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TelegramPay

- Innovation, Entrepreneurship & Finance -

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With this project we explore the possibility of merging two fundamental aspects that characterize our everyday life: the *emotional* aspect (e.g. staying in touch with people around us) and the *economic* one (e.g. making purchases in online or physical stores).

The choice of the company to analyse was not an easy one. We thought, in the early stages, about a few dozen companies to "innovate", only to realize that, to communicate, we were using the very application that needs an extra gear to make its mark: *Telegram*. For this reason we created **TelegramPay**, a user-friendly, easy-to-use and secure payment service that takes its cue from *Revolut* and goes beyond, including exclusive features never introduced before.

We organized this report in chapters: in Chapter 1 we introduce Telegram on the fly, we talk about the founders and their wishes, why Telegram is better than other messaging applications and its main features; in Chapter 2 we briefly introduce Revolut and describe our TelegramPay services. In Chapter 3 we address the Business Idea Evaluation to understand who are the end users interested in our product; in Chapter 4 we present three different types of Persona. After discussing the Entrepreneurial Idea Feasibility in Chapter 5, Chapter 6 tackles a detailed TAM Analysis; we, then, proceed with a showcase of the types of cards offered with TelegramPay and conclude with the chapter titled "Financials & Business Model".

We have approached this project with passion and seriousness, we hope that our idea will leave a mark and that this project will be to your liking. We wish you a good reading!

Chapter 1

Analysis of the selected company: *Telegram Messenger LLP*

Telegram Messenger LLP (worldwide known as *Telegram*) is one of the most popular cloud-based instant messaging and video telephony applications available for Android, iOS, Windows, macOS and GNU/Linux.

Telegram is an open-source project developed in Russia in 2013 and officially released on August 14 of the same year. This application is completely free for the user and there are no one-time purchases or subscriptions needed in order to use it.



Figure 1: Telegram’s user interface.

Telegram was created by the brothers Nikolai (programmer and mathematician) and Pavel (entrepreneur) Durov, previously founders of the social network VK (a Russian equivalent of Facebook) that they left when it was acquired by the Mail.ru Group.

As the two founders stated: "Telegram is primarily focused on privacy"; every content inside the application (e.g. messages, photos, videos or phone calls) is encrypted in order to ensure confidential information between the users.



Figure 2: Nikolai (left) and Pavel Durov (right).

Telegram’s security model has received notable criticism by cryptography experts: they criticized the general security model of permanently storing all contacts, messages and files together with their decryption keys on dedicated servers by default and the non-existence of an end-to-end encryption for messages. Pavel Durov, CEO of the company, argued that, in this way, third-party unsecure backups are avoided and all users are allowed to access messages and files from any device.

Many critics deny that Telegram is more secure than mass market messengers like WhatsApp (Telegram’s main competitor) because Zuckerberg’s application applies end-to-end encryption to all of its traffic by default and uses a **Signal Protocol** “reviewed and endorsed by leading security experts”, while Telegram “insecurely” stores all messages, files and contacts in the private company’s servers. When Telegram was released, WhatsApp did not have any encryption protocol to ensure users’ chats to be safe from snoopers or hackers; actually, it was really easy to read conversations between two users in that period. Telegram’s goal is to ensure privacy to all of its users while other competitors (like WeChat, Line and Viber) do not.

A particular problem that Telegram creators want to solve is the impossibility to keep saved all the chats, messages and data in general, between different devices, associated to the same account. On the one hand, in WhatsApp, if a user changes his/her smartphone, all chats are deleted if no backup is done previously; Telegram, on the other, focuses on a user zero-cost transition when the device is changed, thus avoiding time and connectivity consuming backups.

Another relevant issue related to privacy that Telegram solves is the impossibility to hide phone numbers to unknown users. It is very common, in a messaging application, to be part of a group with strangers (sometimes hundreds of them) nonetheless wanting to maintain privacy: WhatsApp shows the phone number to all users, so everyone can see it; Telegram, again, solves this problem by giving, to each user, the chance to sign up with a personal nickname and decide whether to show the phone number or not.

Users can add multiple devices to their accounts and receive messages on each of them; they can share photos, videos, audio messages and files (up to 2 GB per file). Users can send messages to other users individually or to groups of up to 200,000 members: sent messages can be edited within 48 hours after they have been sent and deleted at any time giving users the chance to correct typing errors.

There is no advertising on the platform, in this way people are not prone to banner blindness, this is the reason why Telegram’s users are more likely to respond to marketing efforts in a positive way. Telegram allows marketers and influencers to deliver relevant content to their followers thanks to the creation of free *channels* without requiring particular programming skills (there is also the chance to create private channels that provide extra monetization options).

It is possible to build a *customer-facing chatbot* to achieve marketing goals. A bot can save a lot of time as it can serve many purposes (e.g. providing customers with the information they need and sending them useful links, documents and/or images).

Telegram's users can be clustered in two categories:

- *Common users* that use the application only to chat and make phone calls with friends (they consider Telegram as an alternative to WhatsApp and other well-established messaging applications);
- *Expert users* that deeply understand, know and appreciate the unique functionalities offered by Telegram (such as *channels* that are useful for one-way communication, *bots* that offer functionalities that go beyond simple chatting, *archive functionalities* that let the user save media files and messages in a private chat available only for him/herself).

Telegram was funded by eight investors: Oyster Ventures (a venture capital firm investing in new-frontier technology companies) and O.D. Kobo (expert entrepreneur with over twenty-years of demonstrated history working in the financial services and technology industry) are the most recent ones, followed by ARK FUND and Dalma Capital, Alexis Berthoud and Christian Cadeo (both expert entrepreneurs), Elysium Venture Capital and IOSG Ventures. This application raised a total of 850 million dollars in four rounds, the latest funding was raised on February 16, 2018 from an Initial Coin Offering round.

Chapter 2

The *idea* behind TelegramPay

In this chapter we introduce the idea behind the innovation that we decided to include within Telegram: **TelegramPay**, a payment service that integrates a simple and effective bank account for people and companies to the well-established messaging application.

2.1 Revolut

The Revolut bank account has drawn our attention because it has some advantages that are completely absent in the most currently used bank accounts developed by companies.

Generally, each type of account includes a payment card (Revolut has three different types) consisting of debit cards, operating in the VISA or Mastercard circuit, allowing the user to pay in physical or online stores that accept these circuits.

With a Revolut card the user can withdraw money from ATMs all around the world and there is no charge up to a threshold equal to 200\$ per month; for higher amounts, a 2% additional payment amount is withdrawn; with Revolut *Premium* (the associated card costs 7.99\$ per month), instead, the user can withdraw up to 400\$ per month without any additional cost.

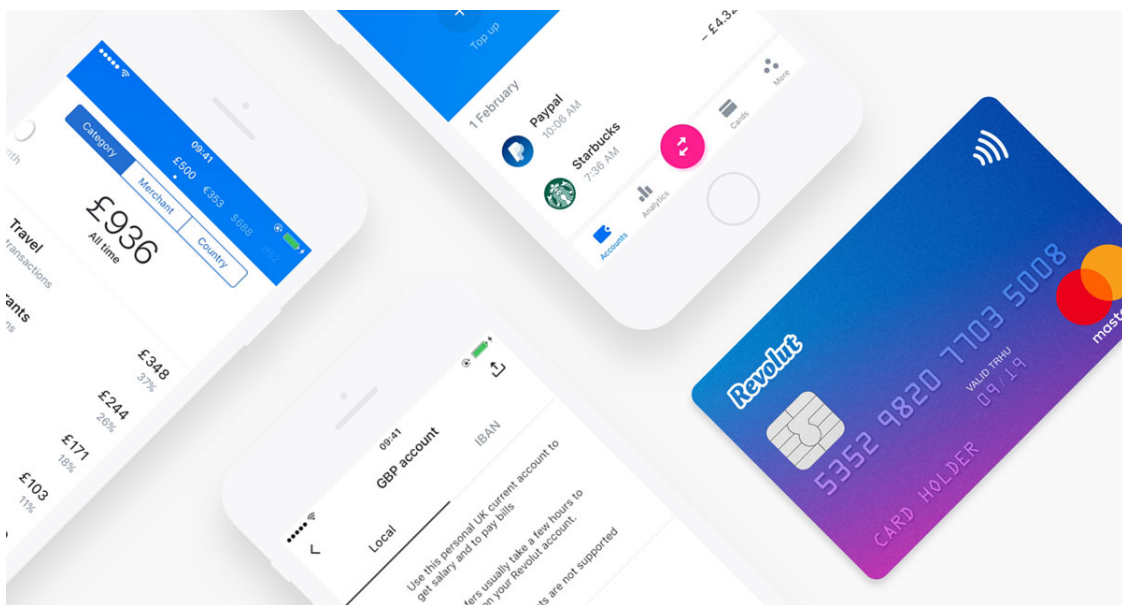


Figure 3: Revolut's user interface and physical card.

Revolut's main advantage consists of the prepaid virtual cards that can be directly created from the mobile application with which the user can pay only on the Internet: the security of these cards is related to the fact that their associated number disappears immediately after their use.

The interesting aspect of a Revolut debit card is that it can be used not only for "in dollars" payments, but also to receive and keep twenty-nine different currencies on a personal account: in fact, even if a user has money in a different currency on his/her account, he/she can still pay for it. In case another currency is needed, the only additional payment requested is the rate used by the banks themselves, the so-called *interbank exchange rate*. The user pays, therefore, a supplement of 0.5% in the case of an exchange rate of more than 6,000\$ in a month (this is the amount allowed with the free Revolut *Standard* account, while with the Revolut *Premium* one the currency exchange is free and unlimited).

Unfortunately, it is not possible to manage any Revolut account from a personal computer with *home banking* but only from the dedicated mobile application.

2.2 Features of TelegramPay

A new section in the hamburger's Telegram menu located on the upper left corner is added to let users access their TelegramPay account. We decided to include five unique features to our product:

1. **Geolocation:** each card has a chip inside and it is associated to the customer's telephone number. This chip can be activated *software side* and if it is active there is a match (through geolocation) between the store and the user's device: the transaction is then accepted because of the calculation of the distance between the user who is going to pay and the store waiting for the payment; otherwise, the user will receive a notification like "Transaction failed" or "Are you really doing this transaction? Acquired location = IP address". If the user is not willing to use geolocation, a *two-factor authentication* (a message with a four-digits code is sent to the device) or Face ID/fingerprint recognition is implemented.
2. **Customization advantage:** possibility, for the end user, to receive the TelegramPay card at home (independently from the type of subscription) customized by the user him/herself in a special section during the TelegramPay account creation. The preview is shown and, eventually, approved; the payment is subsequently made (customization cost: 9.99\$ one-off).
3. **Subscription advantage:** six different types of subscriptions are considered:
 - *Basic* (no card customization is available): the amount of money that can be withdrawn is equal to 200\$/month with no commission costs. We also offer a service to underage people allowing them to pay a maximum 50\$/week.
 - *Premium:* card cost equal to 9.99\$/month with the possibility to withdraw up to 500\$/month with no commission costs; no underage assumption is taken into account;
 - *Gold:* card cost equal to 19.99\$/month with 1,000\$/month withdrawable without any commission cost.

Talking about companies, we offer three different kinds of service (in this case, to create a TelegramPay account, a company has to associate its *vat number* or *social security code*).

- *Freelance:* subscription cost equal to 29.99\$/month. A freelancer is a person that has his/her own business (e.g. personal trainer, dietist, lawyer, web developer, private teacher, greengrocer, plumber, etc...).
- *Business:* subscription cost equal to 59.99\$/month. This service is exclusively designed for small companies.

- *Enterprise*: subscription cost equal to 89.99\$/month. This service is exclusively designed for medium and big companies.
4. **Exclusive advantages to be included in the different account types:**
- in the *Basic* account no add-ons are considered.
 - For the *Premium* account an international health insurance is provided, assurance for travels (e.g. delays for planes, trains or Uber services, baggage loss, etc. . .), dedicated client assistance and one-time use of virtual cards.
 - For *Gold* accounts the same advantages as in the *Premium* ones are included, with an additional access to the *LoungeKey* (for air travels) with the chance to take three friends; cashback equal to 1% everywhere.
 - For *Freelancers* the same *Gold* advantages are included, furthermore exclusive discounts are available on professional devices. There will also be the chance to recruit team members adding them to the TelegramPay network (getting 5\$/month per friend directly into the account, maximum of four friends). Payments can be blocked/suspended until a certain objective is reached (e.g. a task has been completed).
 - For *Business/Enterprise* accounts all the features considered for the *Freelance* one are included plus a discount equal to the 0.5% on car leasing and 5\$/month added to the bank account if new friends become part of the TelegramPay team, maximum of ten people for *Business*, thirty for *Enterprise*. Priority assurance is provided and free international payments are available (ten for *Business* and fifty for *Enterprise*). For the added team members there is also the chance to “track” payments in order to approve or block them.
5. **Piggy bank:** introduction of a virtual fund inside the account, the user decides the amount of money to be inserted (e.g. to pay a Netflix or Spotify subscription etc...); for example: “**Each monday withdraw 1\$ from my bank account and put it into the *piggy bank*.**”
The type of payments can be categorized choosing the percentage that will be added into the bank account (e.g. distinction between a coffee at Starbucks and a booking at a hotel).

Chapter 3

Business Idea Evaluation

In this section we answer a certain number of questions that will help the reader intuitively understand why we decided to enter the market willing to offer Telegram an innovative service that never landed on a messaging application.

3.1 Organizing our work

The first question that we asked ourselves was: “*What problem (of Telegram) do we want to solve?*” Keeping in mind that the user/customer is at the heartbeating centre of our reasoning, we think that one of the main aspects to be considered are the ones concerned with privacy. Are we really sure that our conversations are in “safe hands”? How does the customer know that what he/she writes/says/shares is secretly kept in Telegram’s servers? Our product should guarantee this form of privacy, that is why the same reasoning applies to the transactions we want to introduce.

How many segments are we focused on? Are we going to sell our product worldwide or to a well-defined segment of users? Our product will be worldwide (without restrictions) available for anyone with basic digital capabilities. Our purpose is to reach the greatest number of people.

Who are we going after first? We have to carefully consider the impact our product will have on *early adopters*. We could, in a first moment, consider companies as our main customer, thinking about unique features that our application could give them in order to let them reach and contact new customers.

In addition to companies, we are going to focus on small businesses that want to sell their products but that do not have money and/or skills to create a full e-commerce on their own.

Who really wants our product? Keeping in mind the answer given to the previous question, we think that, on the one hand, companies would be really interested in a few dedicated functionalities (a “business account” that is not supported by the original version of Telegram) while, on the other, normal people will be glad to use one single application (the one used to send messages and make video calls) to perform everyday transactions.

3.2 End users

Let’s now concentrate on the *end users profile*: we have to deeply understand how to settle things up, in the beginning, in order not to fail as a company.

What is our users’ age range? Is it an application for everyone? Do we have to consider different functionalities for different ages? Our product is for everyone: we will not introduce any geographical, educational, sexual or age restriction, except for some functionalities that should not

be accessible for teenagers (a minimum threshold at 12 years for children that want to perform transactions with the consent of parents in all countries).

What is our users' income range? We have six different card types available for our customers; concerning normal people, we expect to deal with an income range from 1,200 to 2,500\$/month, *freelancers* should have an income range between 2,500 and 10,000\$/month while *small companies* from 10,000\$ to 1,000,000\$, greater than a million dollars for *medium and big* ones.

What motivates our users in wanting to use an application considered as a challenge for Revolut? *What are their goals and what do they want to do with our application?* Our customers want to *merge* the messaging application that they use everyday with a new way to make transactions in a safe and secure way (keeping in mind the attention Telegram reserves to its users' privacy). Our product, TelegramPay, is, first of all, user-friendly and able, for the first time, to connect not only people, but also companies that sell their own products.

Chapter 4

Developing our Personas' profiles

In this chapter we present three Personas coming from completely different realities with their own personal reasons to use our TelegramPay service.


The first Persona is Jill Anderson, a 35-years-old scientific journalist that, due to her job, is really interested in a new and secure transaction application.

The second Persona is Josef Correa, owner of the *Pizzeria Satellite 15* in Valencia: due to the Covid-19 emergency he decided to provide his deliverymen with a safe way to receive payments.

The last persona we created is Arnold Kirk, a 24-years-old Computer Engineering student that exploits our service to enjoy his student life before getting the degree.

The following faces are directly generated by the GAN (Generative Adversarial Network) available at <https://thispersondoesnotexist.com/> and they do not represent real people.

Jill Anderson



"I'm looking for an application that will help me making my everyday transactions easier."

AGE: 35
WORK: Scientific Journalist
FAMILY: Married, 1 Child
LOCATION: Palo Alto, California

Organized **Practical**
Protective **Hardworking**

I'm a 35-year-old scientific journalist that very often travels around the world seeking for new stories to tell and articles to write. I often eat in restaurants, spend the night in hotels and exploit Uber services, and the fact that the messaging application that I currently use every day to store and save my work materials provides me with the chance to pay everywhere in a safe and faster way is simply astonishing.

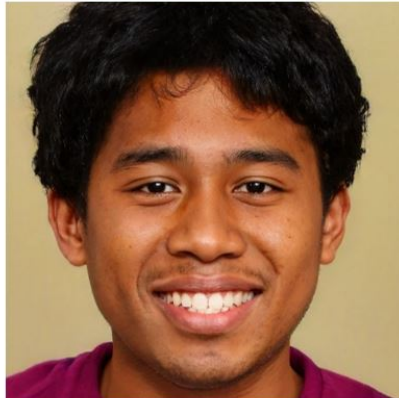
Personality

Introvert Extrovert
Analytical Creative
Loyal Fickle
Passive Active

Preferred Channels

Chrome
Mobile

Josef Correa



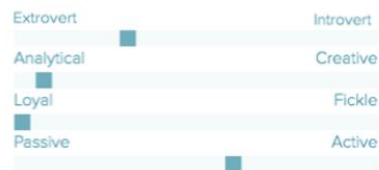
"I'm looking for an application that helps me and my deliverymen to perform safe transactions"

AGE: 41
WORK: Owner of *Pizzeria Satellite 15*
FAMILY: Married
LOCATION: Valencia, Spain

Determined	Trustworthy
Hardworking	Practical

I'm the owner of the *Pizzeria Satellite 15*, in the center of Valencia, that has a lot of take-away services. Luckily for my business, during this period of crisis due to COVID-19, I started using TelegramPay. In this way I can guarantee my deliverymen to receive instant payments to the pizzeria's account through the same app they daily use for messaging.

Personality



Preferred Channels



Arnold Kirk



"I'm looking for an application that represents a turning point in the way people pay: it's easy and fast!"

AGE: 24
WORK: Computer Engineering student
FAMILY: Single
LOCATION: Charlotte, North Carolina

Thoughtful	Future-focused
Enterprising	Organized

I'm a Computer Engineering student following the last courses of his university career from a distance, and I have to go to the department's headquarters just to discuss with professors or follow lab activities. TelegramPay has been a turning point because it avoids me to make the usual queues to buy tickets, I can also use it to go to the cinema, have lunch with friends, go shopping. In short, it's an application that contains everything I need with a single click.

Personality



Preferred Channels



Chapter 5

Entrepreneurial Idea Feasibility

5.1 Technical feasibility

Talking about the *technical feasibility* of TelegramPay, the first question that we asked ourselves was: "How many core components will be included in our system?" We answered by drawing up a short list of what we need:

1. Server hardware needed to process a huge amount of data;
2. Software that will run on the servers;
3. Software that will run on web browsers and smartphone applications;
4. Partnership with a third party company, *Tagnitecrest*, that will print for us the physical cards.

And what about the *types of technologies needed for the system*? Again, we answered providing a short list:

1. Telegram already uses its own servers; for this reason there is no need to use third party servers such as AWS (we can expand the current servers that Telegram owns);
2. For the second core component, the development of sophisticated *machine learning* algorithms capable of processing transactions is required: these algorithms should be able to detect anomalies in order to prevent fraudulent behaviours.
3. For the third core component Telegram, again, requires the development of software built for a variety of platforms, such as the web, mobile and desktop OSs.
4. No new technologies are needed to print the physical cards.

5.2 Analyzing the Technology Readiness Level (TRL)

Are all needed technologies ready available? Our educated guess claims that we are at TRL 9.

First of all, servers are already available and they do not need to be purchased. Software, both *server-side* and *client-side*, can be quickly developed to a working prototype that will be shipped to customers only when it will become completely working, even while there is still room for improvement. This early version could therefore already be considered at TRL 9 but, actually, a lot of development is required and TelegramPay will exploit the feedback provided by early users to train and improve better-performing AI algorithms. Our software will be continuously developed and improved.



Technology Readiness Levels

- TRL 0: Idea.** Unproven concept, no testing has been performed.
- TRL 1: Basic research.** Principles postulated and observed but no experimental proof available.
- TRL 2: Technology formulation.** Concept and application have been formulated.
- TRL 3: Applied research.** First laboratory tests completed; proof of concept.
- TRL 4: Small scale prototype** built in a laboratory environment ("ugly" prototype).
- TRL 5: Large scale prototype** tested in intended environment.
- TRL 6: Prototype system** tested in intended environment close to expected performance.
- TRL 7: Demonstration system** operating in operational environment at pre-commercial scale.
- TRL 8: First of a kind commercial system.** Manufacturing issues solved.
- TRL 9: Full commercial application,** technology available for consumers.

As for cards fabrication we could say that, again, we already are at TRL 9 because, thanks to the partnership with Tagnitecrest, after we request the amount of cards needed, the third party company will produce and ship them to the customers/companies.

5.2.1 Patented technologies

Do we need patented technologies? We do need patented technologies for *transaction software development* because there already exist efficient models that provide a lot of privacy and security between the two parts (customers/companies).

Who are the owners of patents? Revolut owns the patent, developed by Nikolay Storonsky, Revolut's founder and CEO, we need: **Method and system for multicurrency transactions**¹.

In a few words, it is a system or method of operating a user held *multicurrency* card in a transaction with a seller operating in a first currency; the system or method comprising: a card capable of being read by a reader; an e-wallet associated with the card and holding data relating to the card, a plurality of amounts of a plurality of currencies stored on e-wallet; a back-end system for receiving card data from the reader and a payment amount required by the seller via a network and for interfacing with the e-wallet to enable authorization of any payments; wherein in use the back-end system receives the data from the reader for a transaction and determines if the e-wallet has sufficient money in the first currency to settle the transaction and if so authorizes settlement of the payment amount.

In order to develop our TelegramPay service, we will need to get a license from Revolut to use their transaction model.

¹Click here to see the patent page: **Method and system for multicurrency transactions**.

5.2.2 Required technological expertise

Do we have all technological expertise in house? Telegram’s two founders brought with them an important set of knowledge and skills that provided the necessary technical expertise to start their company (in particular Nikolai Durov developed the cryptographic protocol MTProto 2.0, used to keep safe all the information inside the application).

Do we need to get some expertise from the outside? For the company to scale and the product to be fully developed, we need to involve people from a variety of technical backgrounds. Most notably, Telegram has not only to involve the expertise of data scientists and software engineers, but also professionals on legal aspects and banking, to be able to develop highly specialized *machine learning* and *deep learning* algorithms to solve specific problems related to possible frauds.

5.2.3 Partnerships

With whom could we form a partnership in order to develop/produce our product? We have to build a partnership with the joint venture VISA, to have access to their payment circuit, and Tagnitecrest, a joint venture business established in the UK that will provide us the physical cards.

5.2.4 Legal aspects

Since TelegramPay deals with people and transactions data and needs to process them remotely on its servers to provide its service, the company has to comply with the *Securities Financing Transactions Regulation* (SFTR), the *EU General Data Protection Regulation* (GDPR), the *EU-U.S. Privacy Shield Framework* and *Swiss-U.S. Privacy Shield Framework* regarding the collection, use, and retention of personal information.

Since TelegramPay allows people to create their personal account and make transactions it needs to ensure that users’ data are in safe hands: TelegramPay’s team has end-to-end ownership of the Identity and Authentication aspects of their products and uses services like *multifactor authentication* and *geolocation* to keep transactions *atomic* and *attack-proof*.

5.2.5 Investments

To achieve the kind of position on the market that TelegramPay aims to attain and to conduct sustainable development, the two founders have to eventually make substantial investments. We can distinguish several areas in which to make investments:

1. Technological investments are mostly focused on hiring skilled people to further develop Machine Learning and AI algorithms. Using these funds, and taking advantage of the feedback they gathered, TelegramPay could therefore further improve and develop its product and then extend its client base, without the need for large financial investments upfront.
2. Patenting solutions related to AI and Machine Learning techniques for *transaction analysis* and *anomaly detection* are vital to maintain TelegramPay’s position in the market.
3. Renting offices and hiring staff are key steps in the company’s expansion and establishment in the mass market, therefore they are undoubtedly required and indispensable investments and they can, once again, be made incrementally as the business grows.
4. Telegram handles clients’ personal data that are mainly processed on internal servers, therefore there are technical investments that must be made to ensure that their services meet the required industry-standards in terms of security. At the same time, legal investments must be made to make sure that TelegramPay complies the following Regulations and Frameworks regarding the collection, use, and retention of personal information:

- *Securities Financing Transactions Regulation (SFTR)*;
 - *EU General Data Protection Regulation (GDPR)*;
 - *EU-U.S. Privacy Shield Framework*;
 - *Swiss-U.S. Privacy Shield Framework*.
5. The company has to define a sustainable development strategy from the *early adopters* to the main goal of the mass market. At this point, the real big investment in marketing has to take place: Telegram has to heavily invest in advertising, social media and content marketing, to be able to reach as many people as possible.

Chapter 6

TAM Analysis

We performed our TAM Analysis by considering the number of active users Telegram had in 2020 (four hundred millions) and, keeping this number in mind, we made our educated guesses. We calculated the Total Addressable Market through the **Value Theory** that relies on an estimate of the value provided to customers by our products and how much that value can be reflected in our prices.

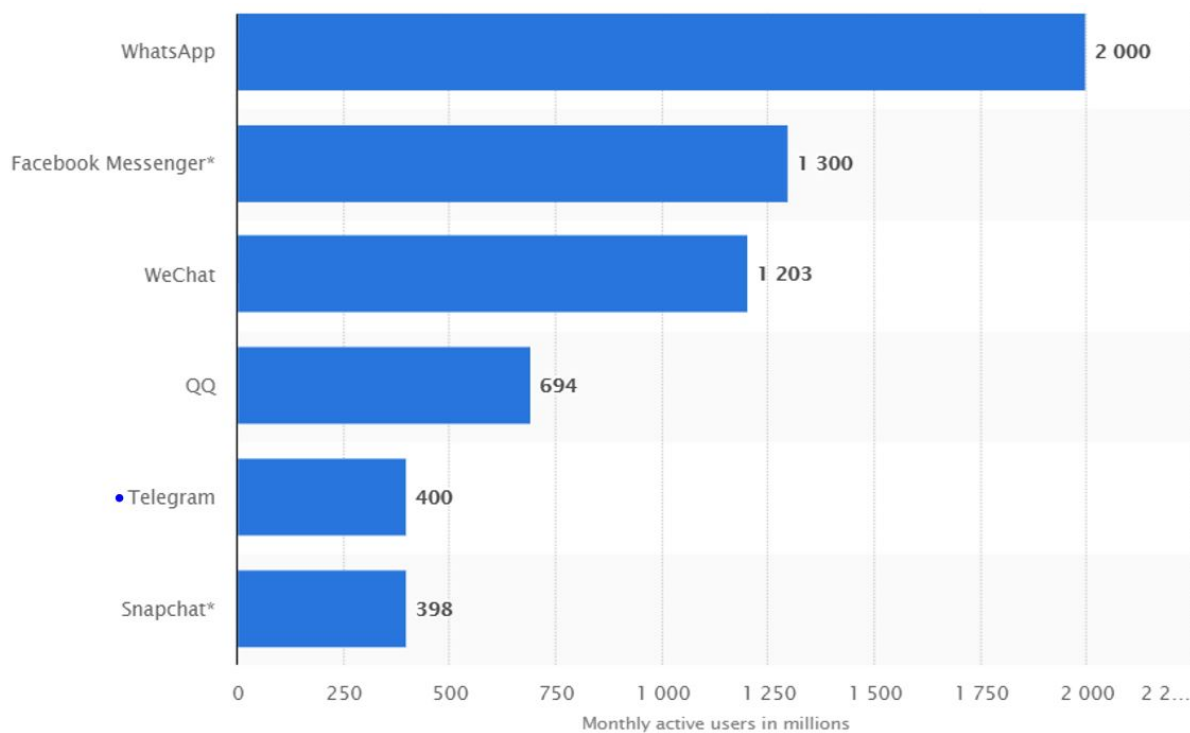


Figure 8: Telegram's active users in the year 2020.

6.1 Type of demands and *size-related variables*

We identified two types of demands:

1. **New Demand** (i.e. new card requested by the user);
2. **Replacement Demand** (i.e. replacement of exhausted cards after 5 years).

The *size-related variables* we identified are:

- Users that daily use the Telegram application (active users);
- Users that are interested in the new offered service, willing to create a TelegramPay account;
- Freelancers or companies (approximately two hundred millions worldwide) interested in the *Freelancer*, *Business* or *Enterprise* accounts;
- Average physical card price = 14.99\$/month;
- Card lifecycle equal to 5 years, then a renewal is requested (otherwise the TelegramPay account is disbanded);
- Transaction costs.

6.1.1 Analysis 1: *New Demand*

Let's suppose that among the 400 million active users, 15 of them are really interested in the TelegramPay offer and are willing to create their new bank account, along with the request for a new card.

Further assuming that the 0.5% (estimated guess derived from the number of companies in Italy with a P.IVA, almost 410,000 companies = 0.68% of the population) of the companies all over the world create a TelegramPay account, we will have almost 1 million companies interested in the service.

- **Profit deriving from the physical card creation:**

15,000,000 users \times 14.99\$ (average card price) \sim 224,850,000\$ (every five years)

- **Profit from people:**

15,000,000 users \times (avg(0.00 + 9.99 + 19.99) \times 1 year) = (from 0 to 1,790,000,000\$)/year assuming that not all the customers will choose the *Premium* or *Gold* cards.

- **Profit from companies:**

1,000,000 companies \times (avg(29.99 + 59.99 + 89.99) \times 1 year) = (from 359.880.000 to 1.079.880.000\$)/year applying the same reasoning as before.

6.1.2 Analysis 2: *Replacement Demand*

- **Profit from people - (in 2025 \sim 1.2 billion users, so 45 TelegramPay million users):**

45,000,000 users \times 14.99\$ (average card price) \sim 674,550,000\$ (every five years)

- **Profit from companies (2.5 million companies in 2025):**

2,500,000 companies \times (avg(29.99 + 59.99 + 89.99) \times 1 year) = 1,800,000,000\$/year

- **Average amount of money spent in a month:**

Between 200\$ and 500\$ \sim 350\$ (in a year: 350\$ \times 12 months \sim 4200\$)

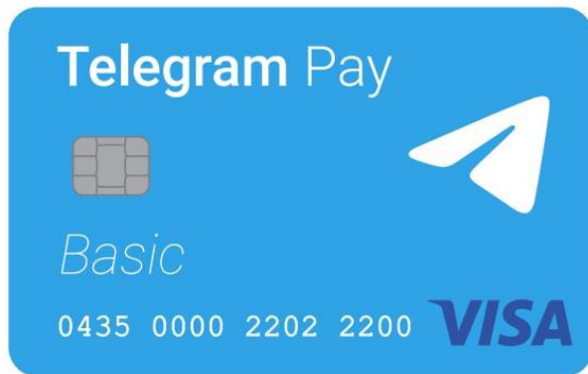
- **Average transaction made cost:**

4200\$ \times 0.15% \sim 6.3\$

Chapter 7

Product concepts

In this chapter we show all the six card versions for a TelegramPay account. In this page are shown the *Basic*, *Premium*, *Gold* and the *Customized Premium* ones.



In this page the *Freelance*, *Business* and *Enterprise* cards are shown along with a *Customized Business* one.



All the concepts above have been developed by a dear friend of ours, Emanuele Colognesi, who is an industrial product designer.

Chapter 8

Financials & Business Model

In this chapter we are going to show an example of the *Financials* for TelegramPay and our idea for an effective *Business model*.

8.1 Financials

In this section we provide a simple example of Financials for the year 2020.

- The founders of the company provide 500,000,000\$ as the initial **capital stock** of the company.
- The company spends 250,000\$ to maintain the **servers working**.
- The company spends 16,000,000 users \times 5\$ = 80,000,000\$ (where 5\$ equals the cost for a single TelegramPay card) to **buy credit cards**.
- The company gains 900,000,000\$ from **card sales**.
- The company spends 182,500,000\$ for **advertising** (0,1\$ pay per click \times 5,000,000 users \times 365 days \times once a day).
- The company pays salaries in cash for 300 junior employees (**employees salaries**) = 9,000,000\$.
- The company pays salaries in cash for 700 senior employees (**administrative salaries**) = 35,000,000\$.
- The company pays in cash 1,500,000\$ for 1000 **computers**. The plan is to keep them for 5 years.
- At the end of the year the company calculates the **depreciation** of the computers as $\frac{1}{5}$ of the cost value.
- At the end of the year the company calculates the **income** as difference between revenues and total costs.
- On the income the company pays **taxes** at 25% of the income. In this way calculates the **net income**.

INCOME STATEMENT 2020	
COSTS	REVENUES
SERVER MAINTENANCE	SALES
250,000	900,000,000
CARDS FABRICATION	
80,000,000	
ADVERTISING	
182,500,00	
SALES EXPENSES	
9,000,000	
ADMINISTRATIVE EXPENSES	
35,000,000	
DEPRECIATION	
300,000	
TOTAL COST	
307,050,000	
INCOME BEFORE TAXES	
592,950,000	
INCOME TAXES	
148,237,500	
NET INCOME	
444,712,500	
TOTAL COST + TAXES + NET INCOME	TOTAL REVENUES
900,000,000	900,000,000

BALANCE SHEET 2020	
ASSETS	LIABILITIES + EQUITY
CASH	INCOME TAXES PAYABLE
500,000,000-	148,237,500
250,000-	
80,000,000+	
900,000,000-	
182,500,000-	
9,000,000-	
35,000,000-	
1,500,000=	
1,091,750,000	
FIXED ASSETS AT COST	CAPITAL STOCK
1,500,000	500,000,000
ACCUMULATED DEPRECIATION	RETAINED EARNINGS
300,000	444,712,500
NET FIXED ASSETS	SHAREHOLDERS' EQUITY
1,200,000	944,712,500
TOTAL ASSETS	TOTAL LIABILITIES + EQUITY
1,092,950,000	1,092,950,000

8.2 Business Model

Telegram is *free*, this means that it does not really have a business model because there is not someone actually paying for the offered services. We have to keep in mind that people behave very positively towards a product that has a price equal to zero because there is no friction to purchasing. The main reason why Telegram does not make money was pointed out by the Durov brothers: “We believe in fast and secure messaging that is also 100% free”.

The introduction of TelegramPay should not be seen as a limitation or as a completely different way of approaching the basic version of Telegram, instead it should be seen as an enhancement, a way to create a parallel, and thus non-overlapping, account for each user that has, for the first time, the chance to perform transactions with the application he/she use every day to share thoughts or images with people in general.

The business model chosen for our TelegramPay service is called *subscription*. Subscription is a business model in which a customer must pay a recurring price at regular intervals for access to a product: in our case the customer has to pay a monthly subscription that varies along with the type of requested card. The effect that is introduced in this way is the *lock in effect*, where a company makes it extremely hard for its customers to leave, even if they want to.

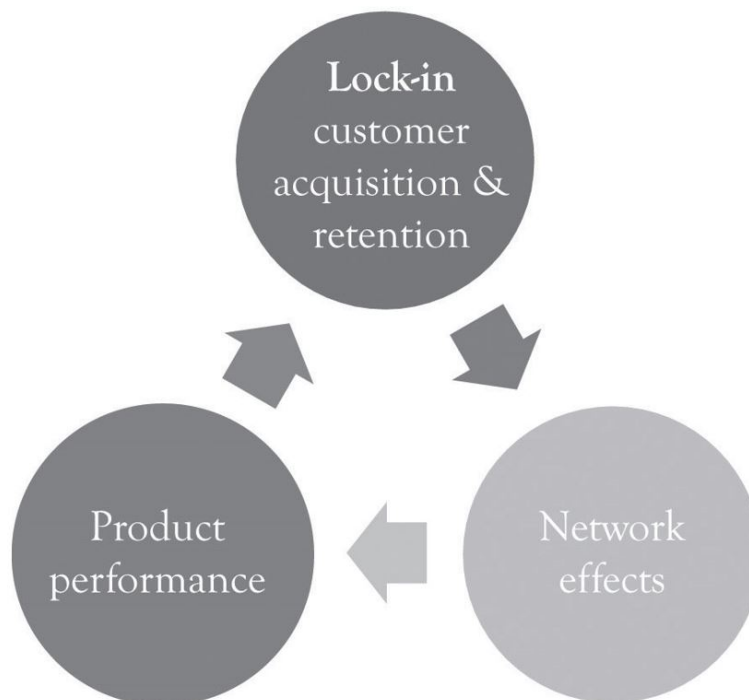


Figure 13: Representation of the *lock in effect*.

The secondary revenue model that we have considered is *advertising*. Thanks to the quantity of users Telegram currently has, a good idea could be considering the possibility of targeted advertising not only inside the application (with a notification to each user upon the actual release of TelegramPay) but also outside of it (e.g. demo videos on YouTube, ads on social platforms such as Facebook, Instagram, Twitter and LinkedIn) since Telegram does not provide the possibility to send emails to users to notify promotions or discounts.

References

We conclude our project by enumerating all the references to the material we analysed in these months (most of the material is directly taken from the lectures of the course and therefore has not been reported here).

1. Telegram Messenger LLP (italian webpage) *overview*
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9. Telegram *Revenue and Usage Statistics* (2020)
10. **This person does not exist**: human faces generate by a GAN (Generative Adversarial Network)
11. Revolut's patent: **Method and system for multicurrency transactions**
12. Measuring the business value of open source communities
13. *How Does Telegram Make Money?* Telegram Business Model In A Nutshell