the session, now should be the time to come back to it. Have participants reflect on the session and provide a conclusion statement.

Table 1 - User interview structure

The total timing will depend on the type of interview, but it should be between 38 and 48 minutes. Due to ongoing restrictions on mobility caused by COVID-19, the interviews will be carried away in an online format, meaning there will not be

control over the environment other than the online environment. At the same time, as it is going to be an online session, there is no need for another person taking the role of notetaker or observer. With the permission of the participant, the sessions will be recorded so they can be reviewed later, while reviewing the results. The consent form for this can be found in ANNEXE 1: Consent form.

The main activity materials needed for this would be a device with a camera, and a stable internet connection. Also, during the session, there will be several questions, so some slides that can be shared with the group could be helpful to focus their attention.

4.3.1.2 Personal interview for users

For this instance, the interviews will serve to validate the hypotheses determined after the secondary research and to investigate more on ideas that are more consumer-focused and do not need a technical background to be answered. With this in mind, the objective of this interview will be to get clear information from consumers to contrast with the information from people working in the industry.

Participants of this interview are frequent users of MT&P services. They understand what is happening behind the scenes in a general way, and are able to explain what is missing for them in such services. It will be helpful to also include owners of small businesses so they offer the perspective from an *SME* and a *sole-consumer*. A detailed script with questions and timings for this session can be found in ANNEXE 2: User interview script.

4.3.1.3 Personal interview for professionals

This type of interview will be used to validate the hypotheses determined after the secondary research and to investigate more on ideas that are not clear from the research and might need deeper knowledge about the industry.

For the participants, 3 or 4 should provide sufficient data for the analysis. An ideal participant should have technical background in MT&P services, but it would be considered sufficient if they have some knowledge on the technology and the *how-it-works* behind these services.

Ideally, these will be joined interviews with more than one participant, so this can spark a bit more discussion between interviewees, but not as extensive as in a focus group.

The specific questions and timings for this session can be found in ANNEXE 3: Professional interview script.

5 Results: analysis from secondary research

For the secondary research, the number of items read and analysed goes up to 42. The literature goes from reports from companies like Capgemini, PwC, or EY, to case studies from design agencies specialized in Fintech.

In some cases, some of the information was not completely focused on MT&P, but more on banking and digital banking. In this and similar cases not all the information has been taken into account, only the sections that correspond to the field of study.

5.1 Insights and observations

MT&P services can be divided into three stages: registration, verification, and transfer or payment.

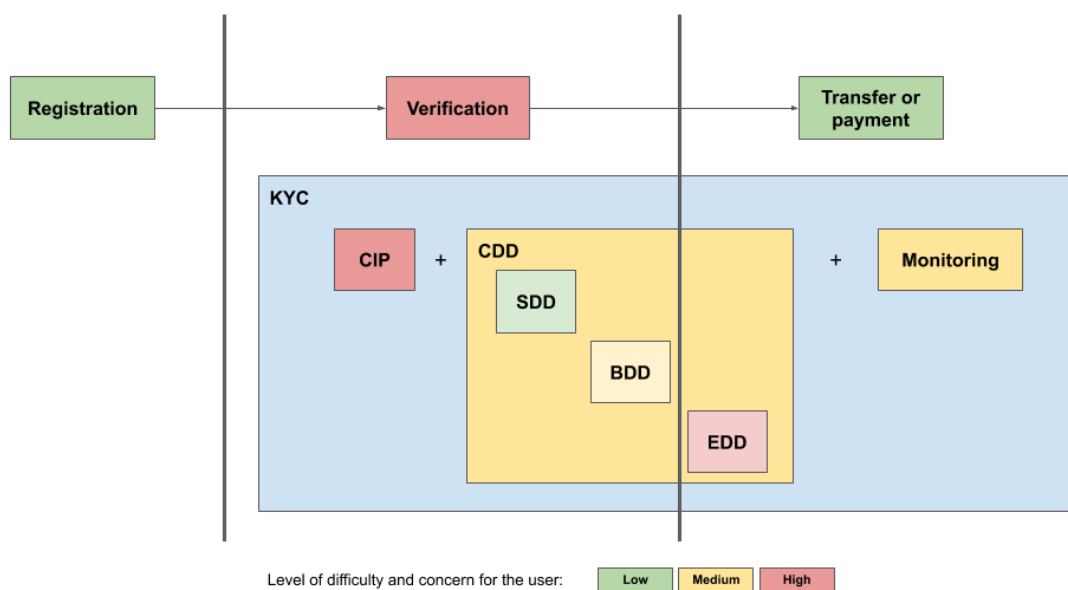


Figure 7 - Stages of a MT&P service

According to research, the stage with the highest drop rate is the verification stage. In this stage is when the user goes through a process called “Know Your Customer” (KYC), in which the customer risk is assessed, and a legal requirement takes place to comply with Anti-Money Laundering (AML) laws. An effective KYC involves knowing the customer identity, their financial activities, and the risk they pose. In order to know this, KYC requires the following elements:

1. Customer Identification Program (CIP): for financial institutions, this is a way to confirm the identity of an individual against official entities. The CIP is designed to limit money laundering, terrorism funding, corruption, and any illegal activity in general. In order to correctly identify an individual, the minimum information needed is the full name, date of birth, residential address, and an identification number. For this, users are asked to upload pictures of their documents (id, passport, or driving license) and also provide a current picture of their face, but it is not always clear how this information is going to be used or processed. Even if that is clear, there is not enough trust in the entity asking for the documents, or the perceivable advantages are not sufficient to share the information.

2. Customer Due Diligence (CDD): in this second stage, the user is not involved. The service performs this process behind the scenes to assess how trustworthy is the user, and depending on the information provided by them it can go three ways:
 - a. Simplified Due Diligence (SDD): the risk for illegal activity is very low and a full CDD is not necessary. An example for this would be a service that will not allow doing payments above a certain limit, that should be low.
 - b. Basic Due Diligence (BDD): with the information obtained from the customer their identity is verified and the risk associated is assessed.
 - c. Enhanced Due Diligence (EDD): in the cases that the risk assessed is not low, there is a need for deeper understanding of the customer activity. In this manner, customers will be asked for additional information and documentation that will vary depending on the country's legal requirements. This process can become a bit confusing for the user if it is not well designed. Usually this will be automatized through the use of chatbots, but research proves that in cases like this one a more "humanized" approach is preferred.
3. Monitoring: once the user starts making payments and transfers, there is an ongoing process of activity monitoring. As this kind of services deal with sensitive operations, it is necessary to oversight financial transactions based on the assigned customer's risk. Depending on their activity this risk might be increased if, in example, there is an abnormal spike in activities, some of the payments or transfers are made in unusual cross-border areas, or someone on a sanction list has been granted access to the account. For all the cases, the customer would go again through the CDD stage and might be asked for more documentation.

Some concepts can already be inferred from the KYC process: users care about their information, there is trust on technology up to a certain level, and the user experience can be so problematic that users will drop.

Insights collected from this analysis have clarified a set of categories that are repeated throughout most of the literature, and which include the concepts inferred from the KYC process:

- How to meet user needs.
- User needs and preferences.
- Trust issues.
- Design recommendations.
- User data management.
- User adoption of technology.
- Use of technology.

In order to create these categories, an affinity diagram has been the perfect tool for grouping ideas until the categories have been clearly formed. The complete affinity diagram with its connecting insights can be further explored in ANNEXE 4: Affinity Diagram for Secondary Research.

Starting by user needs, this is not something that has changed a lot during the last 5 years (from 2015 to 2020). The main concerns from users are transparency, trust, and ease of use. It is true that the level of trust in financial products is higher

now, but it still is one of the main concerns. The growth in use of non-traditional services has been helped by the fact that consumers are now more comfortable using non-bank models and at the same time the loyalty to established financial brands has decreased.

To address the trust issues and security concerns, some services that are backed by traditional banks tend to show which institution is backing them directly to the customer as a sign of soundness, but this creates the opposite effect on consumers as those traditional services are the ones that are not trusted. On the other hand, services that are not backed by traditional institutions are able to disrupt the market with attractive rates and fees, and focusing on transparency and ease of use. There are many services that offer plenty of features, while others focus on only one service. There is not a clear preference on which approach is better, as some reports and articles point out that *“people do not like over-featured services because they are difficult to use”* and others show that services with more functionalities and features also bring a bigger adoption rate.

Continuing with the user needs and preferences, another concern when using MT&P services is the ease of use. When a user does a transfer or payment, they expect it to be fast and easy, adapted to their specific needs, and secure. It is not a problem if the transfer takes a bit longer to complete, as that is something to be expected in many cases, but the process to actually make that payment should be fluid. This clashes with the KYC problem, where users drop the service due to the excessive friction they find during the initial phase, not even getting to the final payment. If the initial verification phase is slow, then that idea grows into the user and makes them think that the overall experience would be troublesome and not worth their time.

With this in mind, it is key to create an easy, quick, and secure way to create an account. There are some good practices that are applied now, such as using available technology to improve the user flow: when a user wants to make a new payment they are sometimes asked to input the same information multiple times, or even look for the needed information outside of the service they are using. As an example of this, Bizum (Bizum, 2020) uses the mobile phone capabilities to improve the payment flow. Users can look for the recipient in their agenda, and that is all the information needed. There is no need to find the IBAN somewhere else, making the transaction easily accomplished.

In the sense of building trust in the service and making it feel secure, there is a bit of a contradiction with the idea of “ease of use”. Users want to finish their task quickly and in an efficient way, but if they finish the task too quickly then there is a chance that they might feel like it is too easy and, therefore, not secure. Making a service easy to use sometimes can feel as if it was effortless, but that does not support building trust. In these cases, it might be good to move from “frictionless” to “programmed friction”.

When it comes to design recommendations, they support the findings on user needs: be transparent, create a smooth experience, and use technology to improve the experience. For this, it is key to have a clear representation of who is behind the service, what they do and why they should be trusted. It is usually a good approach to have a specific area in the main service website with such information,

so when the user looks for this information it appears on their first try, giving the impression of transparency.

Regarding the smooth experience, there are two areas that have to be separated: onboarding and actual use of service. During the onboarding process the user faces the registration and verification stages, which include the KYC flow. One possible approach to improve this could be to change the order in which the user goes through them:

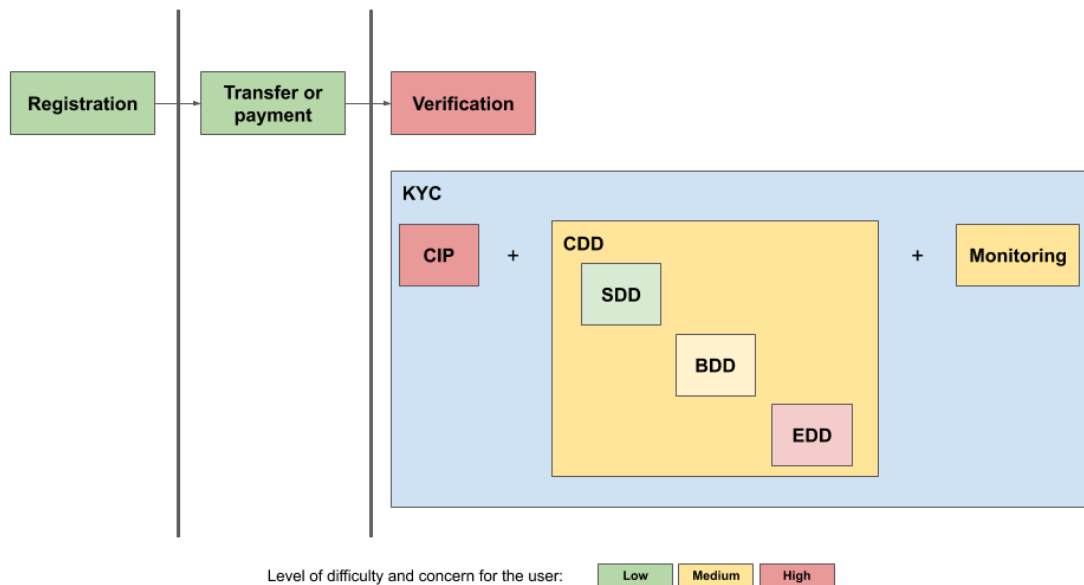


Figure 8 - Alternate order for the stages of a MT&P service

This approach would allow the user to register, play around with the service and discover the functionalities in order to build trust on it, and when they take the decision to use the service, verify their account and go through the KYC flow.

In the case of making a payment or transfer, the user flow can be supported by adding some extra information on the use and management of the user information. In general, users are open to change and new ideas, so offering a little bit more than the minimum would provide the impression of transparency. As long as the user is not overwhelmed by the information, it is good to provide some visual cues of what is happening behind the scenes. Designers can achieve this by showing the information in a progressive way, piece by piece so it is easily understandable, and always using a language that is familiar to the user and not too technical. Examples of this would be a small summary of the user activity during a period of time, or a categorization of their payments by topic.

Data visualization is a sensitive feature to add to a MT&P service because it involves the management of user information, and it can be a small window into their privacy. However, when the information is presented in an engaging and comprehensible manner users do not mind sharing their data. Furthermore, financial services dealing with payments and transfers work with enough information to establish a pattern on a user and provide suggestions on how to improve their expenses. For these kinds of features, the appliance of technology becomes a key factor. When the user is using the service and making regular transfers and payments their operations are being monitored and their risk re-

evaluated in case it increases. In this situation technology such as machine learning is applied, but invisible to the user. That is fine and even expected, as long as there is some kind of feedback at some point when the user learns of what is happening in a general way. Providing constant and regular feedback in Fintech is a vital part of building trust and removing doubt in the service. A bigger integration of technology in Fintech has determined the increase on the adoption rate of MT&P services during the last five years. Now there is more trust in technology and users are open to the change that this brings into their lives.

In the case of MT&P, there are plenty of innovations in technology that are implemented into this field. The use of big data and advanced analytics make it easier for the industry to understand user behaviour, what are the most common expenses, and adapt their offers to user needs. When it comes to the customer, small integrations can improve their experience for the better. For example, some services can use GPS to find other users nearby and send them money without the need of sharing a phone number or IBAN. In the year 2015, the technology trends with more possibilities of growth were Big Data, Artificial Intelligence (AI), and the Internet of Things (IoT). With time, both Big Data and AI have seen an important growth in their appliances in Fintech, but IoT has not scaled as expected. This is due in part to how the technology is presented to the user. In the case of IoT, the case of wearable devices is a clear example of adoption failure. Wearables devices are still seen as futuristic, and users are still sceptical of what appears to be emergent technology. In this case, there is also a possible debate: research shows that users are interested in versatility, they prefer services that can be used anywhere (device-wised)

Next to AI and Big Data, another type of technology that has seen an enormous improvement and inclusion into MT&P services is biometric. Nowadays more services include the use of biometrics for security and identification, being the most adopted fingerprint identification and facial recognition. The latest is usually expected by the user, and preferred over traditional security measures like PIN codes or passwords. Facial recognition accentuates the feeling of security, therefore increasing the trust on the service. Current trends in technology advances indicate that "*the next big thing*" will be Augmented Reality (AR) and Virtual Reality (VR), but this does not correspond to MT&P services yet. In this field, both AI and Big Data are still the top candidates to drive change and innovation, followed by Cloud.

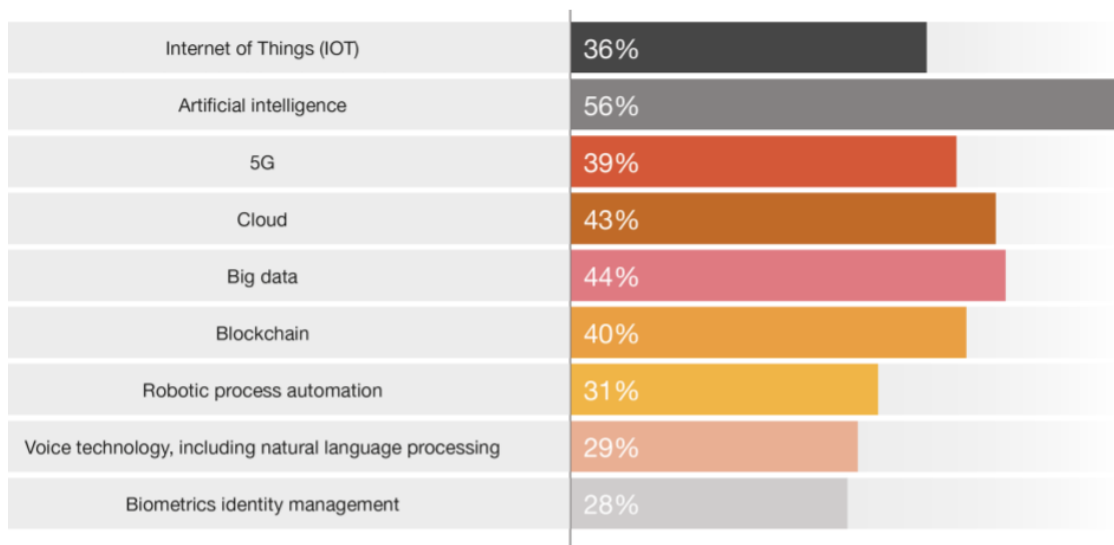


Figure 9 - Technologies that leaders think will drive change, adapted from Global Fintech Report 2019 (PwC, 2019)

In terms of user preferences, it varies depending on the type of user. For individuals, which technology is used is not really important. Users do not care to which API (Application Program Interface) does the service connect but, as mentioned previously, it is considered good practice to provide some kind of feedback of what is happening. With this, it can be stated that depending on the current use and evolution of technology in the Fintech ecosystem compared to how they are perceived by general users, there are three categories that would help to predict which technologies are the ones with more capabilities of growth: emergent, mature, and dropped.

Finally, in terms of how accessible are MT&P services, there is no mention of accessibility-related practices or recommendation in the vast majority of the reviewed literature. This might indicate that it is not being considered as a factor to keep in mind when designing this type of service.

5.2 Impact of COVID-19

As mentioned before, the use of MT&P services has increased mostly due to forced lockdown around the world but, according to research, there is an specific area in these services that has been affected more than the rest: identity verification and security.

One of the many measures adopted to avoid contagion of COVID-19 is to wear a mask. This measure was not clear to work at an initial state but with some time it has been adopted by many governments and it is most likely to be mandatory to wear masks in public areas for a long period. With this, services that use facial recognition as a way to increase security need to adapt to the new circumstances in order to provide a good experience to the user. It can be argued that a solution is to momentarily remove the mask, use facial recognition, and wear the mask again, but the action of removing and wearing the mask slightly increases the risk of contagion. However, some companies have already developed some type of solutions or workarounds to confront this problem.

In the case of iPhone mobile devices, users can train the facial recognition system wearing half the mask.



Figure 10 - An iPhone user training the facial recognition system wearing a mask (Potuck, 2020)

While this option works, removing the mask partially conveys the same risk as taking off the mask momentarily. In any case, despite being able to train the iPhone system in this way, the official position from Apple is that “Users can still unlock their devices while wearing a mask by entering their passcode”, therefore no solution regarding facial recognition is provided by the company.

Other companies like Xiaomi are developing masks that will allow users to utilize facial recognition systems. In their case, they are focusing on developing masks that can adapt to the technology instead of modifying the technology itself. Still in the prototype phase, their Aeri mask does not compromise facial recognition because they are built with a transparent material that will not become an obstacle to the main camera.



Figure 11 - Prototype of Xiaomi's Aeri mask (Sanz Romero, 2020)

As a third and final example, there are companies that have been created due to the need of solutions to problems that have arisen because of COVID-19. *Resting-risk-face* is a new company whose product is a surgical mask with your face printed on it.



Figure 12 - Example of a person wearing a mask with their face printed on it (Face ID Respirator Masks, 2020)

The approach is simple: upload a picture of your face, preview it in a mask, and print the picture in the mask. Again, the solution is not related to a change in technology, but in ways to deceive the tech while keeping the user safe of risk.

5.3 Findings of secondary research

With the results from the secondary research, several topics and questions can be defined to be studied in the primary research as hypotheses:

- There are four opposite ideas and design approaches:
 - “Research shows that some reports and articles It is good to add some programmed friction to the user” VS “Frictionless user experience is always better”.

- “Over-featured services are not preferred because they are difficult to use” VS “More features implies a bigger adoption”.
- “Technology is important to SMEs and unimportant to particulars”.
- “User goes for versatility of use in different and modern devices, but still does not use those same devices for MT&P services.”
- Which type of technology is considered a barrier and which is considered a facilitator for user adoption.
- Validate the reasons behind the peak of user adoption in the last five years.
- Validate identified pain points during the *KYC* process.
- Understand the user’s level of trust and understanding of the service.
- Understand the real concerns of consumers about emergent technology in these services.
- What would be the best approach to increase trust of users into MT&P services?
- How should getting the right balance of human and non-human interaction be approached?

As mentioned in the analysis of secondary research, the findings and insights can be divided into seven categories. For some of these categories, the following hypotheses will be validated or refuted with the interviews to both users and professionals, as well as the rest of the insights from the secondary research:

- User data management:
 - Even though the *KYC* process is troublesome, it is still something expected and not considered a problem.
- Trust issues and concerns:
 - There is an implicit basic level of trust in the service before using it, no matter if it is backed by an established institution or not. This trust does not need to be created, it needs to be maintained.
- How to meet user needs:
 - Programmed friction will slowly disappear.
- “Use of technology” and “user adoption of technology”.
 - Emergent technologies adoption problem is the lack of knowledge about their application.

Additionally, and specifically for the interviewees with professionals in the sector, there will be an analysis of the current situation provoked by COVID-19 and how it is going to affect the industry.

6 Results: analysis from primary research

From the Findings of secondary research, there were several insights that, in order to be further studied, were more appropriate to be asked to specialized professionals working on this field, while others could be better addressed to day-to-day users. As such, there have been a total of 4 interviews to users, and 2 interviews to professionals. The scripts used for each type can be found in ANNEXE 2: User interview script and ANNEXE 3: Professional interview script.

6.1 Information of participants

In the case of users, participants are of the age of 25 to 32 years old, all residents in Spain but from different nationalities. Two of them are business owners or former business owners, and all of them have been using digital MT&P services since approximately 5 years ago. The results will be considered relevant if three or four users agree on the same idea.

	Participant 1	Participant 2	Participant 3	Participant 4
Gender	Female	Male	Male	Male
Age	25	30	32	29
Job position	UX Designer, Front-end Developer	QA & Sustainability Manager, Former Business Owner	Boxing Trainer, Small Business Owner	Software Analyst
Company	Archibus	Tabiexpert Espacios Móviles S.L.	Buzz Fitness	Ford Motor Credit Company
Which MT&P services uses	Revolut, ING, Sabadell	Revolut, ING, Sabadell	Transferwise, BBVA	Twyp, Bizum, Paypal
Language of interview	English	Spanish	English	Spanish
Nationality	Romanian	Spanish	British	Spanish/Polish

Table 2 - Details of participants from user interviews

On the other hand, the participants for the professional interviews come from the industry of financial services. They will be able to give a different perspective to some of the topics, and discuss the ideas that, from the secondary research, were not completely clear. In this case, the participants received a deck with the

questions of the interview beforehand so they could be better prepared to answer properly.

	Participant 1	Participant 2
Gender	Male	Female
Age	28	29
Job position	Product Manager	UX Designer
Company	Bankify	Bankify
Language	English	English
Nationality	Czech	Pakistani

Table 3 - Details of participants from professional interviews

6.2 Analysis of interviews with users

From the interviews with these participants, it has been established that the most common reason for adoption is immediacy of payment. When it comes to payments and transfers, users expect their operations to be quick and easy to do no matter which service they are using. At the moment of choosing a service, there are two main things to keep in mind: fee and recommendations.

With regard to fees, this becomes important mainly when talking about international payments. When moving to or visiting a foreign country, users tend to look for alternatives of payments that would not increase their fees a lot when compared to the service they use to do the same operations nationally.

All the interviewees decided which services to use from recommendations of friends and family. A service with an attractive fee but no recommendations will be a second option in front of another service with a slightly higher fee but good recommendations from friends and family. In this sense, the trust that a user could have towards a service will also be linked to the trust their friends and family have with those same services.

When asked about what should happen for them to stop using a service, there are two main possibilities:

- Something happened with their money: there's a severe fragility of trust when it comes to services handling the user's money. This happens not only with new services like challenger banks, but also to traditional ones or those backed by bigger institutions.
- Something happened with the money of someone close to the user: circling back to recommendations, bad experiences are often shared more frequently than good ones. For this, the user will distrust services that are known to malfunction to people that are close to them, even in the cases that nothing has happened to the user themselves.

To continue with the topic of trust, when interviewees were asked about the KYC process the answer was unanimous: this verification process, although sometimes boring or troublesome, is seen as necessary and preferred to have. It is understood by the user that this process is done to comply with certain legislation, and it increases the feeling of secureness. In cases when users are allowed to register a service without providing any documentation, for example by using social media authentication or just an email address, they say it would be preferred to go through the same verification process as in KYC because, again, they would feel more secure. In their experience, when asked for providing documents, there is always a clear description of why that is necessary. With this it can be inferred that transparency remains an important issue to the user.

Regarding the topic of the amount of features in a service, according to the findings in the secondary research consumers do not like over-featured services, while for SMEs more features in a service lead to a higher adoption rate. From the point of view of consumers, having more features available is not something that bothers them unless it prevents them from doing the main action. And for SMEs, if it works for particulars then the use tends to be extended also to their business.

During the interview it was mentioned that, apart from the main task of payment, users expect to have some kind of data visualization integrated into the service. They want to know what is happening with their money, in which services they are spending more, and how much they have spent in the last two weeks. Giving this kind of feedback to the user is key to engage the user and show transparency on their operations. Another example of an extra feature that was mentioned several times during the interviews was an investing option. This can be investing in stock or in cryptocurrencies. Despite this becoming more commonly seen in MT&P services, it is still something that, according to users, is interesting and would like to know more about it but they do not use it that much.

Moving on to the use of technology, users would prefer less human-to-human interaction and advance towards a more independent use of the service. They are looking forward to being quick and independent when using these services, and having to contact another person is viewed as something slow and, sometimes, even as a failure from them.

It was mentioned in the secondary research that users like to use services that are versatile and can be used from all types of devices. This seems to be partially true. When it comes to MT&P, the main type of devices used are mobile phone and desktop computer/laptop. Users like to have a service that they can use from these two options, but more than that is seen as interesting but not really useful. Three of the users have experience with voice assistants that they use every day for small and very specific tasks, and the same happens with wearable devices such as smartwatches, but they would not use these same devices for MT&P because there is a feeling of lack of control over the operation. Although these technologies are established into their day-to-day activities, their application in other fields that might be unknown to them raises some concerns. *“What is the extra value?”; “Is it more secure if I use that other technology?”*

In general, with services that involve their money, if it works as expected then that is considered good enough. What happens and how it happens in the background does not concern them. During this section of the interview, the participants were

shown a 24-second video of a data visualization concept using augmented reality. After watching the video, they went over the topic a second time. In this case, there is a bit more interest in the technology. Users would like to try it but it raises the same concerns: *“What is the added value?”*; *“Is it more secure?”*; *“If I use AR, is my information still private?”*.

The final thought on this topic is also common for all participants: the technology behind the MT&P service that they use is not important to them as long as it works as expected, so if there was more focus on the technology it would feel like that is covering for other faults and would create a sense of distrust.

6.3 Analysis of interviews with professionals

In regard to the professional interviews, the interviews were not as fluid as the ones with users because in this case there needed to be a certain structure. For that reason, the results will be divided into the main topics of conversation.

6.3.1 Ease of use

Regarding this, the idea from the secondary research that needs to be researched is the addition of programmed friction to the user flow to create a false impression of security. According to the interviewees, this is good for traditional users because they are used to having this friction. For some time now, services working on transfers and payments have carried with them some kind of complexity of use, so if the user experience is too smooth then users will not trust the service. This is changing for new users, as they are more used to digital services in their day-to-day activities and there is no need for an additional programmed friction in their flow. They usually know what they are doing, how the service works, and why it works in a certain way, being the best option in their case to approach the design aiming for a frictionless experience. Nevertheless, when it comes to actions that involve the direct operation with their money, is it considered a good practice to add friction in the form of confirmation messages. This is not to increase the impression of security, but to make sure that the user wants to finalize that action.

6.3.2 Particulars VS SME

When it comes to comparing the use of MT&P services from particulars and SMEs, one thing becomes clear: there is a big differentiation in their preferences because their needs are completely different. This means that the approach to each type of client is not as a service with two types of consumers, but two products aiming for their specific customer segment.

Regarding the amount of features offered in the same service, SMEs do need more features because their operations involve management responsibilities and a need for more control over the operations. Also, SMEs might need more features in order to integrate better with multiple services. One of the findings of the secondary research states that services with more features tend to confuse individual users. As discussed during these interviews, the reason behind this finding might be that the studies focused on more traditional services, but services that address a younger segment adapt better to this type of multiple-feature organization and they do not have that problem with their users.

Moving on to the use of technology, findings stating that SMEs do care more about what technology is involved in the service might be because SMEs need to

understand it also in order to evaluate the real need of using that service. Maybe the service uses technology that is too complex for their needs and they can choose a cheaper service with less capabilities but still adapted to their needs. In the case of particulars, it is confirmed that there is no real interest in the technology behind a service as long as said service works correctly

6.3.3 Use of technology

Both interviewees agree on the technology being a facilitating tool when it comes to the type of technology. Its integration into transfer and payment services facilitates its adoption. Artificial Intelligence and Big Data, which are considered established technology in this ecosystem, are essential because users expect to have some analysis of their previous actions available for them to review. And when it comes to emergent technologies, they are not considered barriers because users are now more educated on them so they actually want to try them. But then, when is technology seen as a barrier for adoption?

In this case, again one of the main limitations depends on the generational gap. Younger users are more and more used to interacting with new technology, but that is not the case for older segments of consumers. In their case, the more they take to learn how to use new technologies, the bigger a barrier it will become for them.

6.3.4 Trust and transparency

For this topic, the question for the interviewees was how can the user's trust into MT&P services be increased. From the secondary research, the concept of transparency is repeated over many reports, and so it is confirmed during these interviews. Keeping the user informed of what is happening during the process is a key factor to take into account. However, it should also be kept in mind that trust in MT&P services is not a binary issue, it will depend also on the amount of money with which the user is operating, as well as the size of the company behind the service, and the time that they have been operating. Usually, if there is a big company or institution backing up an MT&P service, there is no problem for the user on trusting them with their money, but their concerns swifts to their data. Also, in this case it is not a matter of creating trust within their users. They trust them, so the focus goes into maintaining this trust. On the other hand, upcoming companies like challenger banks do need to build trust with their user base and in their case, they do have the user concern of "is my money safe?" but are better trusted with their personal information.

Finally, new players that might be trusted with some information for one service, like WhatsApp, Facebook, or Apple, are not assured to have the user trust also with their money. Trust is not transferable between services even inside the same companies.

6.3.5 Trust in tech

For this topic, the point of discussion is on how to approach having the right balance between human and non-human interaction, and more importantly, how will this evolve over time.

The trend is to go for a non-human approach as much as possible, in order to automate processes and increase the efficiency of the service. The onboarding

process is the one where customer support is most commonly used, but as stated before, there is a tendency of getting rid of this need for human-to-human support. The user looks forward to becoming independent when operating a service so, from the perspective of designers, there should be some educational elements that can point users on what should be done to complete an action without any kind of extra support or friction. However, technology is not fully ready to cover all possible cases that can arise, so there should always be an option available to still go for that human interaction in order to solve a problem. During the last five years, the use of chatbots for these situations has rocketed and it is common for the user to find themselves talking to a computer instead of a real person when contacting customer support. This is good in the sense of process automation, but if the chatbot is not able to imitate humans perfectly this can become frustrating for the user.

6.3.6 Impact of COVID-19

Lastly, the health crisis that the world has faced during the year 2020 has had a clear effect on the industry. There is a clear boost in innovative initiatives. It can be observed that the same pattern for growth in Fintech is repeated: a crisis. There has been an important hiatus on markets and businesses need to adapt quickly, meaning that most of them have to move their services into digital ecosystems. This has highly affected MT&P services as most of the operations, if not all, had to be done digitally from one day to another. Nonetheless, some issues have arisen with this. These services are not inclusive enough, finding a big chunk of their new user-base coming from people that are not used to working with digital services and might feel lost or even not able at all to complete simple tasks. The industry needs to adapt fast and improve the digital offer into every aspect, as it has been proven that many businesses can also work in a digital environment and they do need to accelerate this migration.

7 Discussion (hypotheses validation)

With the results of the primary research from both users and professionals of the field, the hypotheses declared after the secondary research can be validated or refuted:

In terms of the KYC process, it is clear from both consumers and professionals that it is not an easy flow to go over, but it is necessary and that is actually good. The user expects to go over some kind of identity verification process before putting any money into the service, and in the cases when they did not go over this process, they would like to do it. It increases both transparency and trust from consumers to the service so it is not considered a problem or something to avoid.

About trust issues and main concerns, the hypotheses of having an initial trust into MT&P services with no regard of who or what is backing it up is false. Although users tend to prefer new services not linked to traditional institutions, in this case the trust with the service needs to be built starting from scratch. With traditional services there is some distrust due to the economical crisis, but in general for the user it is still enough to put their money at risk, as it would be a small risk, and this trust only needs to be maintained and not built from scratch like in the other situation.

Regarding programmed friction, the main hypothesis is that the programmed friction practices that take place now are going to slowly disappear. This is validated when referring to younger users that are more used to handle digital services for any kind of activity, but for more traditional users or new users of an older age it might be good to keep using this approach. With the integration of technology and the automation of more and more process, MT&P should be able to adapt to their specific segments and act according to their specific needs.

On the topic of use of technology and its user adoption, the hypothesis is that emergent technologies are not that easily adopted by users because there is a lack of knowledge about their application and how they would work. In the sense of lack of knowledge, it is confirmed by users that they would not know how new technology can be integrated into MT&P services, but when shown a possible example of that then they might get interested but remain with some concerns on *“what is the extra value?”*, *“is my information secure?”*, *“what about my privacy of data?”*. There is a slight interest on trying new technology, but not a real one into applying it to the MT&P field. On the other hand, from the professional perspective this is viewed as something that will be integrated seamlessly, and it is considered an issue of lack of awareness on the use and capabilities of the technology. In the long term, users will use this technology because it will be slowly integrated into the services so consumers can learn how to operate it and become familiar with it over time.

With this information, there can be a clearer definition of what is the typical Persona who will be using these services: an independent young person (25-35 years old), accustomed to doing their daily activities digitally when possible, concerned about their habits, with a fair drive to try new technology, and who likes or would like to have some control over their expenses. A deeper representation of this Persona can be found in ANNEXE 5: Persona.

8 Final conclusions

Companies within the industry of MT&P services are adapting to user new and evolving needs. After the economical crisis from 2008, when these services started innovating and growing, what the user was looking forward to finding in these services was transparency. The industry has adapted so fast and so well to this that concepts like that are not something that users just would like to have, but something that is a must in the design and development of anything within this field. Now, what users want is a more noticeable ease of use, fast working services, and the possibility to measure themselves and their behaviour with payments, so they can change them if necessary.

When it comes to technology, the more a user is involved with emergent tech in their everyday life, the easier it will be for them to take advantage of it when it gets integrated into financial services that aim to a specific activity.

Nevertheless, the same way a crisis was considered one of the main triggers for innovation in this industry, a new crisis that has arisen in the last 6 months has brought to light areas of improvement that should receive more focus in the following years.

The forced lockdown that most of the world population has endured due to the COVID-19 pandemic has made all kinds of industries move into a digital space, from small local commerces to big established companies. And in the same manner, consumers have had to change their habits into the use of digital options. This brings an opportunity for innovation in the industry. With a good application of technology, the barriers of adoption for users can be tore down. Those users that are still not giving full capability of digital financial services should be the focus on next iterations. The future of design for MT&P services needs a more ethical and inclusive approach. It is proved that during the last 6 months there has been a peak in the use of these services, but also a need for adoption for many different types of users.

The same way that the last crisis carried with it a boost on innovative initiatives, the current one will provoke the same increment on innovation. This will convey an enormous growth on the financial digital ecosystem that will focus on offering their service to a wider variety of users. This need to adapt to more diverse user segments, the rolw of UX designer will be more demanded, but it will also need a deeper understanding of inclusive and ethical design, not as specialized in a sole type of technology or customer segment as it could be now.

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10 Acronyms

AI: Artificial Intelligence

AML: Anti-Money Laundering

API: Application Program Interface

AR: Augmented Reality

BDD: Basic Due Diligence

CDD: Customer Due Diligence

CIP: Customer Identification Program

DoD: Definition of Done

DoR: Definition of Ready

EHH: Enhanced Due Diligence

IBAN: International Bank Account Number

IMF: International Monetary Fund

IoT: Internet of Things

KYC: Know Your Customer

MT&P: Money Transfer and Payments

PB: Product Backlog

PO: Product Owner

QA: Quality Assurance

RQ: Research Question

SDD: Simplified Due Diligence

SM: Scrum master

SME: Small and Medium-sized Enterprise

UCD: User-Centered Design

US: User Stories

UX: User Experience

VR: Virtual Reality

11 ANNEXE 1: Consent form

The purpose of this study is to **understand the use of money transfer and payment services**.

Your participation in this study will help **Renato Pinto** understand, contrast, and validate results from previous studies.

Your participation in this study is voluntary: you can refuse to take part at any time, you can take a break at any time, you can ask questions at any time.

You will be asked to answer questions related to **your use and understanding of money transfer and payment services**, and you will be recorded during this session.

The recording of your session may be watched after the session is over in order to understand better your answers to the topic. No one else but **Renato Pinto** will see the recordings.

The answers and comments that you give during this session will be used and published in a Master Thesis, but the data will be anonymous. This means you will not be identifiable and your comments will remain confidential.

To take part in the research, please sign this form showing that you consent to **Renato Pinto** collecting these data.

By signing this document, I, _____, agree and understand the following points:

- The researcher has explained the purpose of the research to me.
- I have had an opportunity to ask questions about the study.
- I understand that I can leave at any time without giving a reason.
- I understand that my voice, my face, and the computer screen will be video recorded.
- I understand that the recording may be viewed in the future.
- I understand that my comments are confidential.
- I understand that the content of this session will be used only for the purpose of this study.

Date: __ / __ / __

Your signature: _____

12 ANNEXE 2: User interview script

12.1 Welcome (2 minutes)

Hi *[INTERVIEWEE]*. I want to start by saying thank you for joining the interview, this is very helpful for my thesis.

Before we begin, I would like to go over some information just to make sure that I cover everything so, to give you some context for this session, I will briefly go over what we're doing today:

I'm doing a study on the use of financial digital services, specifically on the category of *money transfers and payments*. I have done some research already and got some results that I want to validate with actual users like you. The session should take around **35** minutes.

The first thing I want to make clear is that there are no right or wrong answers, I want to get your perspective on the topic. You cannot say anything wrong here. In fact, this is probably the one place today where you don't have to worry about mistakes.

If you have any questions during the session, just ask them. I may not be able to answer right away since I want to get your perspective, but if you still have any questions when we're done I'll try to answer them then. And if you need to take a break at any point, just let me know.

This session is going to be recorded, and its content is going to be used to help me with my thesis. And it helps because then I don't have to take many notes.

Do you have any questions so far?

12.2 Introduction (3 minutes)

We are going to talk about financial services, specifically the services related to *money transfers & payments*. There has been previous research that brought some topics to light, so we are going to focus on them. **Tell me about the services you use for MT&P.**

12.3 Questions (total of 23 minutes)

12.3.1 Key Topic 1: User adoption (8 minutes)

- When did you start using MT&P services?
- Why did you start using these services?
- Was there some trigger that pushed you into adopting the use of digital services for payments or something more organic?

12.3.2 Key Topic 2: KYC (5 minutes)

- For financial services, you have to verify your identity by providing documents. How secure do you feel this is? Why?

12.3.3 Key Topic 3: User retention (5 minutes)

- Once you start doing payments from an app, what makes you keep using this service?
- What would you consider a complete deal-breaker?

12.3.4 Key Topic 4: Use of technology (5 minutes)

- How do you think new technologies will be applied to these services?
Specially emergent technology such as VR/AR.

12.4 Summary (5 minutes)

Ok, so to sum up:

[Briefly go over the user answers]

Do you agree with that as a summary?

12.5 Wrap-up (5 minutes)

Is there anything we didn't talk about that you would like to mention?

12.6 Closure

Ok! With that, we got to the end of this session. I'm going to stop recording now. Thank you very much for your participation in this, it is going to be very useful for my thesis.

13 ANNEXE 3: Professional interview script

13.1 Welcome (2 minutes)

Hi *[INTERVIEWEE]*. I want to start by saying thank you for joining the interview, this is very helpful for my thesis.

Before we begin, I would like to go over some information just to make sure that I cover everything so, to give you some context for this session, I will briefly go over what we're doing today:

I'm doing a study on the use of financial digital services, specifically on the category of *money transfers and payments*. I have done some research already and got some results that I want to validate with you, an expert in the field. The session should take around **40** minutes.

The first thing I want to make clear is that there are no right or wrong answers, I want to get your perspective on the topic. You cannot say anything wrong here. In fact, this is probably the one place today where you don't have to worry about mistakes.

If you have any questions during the session, just ask them. I may not be able to answer right away since I want to get your perspective, but if you still have any questions when we're done I'll try to answer them then. And if you need to take a break at any point, just let me know.

This session is going to be recorded, and its content is going to be used to help me with my thesis. And it helps because then I don't have to take many notes.

Do you have any questions so far?

13.2 Introduction (3 minutes)

We are going to talk about financial services, specifically the services related to *money transfers & payments*. There has been previous research that brought some topics to light, so we are going to focus on them. **Tell me about your relationship with the topic: your company, your job, what do you do on a typical day at work.**

13.3 Questions (total of 30 minutes)

13.3.1 Key Topic 1: Ease of use (5 minutes)

- In different articles and reports, there is this idea of creating a smooth and fluid experience for the user that clashes with another practice in which making the process a bit harder at some points increases the impression of trust in the service. **What would you say is more important and how would you approach this balance of frictionless and non-frictionless experience?**

13.3.2 Key Topic 2: Individuals vs SMEs (5 minutes)

- According to research, the amount of features integrated into the service has opposite effects in individuals and SMEs. For SMEs, more features integrated increases desirability, but in the case of individuals then the services tend to become confusing. **Why do you think this happens?**

- There also seems to be a difference in how technology is seen. Consumers care less about the technology than SMEs do. **What are your thoughts on this?**

13.3.3 Key Topic 3: Use of technology (5 minutes)

- **What would you describe as a barrier for consumers to start using money transfer and payment services? And what about SMEs?**
- Currently, the most accepted, and considered as established, technologies in money transfer and payment services are Artificial Intelligence and Big Data. Others like biometrics, IoT, or AR/VR are not so integrated yet. **Do you think these technologies act as a barrier for adoption or more like a facilitating tool? Why?**

13.3.4 Key Topic 4: Trust and transparency (5 minutes)

- Studies show that users now care a bit less about the technology using their data, but are still suspicious about who is using it. **How do you think we can increase the trust of users into MT&P services?**

13.3.5 Key Topic 5: Trust in tech (5 minutes)

- Following up with the use of user information and the small increase in trust of the technology. There are still some cases where the human touch is preferred (customer service, onboarding...). **How do you approach getting to the right balance of human and non-human interaction?**
- **How do you think this will evolve?**

13.3.6 Key Topic 6: Impact of COVID-19 (5 minutes)

- During the last months, the world has been adapting to a new situation provoked by the COVID-19 pandemic. For financial digital services, due to lockdown, there has been an enormous increase in the number of users that, now that they are not allowed to go to their banks, have adopted new ways of handling their money operations. **Apart from this growth of the number of users, how do you think the COVID-19 impacts this kind of services?**

13.4 Summary (3 minutes)

Ok, so to sum up:

[Briefly go over the user answers]

Do you agree with that as a summary?

13.5 Wrap-up (5 minutes)

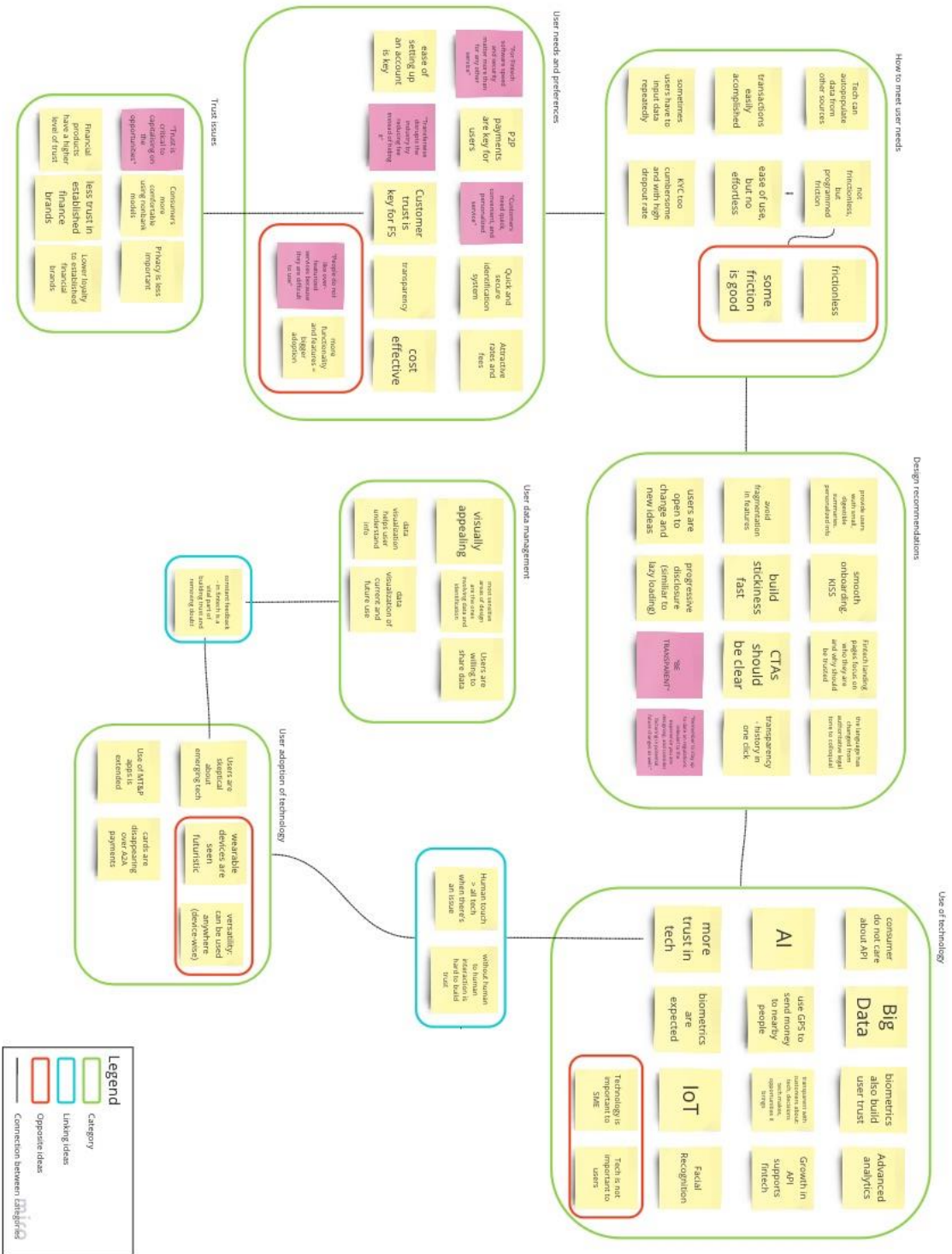
Is there anything we didn't talk about that you would like to mention?

13.6 Closure

Ok! With that, we got to the end of this session. I'm going to stop recording now.

Thank you very much for your participation in this, it is going to be very useful for my thesis.

14 ANNEXE 4: Affinity Diagram for Secondary Research



15 ANNEXE 5: Persona

Sergio López - 1/2



Bio

Sergio is a Spanish student at Universidad Politécnica de Madrid. He moved to Madrid for his bachelor studies and decided to stay to work and to start a master degree.

During the weekends, he gets together with friends, most of them foreign students, and goes out for dinner and maybe party in a club. Usually, one person pays for all and later everyone pays back their part to that person.

Nationality: Spanish
Sex: Male
Age: 28
Marital status: Single
Education: Bachelor Degree on Computer Science
Occupation: Data analyst intern at Izertis

Sergio López - 2/2

Goals:

- To finish his studies
- To save money to go on vacation

Frustrations:

- He does not have a clear understanding of his expenses
- When he pays back to his friends it takes too long and it seems as he is not paying

Personality:



Requirements & expectations:

- Quick international payments
- Analysis of his expenses
- Ability to make payments from his phone

Brands & influences:

- Apple
- Tesla
- Transferwise
- Revolut

