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**A Framework for Open Innovation through Automatic Analysis
of Social Media Data**

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Bio

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Throughout her academic experience, Daniela was involved in different associations, always related to student entrepreneurship and R&D within the university environment. Overall, all the experiences helped her improve her soft skills as well as her management skills.

Currently she is about to finish the Master program and thinking what her next challenge will be, in Chile, Portugal or elsewhere.

Dedicado a Dios, porque Él es el principio y el fin.

A mis padres, Jorge y Cecilia, por su amor, confianza y ejemplo.

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Abstract

When talking about product or service innovation, the rates of success can certainly be improved. One option is incorporating inputs from a key stakeholder: the end user. In the specific case of software development, one of the most used ways of gathering users requirements is through questionnaires, where the collection and analysis of data is made manually, which is costly and time-consuming.

On the one hand people today consistently comment about products, releases and news on Online Social Networks (OSN), and on the other technology for word processing on OSN, such as sentiment analysis, is already available and accessible. This thesis proposes a methodological approach for exploring how information expressed by users can be incorporated into companies' New Product Development (NPD) process. The framework presented concretizes this idea by designing a methodology for assessing companies, specifically in the area of transportation, in incorporating user's inputs, using an open innovation approach based on automatic content analysis of social media data, to extract users' opinions from OSN, analyze them through opinion mining and sentiment analysis techniques, and finally obtaining relevant information about the product reception on the market. This information is intended to be helpful in order to improve company's NPD process by increasing the new products' rates of success.

As exemplification, a use case is developed, analyzing the mobile App Uber, which is today one of the most valuable technology companies in the world, the one with fastest growing and one of the most highly rated of all time. We measure how a controversial, highly diffused event influences the volume of tweets about Uber and on the perception of its users. While there is no change in the image of Uber against consumers, a large increase in the number of tweets mentioning the mark is registered, which meant a free and important publicity for them. This information is not only relevant for the company, but also for its competitors, who through this process can monitor what their users value of other services and explore possible ways to satisfy them.

Keywords: Innovation, Open Innovation, New Product Development, Co-Creation, Online Social Networks, Twitter, mobile Apps, Uber

JEL-Codes: L79, M11, O14, O25, O31

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1. INTRODUCTION

Some decades ago, when thinking about value creation process, organizations and users acted in particular roles of producers and consumers. Nowadays, research about innovation places that this procedure lies in a joint approach to creation of value, posited in an individual-focused co-creation of value amongst users and organizations (Prahalad and Ramaswamy, 2004).

Through users' inputs, it is possible to get improvements in the innovation process because their opinions represent substantial value, bringing benefits for companies that adopt them (Antorini and Muñiz, 2013). Authors state that when recurring to user communities, companies are facing interesting inputs of new ideas about product innovation (Antorini and Muñiz, 2013). Working along with innovative communities can reduce many economic risks attached to the New Product Development (NPD) process (von Hippel 2005; Ogawa and Piller 2006), which is translated into cost minimization. Besides that, user innovations come up typically in response to real needs, previously identifying and knowing the potential market can reduce the risk of failure (Antorini and Muñiz, 2013).

In some areas of knowledge, as software development, the involvement of the end user during the development process is not new: there is a need for bringing users' inputs by collecting their needs through requirements engineering processes, which can be seen as a way of co-creating with users. This process is mainly done through interviews, questionnaires and surveys (Wellsandt et al., 2014). Nowadays, this type of data is no longer enough: companies now need access to digital behavioral data as well (Howe, 2008). With the improvement of Web 2.0, crowdsourcing developed as a method for rejoining distinctive sorts of user, permitting a "crowd" of individuals to work together through Web tools to harness the innovative arrangements of a dispersed community of people to endeavor the group's insight and collect information from extensive quantities of people (Brabham, 2008). While the utilization of the spread knowledge of a substantial group of individuals to tackle solutions is a methodology utilized for long time (Howe, 2008), it is just in the last decades that organizations and different groups have begun progressively turning to web crowdsourcing as a method for acquiring outside knowledge, getting to the

aggregate wisdom and innovativeness present in the virtual crowd (Charalabidis et al., 2014). However, both physical and virtual requirements elicitation techniques require manual collection and/or analysis of data, which is costly and time-consuming (Meth et al., 2013).

In this regard it is interesting to make a sort of passive crowdsourcing. On the one hand people today comment on all products, releases, news on Online Social Networks (OSN) and on the other is already available and accessible technology for word processing on OSN such as sentiment analysis. Therefore, picking up the available technology and harnessing the huge quantity of data about people's sentiment, preferences, thinking and opinions available in OSN, we propose a novel framework for the development of new products and services in transportation using an open innovation approach, based on automatic content analysis of social media data.

Social media applied to co-creation methods has received an increased deal of attention over the past years (Hinz et al., 2013), despite this update, the literature is mainly theoretical, needing more empirical research, because the role of social media in companies' innovation process is not yet clear and its potential on becoming a source of users' information for firms to improve their NPD process results has not being developed or tested.

Nowadays, when discussing about innovation environments, the idea of smart city is constantly present. The unstoppable urbanization, thanks to the progressive growth of their population has arisen a new kind of city, called a "smart city". The important point about this is not to focus on the smartness of a city, but on the efforts the city makes to become smarter: at this, the core of a smart city join to innovation in the community (Caragliu and del Bo, 2015). The coordinated methodology of smart cities is likewise reflected in the transport sector, an imperative part of the economic and social improvement of urban zones (Garau et al., 2016). That is why authorities have focused on the development of tools that facilitate transportation for users, from new designs of routes and means of transport, to new forms of organization of the transportation system. Software developers have

displayed this need by creating specific mobile Apps that contribute to the development of smart transportation.

For building the framework, it is necessary to map the user metrics values in the Apps within the five characteristics of innovation defined by Rogers (1962) and assesses the extent to which the product fits this definition of innovativeness. To have clarity of how users' opinions are considered into the process of value creation, and based on the traditional NPD framework, we design a flowchart where the views expressed by users in OSN through sentiment, opinions, complaints, desires, suggestions, preferences, thinking and so on are incorporated.

To achieve the objective, we apply an architecture pipeline where we extract users' opinions from those Online Social Networks whose API we have access to., according to previously defined heuristics, for being standardized and having a set of meaningful, general information. Next, using filters, we obtain a knowledge database, where the information gathered before is processed by a natural language processing (NLP), which involves natural language understanding, that is, enabling computers to derive meaning from human or natural language input. Once only data related to the field to be researched is held, we perform quantitative and sentiment analysis processes, with the objective of analyzing the opinion conveyed to each social content, assigning a categorical (positive, negative, neutral) or numerical sentiment score. Finally, the results are shown, through easily understandable ways of visualization.

2. LITERATURE REVIEW

Four main topics complete the structure of this thesis: the innovation process described by its definition and how important it is for a company's good performance; the different sources from where a company can obtain information and collaboration when innovating; how Online Social Networks (OSN) have raised during the last years and how they have become an important channel for communication between companies and their stakeholders, mainly customers, being necessary some techniques for recognizing them; and the arising of smart cities and the attached smart transportation as a focus of collective knowledge and innovation systems.

The objective of the present thesis is to assess the impact of OSN as a user-centered information provider for companies to improve their New Product Development processes, proposing a framework for companies, specifically in the transportation area, to harvest information provided by users.

2.1 Innovation Process and New Product Development (NPD)

Innovation is an important element of competitiveness (Luz et al., 2014). For achieving this, companies use innovation for getting advantages over their competitors, in order to improve their performance. There is a number of ways for doing it: launching new products, improving product quality, reaching new markets, etc. Crossan and Apaydin (2010) summarize the studies where the positive relation between firm innovation and good outcomes is evidenced. Other works studying this issue are the ones made by Li and Calantone (1998) where a positive relationship between the development of new products and key performance indicators, such as market share, before-tax profit and ROI is established; by Klomp and van Leeuwen (2001) where they prove that a better development of process innovation produces more sales; and by Calantone et al. (2002) about the relationship between firm's skills to adopt innovations and financial performance through ROI and ROA.

2.1.1 Innovation characteristics

Innovation is an essential motor for sustainable competitive advantage (Dadfar et al., 2013). Innovation characteristics have been stated as a connector for consumer's acceptance of innovation. Laby and Kinnear (1985) posit that innovation characteristics greatly influence new products and services adoption, being a strong predictor for it. Innovation characteristics are operationalized as "the characteristics of innovation that are perceived by individuals as useful to help explain the rates of adoption" (Rogers, 1962). Innovation characteristics that are perceived as having a greater a) relative advantage, b) compatibility, c) trialability, d) observability, and less e) complexity, are the variables that are supposed to improve the adoption of new technologies (Rogers, 1962).

Relative advantage: stated as "the degree to which an innovation is perceived as being better than the idea it supersedes".

Compatibility: stated as "the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of the potential adopters".

Trialability: stated as "the degree to which an innovation may be experimented with on a limited basis".

Observability: stated as "the degree to which the results of an innovation are visible to others".

Complexity: stated as "the degree to which an innovation is perceived as relatively difficult to understand and use".

2.1.2 NPD stages

Prandelli et al. (2010) defined the NPD process as "a development divided into four main stages":

Idea Generation

The initial step where abstract, concrete or visual ideas are created, developed and communicated. This process considers the emergence of the idea, improvement of the concept, development of the process and passage from concept to reality.

Product Design

This considers details about the characteristics of a manufactured item's part and how they fit into the entire product. The design of the product considers how the part will reach its intended functionality in an efficient, safe and reliable way. It is also necessary to design the product in an economic and attractive to targeted consumers manner.

Commercialization

Through the commercialization process a new development is placed in the objective market. This process is divided into phases: initial introduction and mass production and adoption. Commercialization considers production, distribution, marketing, sales and post sale, which are necessary for new product's commercial success.

Post-launch

Post-launch is seen as an evaluation period, through which valuable information about the results of the launch is collected. This information is used to determine if the product's introduction goes according to expectations or if it needs to be rethought for getting the expected results.

2.2 External sources of collaboration

The OECD defines a national innovation system as “the flow of technology and information among people, enterprises, and institutions that are the key to the innovation process at the national level” (Yam et al., 2010). Because of this trend, researchers have stated that external knowledge is something to be considered on firms' innovation process, among other reasons, because R&D is “a necessary complement to openness for ideas and resources from external actors” (Dahlander and Gann, 2010). When referring to external

knowledge researchers, we consider all main stakeholders: suppliers, competitors, research institutions and customers.

Suppliers have greater knowledge about raw materials, something critical to the NPD process. In this way, companies have an opportunity to add the vision and expertise of a supplier to come up with improved or new solutions (Bonaccorsi and Lipparine, 1994; Eisenhardt and Tabrizi, 1995). Through suppliers, companies can also predict potential technical problems, which allow them to develop the solution faster to respond to market demands (Kessler and Chakrabarti, 1996).

Although less frequent, firms also collaborate with competitors to develop product innovations (Bayona et al., 2001; Nieto and Santamaría, 2007). Through working together, they may share technological knowledge and skills. Because they are present in the same (or similar) industry, common problems exist and they can be solved outside the competitor's area of influence (Tether, 2002).

Due to governmental incentives, nowadays more firms are seeking collaboration with universities and research institutions, which are "important centers for the creation and dissemination of scientific knowledge" (Hemmert, 2004). Because of this transfer of knowledge, companies have access to a new scientific knowledge for improving their new product development process (Caloghirou et al., 2004). On the other hand, a firm that does not benefit from technological knowledge of these institutions may fail, reducing the possibilities of success of a technological breakthrough when becoming a commercial product and entering the market (Spencer, 2003).

Customers are perhaps the main source of collaboration used by firms for improving its innovation performance (Gupta et al., 2000; Fritsch and Lukas, 2001). Faems et al. (2005) posit that customer collaboration has a positive impact for companies on their product innovation performance. In contrast to producers, who innovate for profit, users typically are seeking to satisfy their needs.

The concept of user-innovation is not new (e.g., von Hippel, 1976). Yet, many researches (Herstatt and von Hippel, 1992; von Hippel, 2005; Shah, 2006) have concluded that it is becoming more important; this can be observed in different types of product and industries. Despite this increased attention, studies about customers as innovators in services are not

prolific. While a few studies have considered consumers inputs as valuables to service innovation (Drejer, 2004), most existing research do not share this statement (Menor and Roth, 2008).

Given that every firm is different, there are different approaches for co-innovation. For instance, Bossink (2002) states it as “collaborate innovation efforts between two or more organizations”. In contrast, this dissertation focuses on co-creation with customers, who “can provide firms ideas about discovering, developing and refining innovations” (Chesbrough et al., 2006).

2.2.1 User Co-creation

For having successful results, NPD process must have access to vital information about customers: (1) what are my user needs? and (2) how is the best way to fulfill those needs? (von Hippel, 2005).

Users are a rich source of innovation for companies. In a study made in the UK, USA and Japan, von Hippel et al. (2011) found out that between 3.7% and 6.1% of citizens of those countries innovate. If the evaluation of the situation is on communities of engaged and active consumers this improve notoriously: 37% of this kind of users innovate (von Hippel, 2005).

Today’s consumers are in a better situation of connection, information, empowerment and activeness (Prahalad and Ramaswamy, 2004), so they present different choices according to their experience and background, which increase competitive advantages for firms and improve efficiency, turning drive down costs.

Because of their characteristics, they expect some benefit from being involved and contributing to this innovation process, and companies often take advantage of “years of accumulated product knowledge and experience about the precise needs and problems that consumers experience to innovate more successfully” (von Hippel, 1986; Antorini and Muñiz Jr., 2013).

During the years, the degree of involvement of customers have changed, moving from being integrated in the front end innovation (early stages of the process) to a participation

in every stage, and most importantly, from the beginning or idea development/designing stage. Given this evolution it is important for companies to change the way they relate with users, shifting their proposition on value creation from an approach centered in the firm to an approach centered in the customer, also known as a co-creation view (Prahalad and Ramaswamy, 2004).

2.2.1.1 Building blocks of interaction

Prahalad and Ramswamy (2004) established the DART framework, a set of elements that make co-creation easier for the involved parts. These components are *Dialog*, *Access*, *Transparency* and *Risk-benefits* (DART).

Dialogue: this component is based on the communication, engagement and compromise to search the common good.

Access: it is vital that customer have access to information from the firm. The process would be pointless if they don't have all the knowledge they need to have about the product.

Transparency: if there is any difference between the information access of companies and user, co-creation is not possible to evolve. Without transparency, both dialogue and access couldn't exist.

Risk-benefits: users that co-create with companies understand more clearly the dynamics of the corporation, thanks to the three previous elements. Because of this, they can analyze in a better way the risks and benefits of new technologies.

In the age of Web 2.0, companies have started to take advantage of the possibilities social media bring for developing and designing new technologies along with their users. This advance into an innovative point of view made the DART framework somehow incomplete (at least for this form of co-creation) because it does not consider the technological component. Schiavone et al., (2014) extended the traditional framework with a fifth

dimension: technology management, which includes a company's skills to bring contributors and engage them, to perform strategies through social media to motivate customers to make suggestions and contributions, and to guarantee the condition for their active involvement.

2.2.1.2 Conceptual framework of consumer co-creation

Hoyer et al. (2010) designed a framework for user co-creation, focused on the degree of co-creation effort, which includes the scope and intensity of co-creation. They studied three kinds of influencers of the degree of co-creation: consumer-level motivators, firm-level impediments, and firm-level stimulators. The three of them are able to influence the scope and intensity of co-creation.

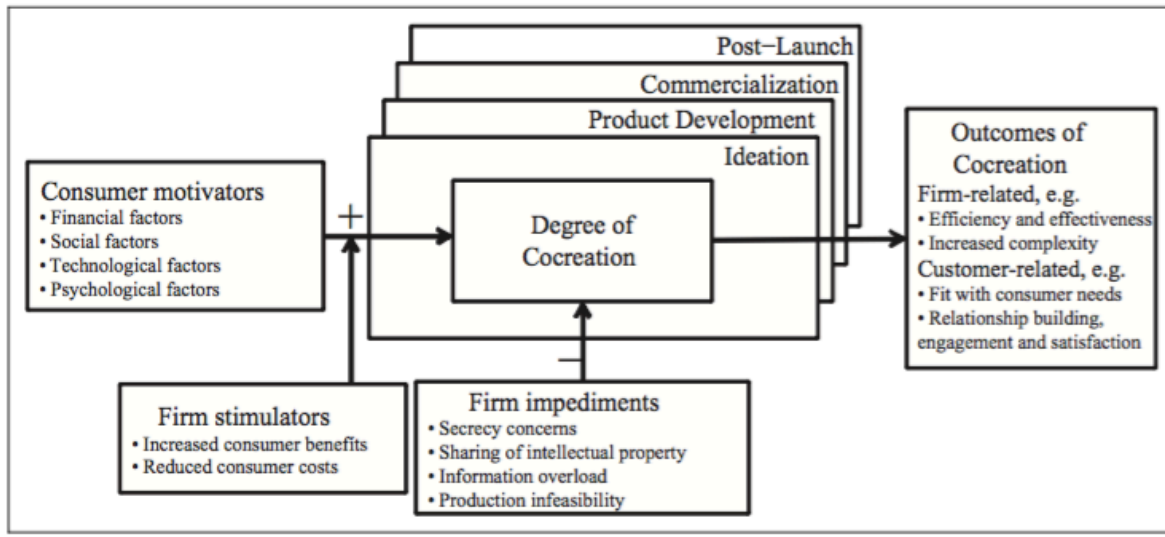


Figure 2.1: Conceptual framework of consumer co-creation
Source: Hoyer et al., 2010

Degree of co-creation

It is the center build in the system and is an element of both the extent of co-creation and the intensity of these processes.

The extent of co-creation alludes to the affinity of firms to team up with customer over every one of the phases of the NPD process.

Intensity of co-creation alludes to the degree of which firms depend on co-creation to create items inside a specific phase of NPD.

Consumer-level motivators of co-creation

Not only small firms, but also big ones have trouble to incorporate the aptitudes of their users to improve the results of their new launches (O'Hern and Rindfleisch, 2009). Recently, researchers have recognized portions of users who may be particularly eager and ready to take part in co-creation activities, between them we can find innovators, lead users, emergent consumers, and business sector experts.

Innovators users are the ones with more potential to start using new products (Moore, 1991).

Innovators are the one who most probably receive new products positively (Moore, 1991). Lead users are people who confront lacks of certain features that will in the end be common in the commercial center, and are consequently well situated to comprehend these requirements using their knowledge (von Hippel, 1986). Emergent consumers are people who are particularly fit for using their instinct and judgment to enhance products ideas that standard users will discover engaging and helpful (Hoffman et al., 2010). Business experts are people who have knowledge about numerous sorts of products, spots to shop, and different features of the business sector, and a more willing to start examinations with and react to data demands from different users (Feick and Price, 1987).

The particular motivators of customer support in co-creation are not very well knew (Hoyer et al., 2010). Co-creation includes, with respect to users, money related and nonmonetary expenses of time, assets, physical and mental effort to learn and take an interest in the co-creation process. With respect to these costs, buyers think about advantages of participating in co-creation exercises (O'Hern and Rindfleisch, 2009). Budgetary, social, specialized, and mental elements all assume a role (Füller, 2008).

Firm-level impediments of consumer co-creation

At least four attributes can be obstructers of the co-creation process (Hoyer et al., 2010). In the first place, co-creation requires a decent measure of straightforwardness with respect to

the firm, since it includes the disclosure to users (and in this way, maybe to other actors in the market) of data on NPD directions and ideas that may somehow have stayed secret only inside the company (Prahalad and Ramaswamy 2004).

Second, co-creation activities can oblige firms to ponder dubious inquiries around the ownership of intellectual property.

Third, co-creation can yield extensive volumes of customer info, some enough to prompt data over-burden.

Fourth, firms are also challenged to understand that despite the fact that customer co-makers may give clever thoughts, a considerable lot of these thoughts might be infeasible from a creation viewpoint (Magnusson et al., 2003).

Firm-level stimulators of consumer co-creation

Even customers who are generally inclined to dynamic participation in co-creation process may not be involved in this kind of activities with a specific company, if the advantages included are not enough or the costs included are too much. As needs be, for a given level of user inspiration for co-creation, firms have two bland alternatives accessible to them to empower co-creation (Hoyer et al., 2010).

In the first place, firms can fortify user co-creation by expanding the advantages that customers get from taking part in the co-creation process.

Second, firms can likewise fortify co-creation by decreasing the expenses to customers of participating in user co-creation (as far as time, effort, and foregone opportunities).

Consumer co-creation at the ideation and product development stages

The most common practice is to ask users to participate in co-creation at the initial phases of NPD, through the use of marketing research procedures (Hoyer et al., 2010). However, these strategies are costly and give constrained user-firm communications. Technology-related innovations that empower user-firm and user-user collaborations have definitely changed the co-creation scene (Sawhney et al., 2005). Nowadays, companies can influence innovations to co-create value, with the help of the customers, making the process more

understandable and proficient (Prahalad and Ramaswamy 2004). Focusing on the initial stage, companies can utilize online networking to immeasurably increment both the expansiveness and the profundity of information it can get from users at an essentially low cost (Evans and Wolf, 2005). Furthermore, they can include users in the development of the concept by opening the idea with them and effectively looking for their information (Grewal et al., 2006). Generally speaking, including user in the initial phases of NPD can make important savings in both time and cost and lessen the danger of an unsuccessful innovation (Hoyer et al., 2010).

Consumer co-creation at the commercialization and post-launch stages

The inclusion of users in value co-creation at the latest phases of NPD is regular in numerous contexts and is getting to be well known in others (Nambisan and Baron, 2009).

Companies now have to face new opportunities and challenges in dealing with the latest phases of NPD and marketing process, given the multiplication of social innovations, for example, online customer communities, social networking sites, instant messaging, and wikis.

Positive outcomes of co-creation

Marketing practice and theory are progressively perceived as capable of providing big improvements to company's performance through the performance of co-creation activities (Prahalad and Ramaswamy, 2000; 2004). By effectively executing and overseeing co-creation, a firm can find two valuable sources of advantages (Payne et al., 2008): (a) profitability increases through expanded proficiency and (b) enhanced viability.

When using co-creation, a firm can become more productive and efficient thanks to cost-minimization, since workers' contributions can be replaced by users' contribution in the NPD process (Bowers et al., 1990). Cost saving emerges on different activities: almost costless procurement of user ideas and outsourcing of NPD activities, which diminish the requirement for inputs from conventional marketing research and workers (Evans and Wolf, 2005), reduced danger of unsuccessful products, which can lead to an increase of the cost of inventory (Ogawa and Piller, 2006; Cook 2008), quicker speed-to-market (Sawhney

et al., 2005), and post-launch increases through permanent product enhancements and investigation of extra usages (Grewal et al., 2006). These results may specifically impact organizational execution, expanding the productivity of operations, product turnover, employee fulfillment and at last, incomes and profitability (Ostrom et al., 2010).

Additionally, co-creation is able to importantly make co-created items more effective, because they are closer to customer needs and have higher business potential (Lilien et al., 2002). Co-created items are regularly appeared to have high-expected advantages and novelty, which at last builds business attractiveness (Magnusson et al., 2003; Franke et al., 2006) and takes into account more differentiation with the competition (Song and Adams, 1993). A closer inclination fit of co-created products, thusly, can build uplifting attitudes toward the product, ensuing buy goals, willingness-to-pay, and referrals/verbal (Franke et al., 2009). Contribution in a co-creation process makes a user better alert on difficulties, expenses, and limitations of making a new product, resulting in conformities in inclinations and better valuation for the product (Joshi and Sharma, 2004). In this way, through the delivery of expanded quality and by expanding the quantity of connection points between the company and users, co-creation may fortify user-firm connections and in this way enhance consumer value (van Doorn et al., 2010).

2.2.1.3 Types of Co-creation

Two central characteristics define types of co-creation:

Open-ness: The degree to which anyone can join the team, or just selected participants can be involved in the process.

Ownership: It deals with the ownership of the results, for example, if the outputs will belong to someone in particular, to the company, to the team, etc.

These two characteristics give rise to the four most diffused types of co-creation, as represented in Figure 2.2:

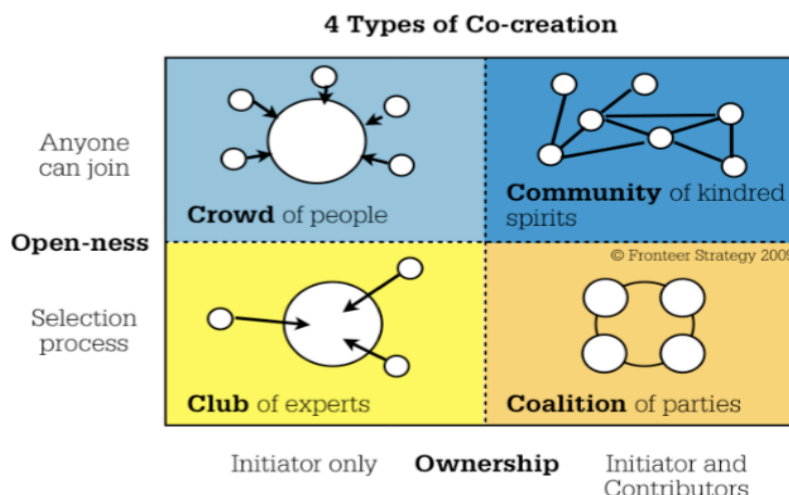


Figure 2.2: Types of co-creation
Source: Frontier Strategy

Club of experts

Participants have similar interests and knowledge and are found through a dynamic determination process. Nature of info and science between members are critical to achievement.

Crowd of people

In this type otherwise called "Crowdsourcing", anybody can join. For any given challenge, there may be an individual with a very good idea that merits considering. Utilizing online tools, individuals can evaluate and react to everyone's recommendations. There is frequently a marketing and seeding component/objective connected to the procedure. Crowdsourcing "unleashes the force of the masses", yet frequently takes longer, and there is no sure that the best individuals will (or will be able to) participate.

Coalition of parties

Some companies prefer to joint a "coalition" of people to discuss about thoughts and ventures. Every memeber conveys a particular resource or expertise to the venture. Specialized breakthroughs and the acknowledgment of principles frequently take place just when numerous participants collaborate - particularly imperative when capital

consumptions are high. Vital achievement elements incorporate sharing information and making a typical competitive advantage.

Community of kindred spirits

The group of people structure is most important when creating something for the greater benefit. Communities with comparative interests and objectives can meet up and create. This model, in this way, works generally in programming improvement and influences the potential power of a huge group of individuals with reciprocal areas of expertise.

2.2.1.4 Examples of co-creation in companies

The table 2.1 below shows some examples of application, based on the co-creation types discussed above.

Table 2.1
Example of co-creation in companies

Company Name	Co-creation example	Source
BMW	“M division” for customization of cars, also leading to general product improvements; engineering challenges: collaboration between customer and BMW engineers	Gloor and Cooper, 2007
Ducati	Tech Café Virtual Customer Environment for product conceptualization	Sawhney et al., 2005 Nambisan and Nambisan, 2008
Eli Lilly	Internet-based platform to support collaborative innovation involving pharma customers	Sawhney et al., 2005
IBM	Worldwide partner innovation centers to facilitate collaborative innovation	Blazevic and Lievens, 2008
IKEA	Customers can design their own kitchens in interaction with a trained sales representative	Wikström, 1996
LEGO	LEGO Factory for personalized LEGO models and sharing/co-creation of virtual LEGO models with other consumers	Zwick et al., 2008
P&G	P&G Advisor program where consumers contribute to product development (try new items and provide quality feedback)	Blazevic and Lievens, 2008
Philips Electronics	Collaborated with software “hackers” for re-programming of “Pronto” universal remote control by providing access to program files, codes and other information	Prahalad and Ramaswamy, 2004
PSK (“Center for Creative Art)	Co-creation as a strategic tool for organizations learning and innovation	Chung, 2009
Samsung	Virtual Product Launch Center to enlist customers’ help in diffusion of new product information; shaping peer customers’ purchase behavior	Nambisan and Nambisan, 2008
Starbucks	Business model where value is in experience (determined by the customer)	Lusch et al., 2006
Threadless.com	Customers that submit, inspect, and approve t-shirt graphic designs	Elofson and Robinson, 2007

Source: LSE Enterprise

2.2.1.5 Co-creation process along the NPD process

One of the most analyzed issues about the NPD process is how to know in what stage the customers should get involved (Bartl et al., 2010). An ideal innovation process details the evolution of products when transforming an idea into a concept, then into a design, for finally being tested and launched (Dahan and Hauser 2002). Directly related to this matter, we have the main objective of a co-creation project, which is the production of ideas, the assessment and refinement of concepts, the establishment of product specifications or the creation of models. Even though the inclusion of users in the last stages of the process is regular, particularly in traditional market studies, nowadays NPD practices increasingly concentrate on the fuzzy front end and in addition on the design and improvement itself (Prandelli et al., 2006). Organizations should focus on strategies for allocating resources, in relation to the users' preparation level, although the member will be challenged, it can't be than they are able to (Bartl et al., 2010).

A co-creation process comprises of substituting outbound and inbound trades of data to connect inside innovation practices and the contribution of customers (Prahalad and Ramaswamy, 2004). By that implies inner innovative ability can be converged with outside learning and inventiveness. We can consider these sequences of information sharing between users and companies as a co-creative flowcharts, as represented in Figure 2.3:

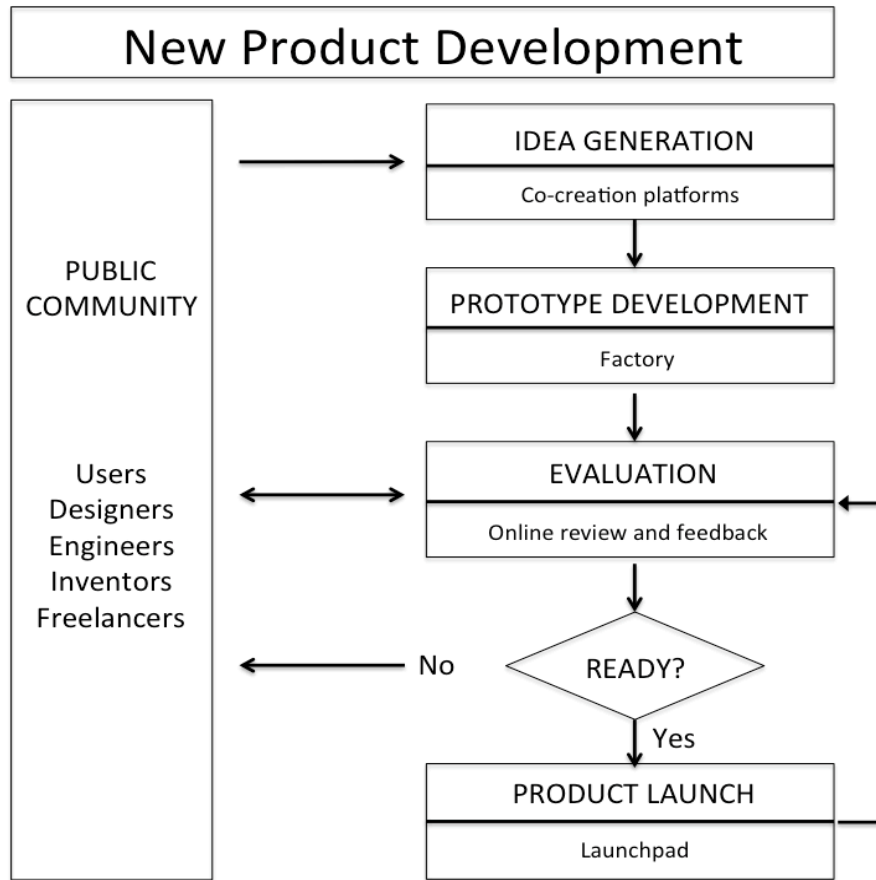


Figure 2.3: Co-creation flowchart
Source: J.B. Speed School of Engineering

2.3 Online Social Networks and NPD process

With the rise of Web 2.0, a more social web, the Internet has moved from a space where users were mainly consumers of content to an interactive and collaborative space where users involve and contribute. This evolution of Web 2.0 has made the way for social networks to become a phenomenon.

During this decade abundant research about social media has been done, consequently, many definitions about it can be found in the literature. Kaplan and Haenlein (2010) stated it as a conjunction of applications based on Internet evolved from the ideology and technology of Web 2.0 for creating and exchanging “User Generated Content”. In 2010, Sterne proposed seven categories of social media sites, according to its characteristics: i) “forum and messages boards” for sharing questions, answers and opinions in general; ii) “review and opinion sites” enabling customer feedback through reviews and opinions; iii) “social networks” interaction between people on different grades of privacy; iv)

“*blogging*” for sharing longer opinions or experiences content; v) “*micro-blogging*” similar to blogging but with shorter posts; vi) “*bookmarking*” for people to tag items of their interest; and vii) “*media sharing*” for sharing photos and/or videos.

Besides this categorization, OSN are every time more involved in people and companies activities, redefining how and for what purposes we use the Internet. With OSN the involvement of users in the innovation process has been facilitated (Sashi, 2012) because of five capabilities described by Sawhney et al. (2005): the Internet allows interactivity, it has a “global reach” that involves both customers and non-customers, it allows fluid communication so the frequency is higher, communication is much faster due to real-time interactions, and customers have more flexibility because they can involve at the level they want.

For firms, OSN have a variety of value propositions. For example, they are seen as a powerful and effective tool for marketing and communication, not only impacting the image of the company, but also its sales and profit (Kaplan and Haenlein, 2010). Also, through OSN it is possible to make a customization of the products offered by improving customer relationships and offering them special services (Kaplan and Haenlein, 2010). Lately, social media tools become more important for innovation-related activities, as users can give valuable inputs to the process (Gal-Tzur et al., 2014).

2.3.1 How social networks facilitate customer feedback

Social media represents new ways for firms to listen to the voice of their customers, and mining web data is more usual nowadays for supporting initiative of application in digital marketing and other business intelligence practices (Royle and Laing, 2014).

Twitter’s users generate data that, when analyzed, it is a valuable input for companies to get information about the market obtained directly from the customers (Lipizzi et al., 2015).

As well as digital marketing, analyzing the initial commercialization of a new technology can help firms to know the customers’ reactions in real time and get ideas about what marketing actions are necessary to improve the launch strategy’s effectiveness (Banerjee et al., 2012), for obtaining customers’ inputs about possible improvements on different designs for new products (Marcus et al., 2011), or to be aware of how users feel about a

certain product or brand (Chamlertwat et al., 2012). For every company one of the main objectives is to get meaningful and representative online information and exploit it to identify how to effectively influence in attitudes and elections of the customers.

The most common methodologies when mining data from social web are based on Information Diffusion in Social Networks (Wasserman, 2011). There is also another popular type of tools based on semantic analysis, which considers sentiment and reputation analysis (Saif et al., 2012) or text mining of the public content from social media sites (He et al., 2013).

The limitations of these methods and approaches lie on their lack of support to analysts when needing a more accurate understanding of social media generated data.

Specifically, “none of them helps to capture the structure of the judgments behind the opinions expressed by users” (Lipizzi et al., 2015), which is why is necessary to make more practical studies.

2.3.2 Social-Media Mining

In social media sites it is possible to find a huge and diverse quantity of opinions from users about companies, products and services, and everything related to that. Besides this discussions and shares of thoughts, social media can also be exploited in order to examine and plan strategically. The content present in social networks is virtually costless, genuine and spontaneous, therefore, presents very attractive opportunities to get experiences and thoughts for progressing patterns and possible improvements (Welz et al., 2012).

OSN are an ever-present concept in any citizen life and an important communication tool nowadays. Within them stands out Twitter, with a huge amount of tweets produced every day. This fact, coupled with its public character makes this platform a source of unstructured information that can be exploited.

2.4 Smart cities

Today, cities are facing an unstoppable urbanization, thanks to the progressive growth of their population. This has been the reason of the arise of a new kind of city, called a “smart city”, which represent a “conceptual urban development model on the basis of the utilization of human, collective, and technological capital for the development of urban agglomerations” (Angelidou, 2015).

Knowledge has always been a key part of evolution during the history of the world (Angelidou, 2015). At first, expertise of a city’s members greatly contributed to the local development of the cities, as seen during Greek, Romans and Arabs civilization periods. Besides that, there was a huge increase of knowledge during the Renaissance and the Industrial Revolution, influencing and changing science, art and other areas (World Bank, 2007).

Besides the evolution of individuals, nowadays knowledge is treat as an asset that contributes in a valuable way to the appreciation of a society, being a source of advantage for companies, public organizations and communities (Angelidou et al., 2012), representing an important tool in diverse areas such as war, industry, R&D, manufacture, science infrastructure or overall economy strength (Townsend et al., 2009).

Collective sources of innovation, such as clusters and hubs, smart technology districts and living labs has taken the lead in developing new technologies for improving the life quality of our cities (Komninos, 2009). World-leading organizations like the United Nations, the World Bank, the OECD and the European Union have stated that knowledge is an essential driver for global and local success: analyzing how the society has evolved during the last decades, it is very clear that knowledge management and urban evolution are strongly attached, because a city’s dynamics can be planned in order to improve the flow of knowledge (Angelidou, 2015).

All over, the beginning of the smart city concept was greatly influenced by the knowledge and innovation economy. They are a portion of what defines a smart city nowadays, the way it operates and what its potentials are (Angelidou, 2015).

2.4.1 Smart transportation

The core of smart cities can be reflected as well in the transportation industry, a key constituent of urban areas, when taking about its economic and social development (Garau et al., 2016). Smart transportation considerate a more efficient traffic services, supported by new technologies (Chun and Lee, 2015). The main components of a smart transportation network are smart applications providing new functionalities for transportation and traffic management and to give the facilities to users to be more informed and to have access to a safer, better coordinated and more efficient use of the transportation system in their cities (Caragliu and del Bo, 2015).

A smart city should be focused on its actions to become smart; this is why the concept is so related to city innovation. The status of smart city (therefore, smart transportation) provides the directions for coming up with solutions to urban problems generated by urban growth (Caragliu and del Bo, 2015). Through ICT tools, a smart city supports long-standing activities for making the operations and management of smart transportation systems, and with that, improving the life quality of its inhabitants, using advanced ICTs infrastructures (Harrison et al., 2010).

3. METHODOLOGY

The objective of the present thesis is to assess the impact of OSN as a user-centered information provider for companies to improve their New Product Development processes, proposing a framework for companies, specifically in the transportation area, to harvest information provided by users.

Applying the available technology, and harnessing the huge quantity of data about people's sentiment, preferences, thinking and opinions available in OSN, this thesis proposes a novel methodological approach for the development of new products and services in transportation using an open innovation approach, based on automatic content analysis of social media data. The specific case of mobility mobile Apps development was considered.

As a way to relate mobile App's features with innovation indicators we propose a mapping between mobile Apps' metrics and the characteristics of innovation defined by Rogers (1962), so that companies can consult this table in a fast and structured way, as an alternative that indicates which patterns a mobile App should contain to be perceived as innovative.

Based on the NPD framework presented in Section 2.2.1.5, we design a flowchart where the views expressed by users in OSN through sentiment, opinions, complaints, desires, suggestions, preferences, thinking and so on are incorporated.

Finally, the architecture system to collect and process information is presented. It extracts relevant information following the heuristics the user (company) defined, to conduct a quantitative and sentiment analysis and present results that are a guide for companies' decision-making process.

For conducting the study, a use case is developed, in order to make the proposed framework comprehensible, using a popular and known mobile App that has come in a disruptive way.

3.1 Mapping metrics into innovation characteristics

Innovation characteristics are operationalized as “the characteristics of innovation that are perceived by individuals as useful to help explain the rates of adoption” (Rogers, 1962). As mentioned in section 2.2.1.1, the dimensions defined by Rogers (1962) that enhance the adoption of innovations are: a) relative advantage, b) compatibility, c) trialability, d) observability, and less e) complexity.

A total of 37 metrics for measuring performance is defined, divided into 6 customer values perspectives (Wang et al., 2013; Kim et al., 2013; Kang, 2014; Hsiao et al., 2016), established as values that affect the use of mobile Apps. In those studies, authors established general motivations for people to use and continue using mobile Apps, and for each of the motivations they defined questions that characterize them. We decided to express the questions as concepts, and to classify every concept into the innovation characteristics. After the literature review, we decided to stay with these four investigations since they are the most complete and among cover a full set of dimensions of what users value in a technological product like this.

As organized in Table 3.1, the metrics are classified into the 5 characteristics of innovation defined by Rogers (1962), in order to have a clear vision on what are the characteristics people value the most in a mobile App and how these characteristics match into their innovative potential.

Table 3.1
Mapping of mobile Apps metrics into innovation's characteristics

Values/ Innovation characteristics	Relative advantage	Compatibility	Trialability	Observability	Complexity
Functional	- Affordable price	- Fulfillment of needs - Acceptable quality - Consistent quality - Price/quality relationship			
Social	- Social fit - Social acceptance - Social impression - Social approval - Social perception	- Social connection		- Social communication - Events update - Networking - Social interaction - Diffusion of benefits	- Social support
Emotional	- Interestingness	- Satisfaction			- Pleasure - Relaxation
Epistemic	- Test of new technologies - New uses	- Exploration			
Utilitarian	- Alternate uses - New knowledge	- Communication variety - Mobile technology updates			- Time saving - Organization - Effective personal life management - Productive personal life management - Efficient personal life management
Entertainment					- Boredom relief - Entertainment - Hang out - Enjoyment

Source: own elaboration

While in the literature, metrics that are traditionally used in engineering requirements when designing mobile Apps and what features should contain a product to be innovative are defined, it has not been made yet a correlation between these two approaches. That is why we propose this mapping as a methodology suggested to companies to complement their

NPD process, leveraging resources freely available provided by users in OSN, in a passive engineering requirements process.

Functional value

Functional value alludes to the utilitarian capacities and services that the product can offer, showed through an product's composite properties, for example, qualities or elements that can convey impressions of utilitarian execution (Wang et al., 2013), having respect with relative advantage and compatibility.

The price is an important factor to be considered when deciding whether to use an app or not (Hsiao, 2016). People prefer to use free or cheaper mobile Apps before paid or more expensive ones, so considering this variable the first case is more preferred, taking advantage over the second case.

Fulfillment of needs is a basic aspect to be taking into account when a person chooses an app. When we decide to use an app, we are looking for a tool that provides a solution to a need we have raised awareness, seeking that this tool is complemented by other tools that, in a greater or lesser extent, help us fill that need. Necessarily the app has to have the ability to be supplemented by other sources of solution. Furthermore, the quality of the app and its relationship with price is valued, seeking to be acceptable and consistent, ensuring that the tool effectively meets the need and is able to be used over time, favoring its implementation, being compatible with what is expected.

Social value

Social value alludes to social reception and the improvement of self-image among other people (Wang et al., 2013), being related with relative advantage, observability and complexity.

A product that delivers an improvement in the social qualities of its user is, for the latter, advantageous over other similar products. Social fit, acceptance, impression, approval and perception mean improvement in the image of an individual against others, so he/she will prefer the product that will provide these utilities, so that product will be preferred against one of its competition.

Social connection allows the user to have contact with their peers and to gain visibility using this product, given that mass communication today is in great demand because of the wide variety of media, especially digital. In this sense, the app must be compatible with the communication tools the user currently uses, to further enhance the connection with people who influence him.

The social factor greatly influences product visibility, since what users express about it contributes significantly as it becomes known to the market, and in what manner. Facilitating communication and interaction between users, the app will have more room in the market and its diffusion will be wider. Adding additional features such as update events, networking and diffusion of benefits the user will have more alternatives to publicize the app, and will be able to use it for multiple tasks.

Incorporate metrics focused on social issues also makes using the app easier because through the help and explanations given between users, and through promoting the sharing of use experiences between communities, users will perceive that its use makes it easier.

Emotional value

Emotional value relates to the emergence of enjoyment, playfulness, fun, and pleasure when using mobile Apps. Here, emotions are more related to compatibility and complexity. The user expects an app is interesting and has aspects that differ from the others, arousing greater interest. Thanks to this, the user can lean on this product over another, having advantage over the competition.

It is also expected that the experience and utility provided by the app is satisfactory, closely related to the functional value, where one of the metrics was how well the app satisfies the user's need. For this it is important that the app is adaptable and compatible with other tools that also help meeting the need of the user.

The emotional factor also influences the perception of complexity of the app, diminishing it. When an app delivers feelings of pleasure and relaxation, the user will feel that the app is not complex because it gives emotions that give comfort to the individual.

Epistemic value

Epistemic value alludes to when a product stimulates interest, gives novelty and/or fulfills a desire for learning (Wang et al., 2013). Case in point, an app can involve interest for new content and learning through testing new functionalities. This value fits into relative advantage and compatibility.

The discovery of new technologies and new ways of doing things deliver added value to the main purpose of the app, opening the door to developing new and better solutions. If an app will use other technologies to shape their different functions, the challenge is to arouse the interest of the user to experience these opportunities that the use of the app opens.

To be able to explore complementary technologies, the app must have a support system that allows interaction with new technologies and new approaches that emerge from the app.

Utilitarian value

Utilitarianism refers to the conscious of rightness or wrongness of an action, on the basis of whether the action maximizes affective concerns or not (Kim et al., 2013), which matches into relative advantage, compatibility and complexity.

Alternate uses of technology and the generation of new knowledge from this produces a relative advantage over other applications because this is not the main objective of the application, so offering these additions will generate the user a perception of more enhanced features, that enrich the experience. In addition, the user will have an advantage over other peers who do not use the application, and therefore do not have access, in the same way, to these new uses and knowledge.

By presenting alternatives of communication in various ways, the product complements existing alternatives, combining this service with others that the user currently uses or will use in the future. A similar situation occurs with updates through the application, which solves problems or adds features that users demand for satisfactory use, being compatible with user expectations.

In order to reduce the complexity of using an application, developers have created a number of features to simplify the daily tasks of users. Tasks that enable better ways to

manage activities such as saving time, organization, personal life management, etc. are perceived by the user as facilities, both in the proper use of the application, and the development of their daily lives.

Entertainment value

Entertainment value refers to when playfulness influences technology use and adoption (Kang, 2014). This value matches with complexity.

Entertainment motivation comes from exercises that are fun, energizing, and enjoyable, fulfilling inherent needs. As stated in literature (Kim et al., 2013), entertainment experiences support low user technology effort to deliver value, decreasing complexity of use. When being able to have fun with an application, users perceive that it is less complex to use it and it is easier to them to become familiar with it.

By consulting this map, mobile Apps developers can quickly and easily check and define what user needs the mobile App should comply to meet each of the innovation characteristics.

This classification is a first step in the attempt of determining the degree of innovation of a product or service, a topic in which more research is needed, because so far there is no tested methodology to measure the degree of innovation of a product or service, much of the research on measuring innovation is focused on organizations as a whole.

3.2 Proposed NPD framework

In the co-creation process, an ongoing collaboration between users and companies is present, through inside and outside iterations of gathering and understanding users' contributions. This interaction goes beyond the traditional exchange of goods and services between buyers and sellers, as users get also involved in the design and delivery of this experience. Because of this, co-creation leads to the spread of value creation, by users taking active part in the definition and delivery of this value, instead of just being a receiver of the proposal.

While the ideal it is to implement co-creation at every stage of NPD process (Hoyer et al., 2010), the framework of this thesis is focused on the initial and final stages, i.e. idea generation and product launch. To incorporate the user in the other stages it is necessary a bidirectional information flow, while the approach presented in this thesis is primarily focused on one-way information flow (from users to companies) to collect opinions freely placed on OSN. Although considered information from companies to users by posting trigger questions for users to express their opinions on OSN, in this work it is not considered the provision of information in the process of developing the new product from the companies to the outside. That aspect of research remains for future work.

On the other hand, companies are challenged to set up infrastructures and environments for facilitating this collaboration. It is here where the utilization of information and communications technology (ICT) and OSN emerges: this is a new possibility for sharing values, discoveries and new recognitions into the innovation development.

To illustrate how co-creation can be implemented in the NPD process, we present a flowchart for a scenario of interaction between users' opinions and value creation process stages, describing how users' involvement is able to benefit each one of them.

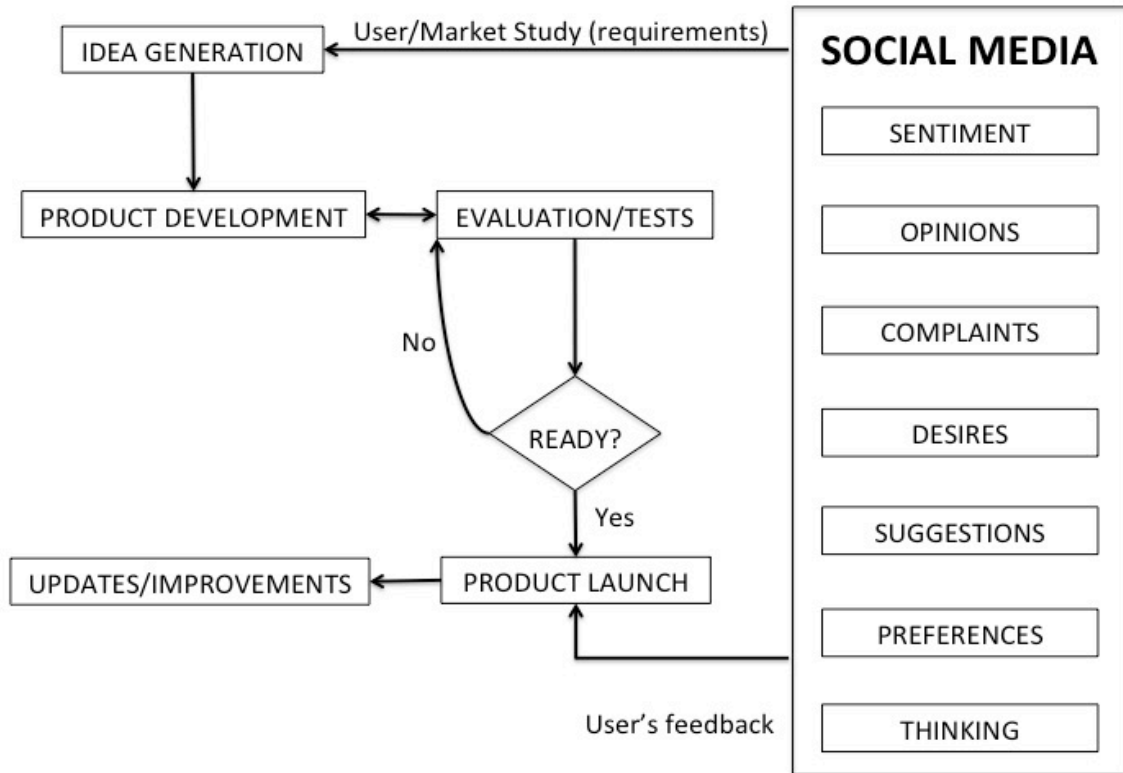


Figure 3.1: Co-creation flowchart, incorporating user's feedback through social media
Source: own elaboration

Idea generation

Keeping in mind the end goal to enhance the current offering or discover ideas for new technologies, customers are offered the chance to express their needs for the business. The open methodology is positive with regards to co-creation, since users not only collaborate with the organization, but also with each other, which prompts the exchange of thoughts based on associate feedback and to the formation of a group around the brand. Moreover, mainstream thoughts rapidly rise and their achievability can be examined. Communities have similar interests and ways of thinking, and meet up around similar thoughts (Antorini and Muñiz, 2013). In today's world, where technology drives a big portion of it, a large number of individuals meet in virtual spaces and have discussions about what passionate them.

In this initial stage, every idea gathered is handled so as to locate the ones that have the most potential and are feasible. The evaluation can be conducted by member of the firm or

by some users. In any case, the most common practice is to provide a platform where everyone can vote.

Product development

Generally, users' contributions on the product development process would be restricted to tradition techniques, such as marketing research and focus groups. On these days, organizations can include buyers in the concept development by opening the idea to them and effectively looking for their inputs, which, like stated before, it is not the focus of this thesis.

At this point of the process, the new product has been made and is possible to be used, however it is not actually prepared to the market. Prior to the commercialization, the firm wants make tests, for being completely sure about its functionality before it is put available to the customers. Clients can be incorporated into this stage, as they are the target market and might have have comments about usage situations that may have been neglected during the production.

Product launch

At the point when co-creation is utilized as a part of the commercialization period of the value creation process, clients are given the chance to be part of the advertising. Much of the time, customer-created advertising is a substitute for a more conventional full-scale promoting effort that would cost significantly more while being less powerful at separating itself from other commercial content. Other than the cost, another motivation to utilize co-creation at this phase is that individuals trust peers more than they do organizations (Bhalla, 2010)

The every time more popular use of social technologies such as online customer communities and OSN sites make possible a bigger involvement of users in commercialization and post-launch phase of a NPD and marketing process. In particular, new developments give important chances to co-create value in each of the three stages required in the NPD process.

3.3 Architecture

The framework starts with the interaction with a user (company), who defines the OSN that acts as the source of information and parameters to drive the extraction process, using the available API. Next, the user defines what kind of processing he wants to perform on the content and what kind of data visualization he needs. The goal of the platform is to extract, analyze and aggregate data in order to produce valuable analytics, by performing four major components: data collection, information extraction, sentiment analysis and analytics.

The system's architecture is represented in Figure 3.2. Below, we give a description of every component.

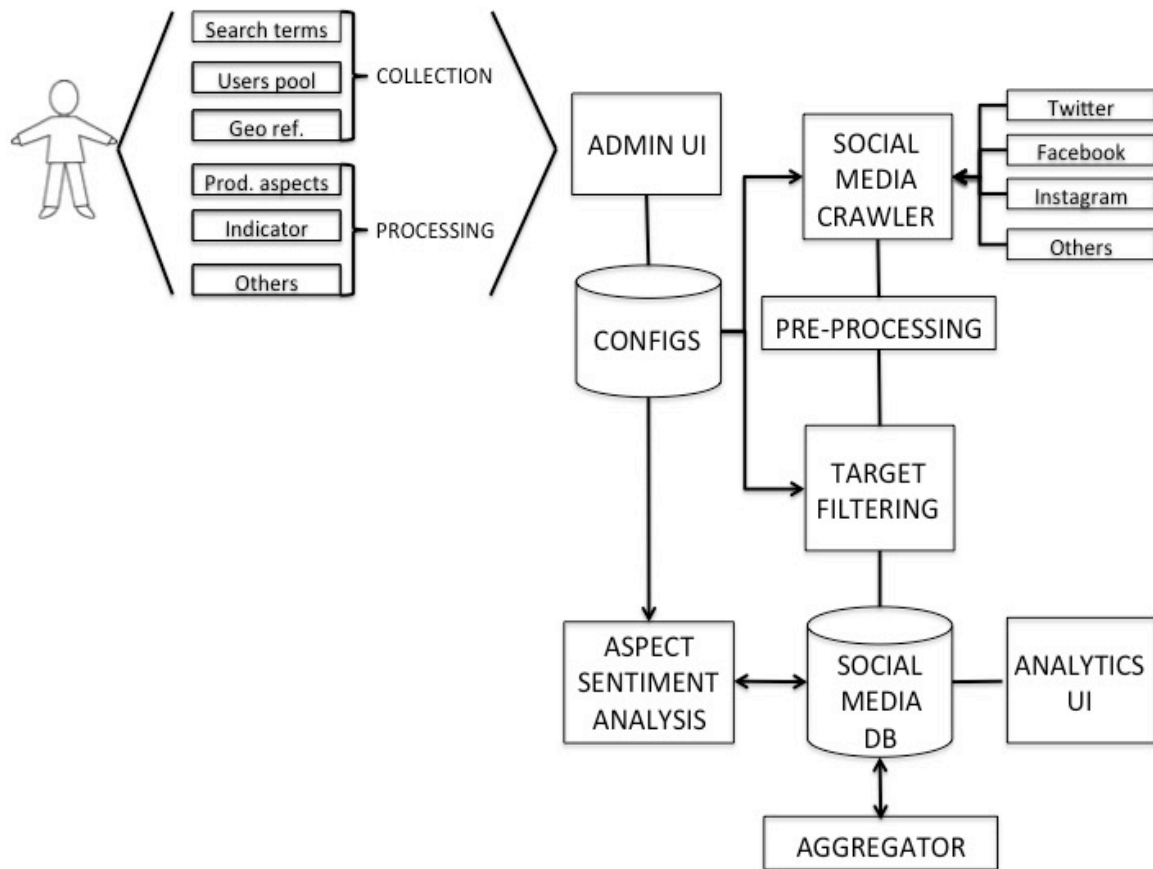


Figure 3.2: System architecture
Source: own elaboration

Data collection and processing

For conducting the data collection, the user defines the extraction heuristics, which lead the search and allow connecting to a social network (Facebook, Twitter, Instagram, etc.) which has an available API.

The data collection components crawl data from specific data sources, which implement specific web interfaces (e.g. RSS feeds, Twitter API). Each data source must have its own data collection module, which in turn connects to the system using REST services. The system stores data collected in a document oriented NoSQL database (MongoDB). This configuration allows modularity and flexibility, allowing the possibility of developing specific data collection components tailored to specific data sources (Saleiro et al., 2015).

The heuristics defined by the user can be one of three options:

- Search terms: extracts all data that match a specific term
- Users pool: extract all data posted by a specific user, given its user name
- Geo reference: extract all geolocalized data

Next, it is necessary to process the data extracted. For this, the user defines the processing heuristics, which define specific product's aspects that are intended to be monitored. Besides, the user also defines the indicators (or metrics) by which the product's aspects are measured and analyzed.

When having the user's input, the data collection components crawl data from specific data sources, in our case, a specific OSN, which implement specific web interfaces.

It is important to include that we just considered the content marked as public, subsequent to the objective of the platform is a large-scale extraction of content, with no need of an express users' approval. In any case, all separated data is then anonymized and privately stored in the database of information. Contributions are ceaselessly extracted and stored, for the entire time an analysis is running.

Information extraction

The information extraction components address two tasks: Named Entity Recognition and Named Entity Disambiguation. This component further processes the content gathered through the data collection process before aggregating, filtering and presenting it in the

Analytics UI. This requirement is due to the fact that the extraction process is carried out through a keyword-based matching, so there is a chance that irrelevant content is extracted (Saleiro et al., 2013). When monitoring opinions of a given entity it is first necessary to guarantee that all data are relevant to that entity.

We envision an application scenario where we need to track specific products entities. Usually this type of entities are well known therefore we opted to use a knowledge base to provide metadata about the target entities, namely the most common surface forms of their names. Once we had the list of surface forms to search for we applied a sequential classification approach using a prefix tree to detect mentions. This method can result in noisy mentions when applied to Social Media. For instance, an opinion containing the Word “Apple” can be related with more than one entity, such as the technology company or a fruit. Furthermore, posts in OSN are usually short which results in a reduced context for entity disambiguation. When monitoring the opinion of a given entity on OSN, it is first necessary to guarantee that all posts are relevant to that entity.

It is necessary to conduct this component of the framework for getting a richer and accurate semantic representation, which is exceptionally significant and valuable for final users, given its transparency and clarity. Once the filtering process is done, the final data is stored into the Social Media Database.

Consequently, other processing tasks, such as sentiment analysis will benefit from filtering out noise in the data stream.

Sentiment analysis

It is “the computational study of people’s opinions, appraisals, attitudes, and emotions toward entities such as products, services, organizations, individuals, events, and their different aspects” (Saleiro et al., 2016).

Its core objective is to collect and organize community’s opinions about entities and aspect of those entities. It is divided into three main steps:

- Identifying and extracting entities in evaluative texts
- Identifying and extracting aspects of the entities
- Determining sentiment polarities on entities and aspects of entities

To this point, we executed a lexicon-based algorithm for sentiment analysis. Lexicon-based methodologies (Taboada et al., 2011) infer the opinion passed on by a piece of content by depending on (outside) lexical assets, which outline each term to a categorical (positive, negative, impartial) or numerical sentiment score.

We built a sentiment analysis module to detect and classify opinionated posts, mentioning at least one entity, as expressing a positive, negative or neutral opinion. This module was built with a supervised text classification approach based on the bag-of-words assumption, that is, ignoring word order and representing messages as high-dimensional feature vectors with the size of the vocabulary. Then, a manually labeled dataset was used to train a linear classifier that estimates the probability of a sentiment label, given a message.

One of the main challenges of developing text classification systems for social media, is dealing with the small size of the messages and the large vocabularies needed to account for the significant lexical variation caused by the informal nature of the text. This causes feature vectors to become very sparse, hampering the generalization of the classifiers. Therefore, we first normalized the messages and then enriched the bag-of-words model with additional features based on dense word representations. These word representations, were derived from an unlabeled corpus of 10 Million tweets using two well-known unsupervised feature learning methods: (i) Brown (Brown et al., 1992) hierarchical clustering algorithm, that groups together words that tend to appear in the same contexts. Words are thus represented as the cluster to which they belong; (ii) Mikolov (Mikolov et al., 2013) neural language models that induce dense word vectors (commonly referred to as *word embeddings*) by training a neural network to maximize the probability that words within a given window size are predicted correctly.

This component enriches the comprehension of the content by analyzing the opinion conveyed by each social content. With this, we aim to determine the attitude of a user with respect to the aspects indicators previously defined.

Analytics

A set of analysis can be executed with our architecture. This component let the user visualize and interact with the results of the analysis.

- Mentions to mobility mobile Apps.
- Sentiment conveyed through opinions regarding mobility mobile Apps aspects.
- Evaluation of the performance of mentioned mobility mobile Apps aspects.
- Following the mapping from section 3.1 determine which innovation characteristics the mentioned mobility mobile Apps match.

Through the results the framework provides, companies can improve their NPD process to have clarity about the perception that users have of their products, and what are the ideas for improvement that they propose on the Web, serving as background for companies' decision making.

4. USE CASE

As exemplification of the methodology presented, a use case is developed, taking as an example the mobile App Uber. The aim is that the proposed framework is comprehensible, using a popular and known mobile App that has come in a disruptive way, to change the paradigm of transportation systems. Uber is today one of the most valuable technology companies in the world, with a value close to US\$ 50,000 million, the one with fastest growing and the most highly rated of all time. In this sense it is interesting to see what features make Uber such a disruptive innovative technology, and how this relate to its users' perception of service. With this, the aim is to provide tools to assess the present situation of this mobile App in Portugal and improve its user's experience.

4.1 Presentation of Uber

Uber Technologies Inc., founded as "UberCab" in 2009, is an American multinational online transportation network company based in San Francisco, California. It develops, markets and operates the Uber mobile App, released in June 2010, which allows consumers with smartphones to submit a trip request, which is then routed to Uber drivers who use their own cars. In 2012, Uber began to expand internationally. In 2014, it experimented with carpooling features and made other updates. As of June 3rd, 2016 the service is available in over 66 countries and 469 cities worldwide (www.uber.com). In simple words, Uber is a platform that connects users and drivers through a mobile App for smartphones.

In Portugal, Uber is present since 2014, in Lisbon and Porto, with a high-quality vehicles service and a low-cost model. Currently, there are two services available: Uber Black and UberX. Uber Black, which opened the domestic Portuguese market, is considered a luxury segment, because it only works with cars of high range like the Audi A6, BMW 5 Series or Mercedes Benz Class E. The base price of this service is 2 euros, which adds 30 cents per minute and 1.10 euros per kilometer. UberX, the low-cost platform, begins with a 1-euro base rate on cars such as Volkswagen Golf, Opel Astra or Seat Leon. The base rate increases 10 cents per minute and 65 cents per kilometer.

In both services, there is no money involved. The value of the trip is deducted from the bank account that is associated with the credit card (which is bound to include to register on

the platform). Before making the request an estimate of the travel price is shown to the user, so only then he decides whether or not to proceed.

Anyone who wants to use a service from Uber needs to download the mobile App for smartphone, which is free. Then it is necessary to create a personal account and enter the credit card number and phone number. When someone wants to request an Uber, he has to access to the account – the application automatically takes the place where he is, because it works by geolocation – and then he can know what are the Black or X services cars that are closer and how long does it take to get to where he is. Finally, the user chooses the service he wants, enter the destination and an estimate of the trip cost is shown.

As said before, the American multinational is present in many countries all over the world, but not without controversy. For instance, China recently banned the company to operate and those caught breaking the law will have to pay a fine. In New Delhi, the service was banned after the alleged violation of a user, but it has been resumed. In Spain, the company decided to suspend the activity after the court decreed the closure of the webpage. In France, the government also wants to ban the UberPop service and in Portland, USA, the company agreed to suspend the activity voluntarily, so that local authorities can prepare new legislation.

Portugal has not been the exception. While users advocate its use indicating that the advantages and ease far outweigh traditional taxis, the latter have not received well the arrival of the mobile App, considering it an unfair competition. On April 29, 2016, about four thousand taxis took to the streets of Lisbon in a slow march to protest Uber. The manifestation began at 9:00 am at Parque das Nações, and ended after 13:00 at Parlamento. At the same time there were manifestations also in Porto, where about 1500 taxis participated, and in Faro, where adherence was around 500 taxi drivers.

To illustrate the approach, we decided to use tweets generated on the days prior and after the manifestation day (namely the 28th and 30th of April 2016). We apply sentiment analysis techniques to analyze how the protest influenced Uber perception in the population, by comparing the sentiment conveyed on the tweets, before and after the protest, respectively. We target with this method to check whether and how the conflict between traditional taxis service and Uber is reflected into user's perception. When there are situations of social revolt, also publicized by the media, people tend to react more

through OSN, expressing opinions and thoughts; mainly on Twitter, which has become a tool that actually measures the pulse of humanity: hundreds of global social movements are instantly organized and shared through this social network, influencing the perception about the discussed topic.

This analysis fits into the last stage of the NPD process (see Figure 3.1), where the innovative product is evaluated through their impact on the market. A competitor may be interested to see the reactions of users against Uber in the sense to detect what their needs are and what they value on the service, and for Uber for improvements in its service, taking into account directly the users' opinions.

4.2 Mapping Uber into innovation characteristics

To demonstrate how Uber fits the innovation characteristics defined by Rogers, for each metric defined in section 3.1, a short evaluation and description of their status is made.

I. Value: Functional

a) Characteristic: Relative Advantage

Affordable price

Users state that Uber is more convenient than taxis, when considering price. There are two types of services: a “luxury” one and a “low price” one, so users can choose on what is more convenient to them, plus the charge is completely transparent. The App is free.

b) Characteristic: Compatibility

Fulfillment of needs

Users feel that their need of requesting a trip to Uber drivers is fulfilled, among being transparent about time and price all along the request process.

Acceptable quality

So far Uber users are very satisfied with the quality of service, compared to the current alternative that are traditional taxis. Uber, according to its user, is an option that surpasses in many aspects what taxis offer.

Consistent quality

Uber users perceive that it offers a safe, reliable and value ride. Plus, Uber drivers are also perceived as an important contribution to this good quality service, being consistent among most of them. Uber drivers are required to maintain several quality parameters, which give them a higher score, and allow them to be more demanded.

Price/quality relationship

Considering that the App is free, users express that the price/quality relationship is high. About the trips, they are, mostly, cheaper and faster than traditional taxis, so in this item the price/quality relationship is also high.

II. Value: Social

a) Characteristic: Relative Advantage

Social fit

Uber has become popular in the age range of young adult professionals who don't have a car or prefers to use taxi for certain occasions, mainly for its price, faster trips and good quality of service. Because of it, more and more people are using it.

Social acceptance – Social impression – Social approval – Social perception

Since Uber has become massive in several markets around the world, its use is seen as cutting edge as it is a disruptive and controversial technology, perceived as very convenient by its users, being a reference to their peers.

b) Characteristic: Compatibility

Social connection

Uber doesn't have the functionality of connecting with friends through the App.

c) Characteristic: Observability

Social communication

Uber doesn't have the functionality of connecting with friends through the App, so the communication with them is not enabled.

Events update

Uber doesn't have the functionality of events updates.

Networking

Uber doesn't have the functionality of connecting with friends through the App, so networking is not enabled.

Social interaction

Uber doesn't have the functionality of connecting with friends through the App, so it's not possible to interact with them.

Diffusion of benefits

Even though Uber doesn't have the functionality of connecting with friends through the App, users commented a lot about the benefits of Uber, and why they prefer this service before the taxis. There are plenty of user reviews on the web, so the qualities of services are rapidly and widely disseminated.

d) Characteristic: Complexity

Social support

Since the popularity of this App influences the entry of new users, it's possible to say that its social aspect facilitates its use.

III. Value: Emotional

a) Characteristic: Relative Advantage

Interestingness

Because of the controversy that has surrounded the use of this app, many people have started using it out of curiosity, what makes it interesting for those who didn't know it and could make use of it.

b) Characteristic: Compatibility

Satisfaction

According to the general perception of users, this app meets what it promises, generating great satisfaction among its users.

c) Characteristic: Complexity

Pleasure

Although the purpose of this app is not to generate pleasure or relaxation, its features facilitate a task that many people do every day, enabling users to save time and money.

Relaxation

Due to this facility, users have less worry and trust the Uber services.

IV. Value: Epistemic

a) Characteristic: Relative Advantage

Test of new technologies

Uber has given a massive start to the use of private cars for custom passenger transport, placing on the table a popular new transport system.

New uses

Uber has amassed a new form of transport that is becoming popular.

b) Characteristic: Compatibility

Exploration

Because of the controversy that has surrounded the use of this app, many people have started using it out of curiosity

V. Value: Utilitarian

a) Characteristic: Relative Advantage

Alternate uses

The App provides the opportunity to experience new forms of transportation

New knowledge

While it provides a different way of transport, it is not possible to assert that it generates new knowledge.

b) Characteristic: Compatibility

Communication variety

Uber doesn't have the functionality of connecting with friends through the App, so it doesn't provide new ways of communicating with others.

Mobile technology updates

By using this App, the users can maintain updated about new services, improvements to the existing ones and/or new features.

c) Complexity

Time saving

Using Uber, users save time when searching for a shuttle and on the transportation service itself, since it has been reported that Uber trips are faster than traditional taxis ones. The App incorporates fleet and driver management, social interaction between driver and

passenger, taxi hailing and payment, which allows the user to do everything in only one place.

Organization

Since this App means easier when transported for many people, they get to have their tasks better organized.

Effective personal life management – Productive personal life management – Efficient personal life management

For many people, transport plays a very important role in their daily lives, as it influences also many other tasks during the day. That is why, as Uber provides a system that gives access to a more efficient way of transportation, users perceive that through its use they are able to manage their lives more efficiently, effectively and productively.

VI. Value: Entertainment

a) Characteristic: Complexity

Boredom relief

Not applicable to Uber.

Entertainment

Not applicable to Uber.

Hang out

Not applicable to Uber.

Enjoyment

It is possible to say that Uber users enjoy using this App, thanks to its good quality and how it facilitates an aspect of their lives.

4.3 Analysis of Uber

As described in the system architecture (see Figure 3.2) to collect the data is necessary to define a number of parameters. In this particular case the first filter is the search entity "Uber", which is not an ambiguous term, so it doesn't lead to confusion; and the second filter is the geolocation "Portugal". The extraction of tweets is made using Socialbus¹, a research platform for extracting, storing and analyzing the Portuguese Twittosphere for R&D and journalistic purposes. It collects data in real-time using Twitter's Streaming API (Application Programming Interface). The tweets are sent to a message broker and processed on two components: stream processing and pre-processing. The resulting data is stored in MongoDB², in the form of JSON objects.

4.3.1 Quantitative analysis

The first analysis is made taking into account the total number of tweets where the word Uber appears, generated between January 1st, 2014 (year that Uber began operating in Portugal) and June 1st, 2016. Figure 4.1 shows the distribution of number of tweets that contain the word "Uber".

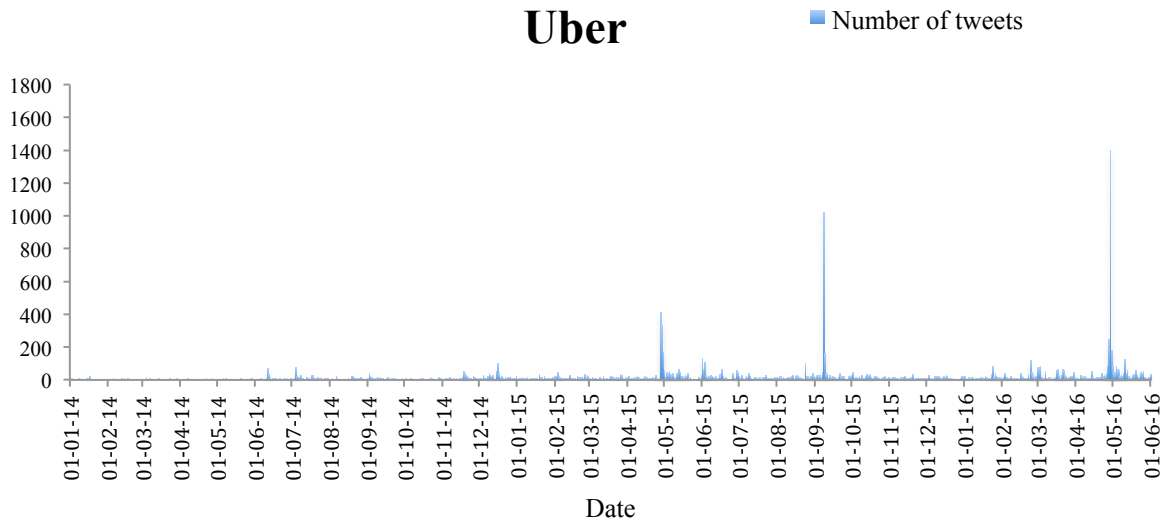


Figure 4.1: Number of tweets for entity "Uber"

¹ www.reaction.fe.up.pt/socialbus

² www.mongodb.org

It can be seen that at the beginning of the analysis period there is a standard trend of number of tweets (with an average of 8 tweets per day), even for a few days there was no tweets mentioning Uber (e.g. on February 16th, 2014 or June 25th, 2015).

This tendency broke down markedly for the first time on April 28th and 29th, 2015 (with 408 and 333 tweets, respectively). On April 28th, some newspapers³ indicated that the Tribunal Cível de Lisboa decreed that Uber must close its website in Portugal and stop passenger transport in the country. The decision was a response to the injunction filed by the National Association of Road Transport Passenger Cars (ANTRAL) that accused the US Company of violating the rules of access and exercise of activity and competition. The next day it was reported that the court decision was temporary, because it was a precautionary measure. After that event, there was some increase in the presence of Uber in Twitter comments, as the average increased to 22 tweets per day (until September 7th, 2015).

On September 8th, 2015 a second peak in the number of tweets was recorded, with a total of 1019 tweets. That day a first protest of taxi drivers against Uber⁴ was performed, in Lisbon, Porto and Faro. Convened by ANTRAL, this protest was aimed to alert to the effects of the violation of law, because finally the decision made by the court on April 28th was not accepted by Uber, which, according to them, in this case constitutes crime. It is not seen that this event has caused impact on the number of mentions of Uber on Twitter during the consequent days, as the average remained at 18 tweets per day (until April 27th, 2016).

April 29th, 2016 saw the largest increase of mentions of Uber on Twitter, registering 1398 tweets containing the word "Uber". On this day there was a second protest, more massive than the first one, of taxi drivers claiming against Uber. By then Uber was already known by the Portuguese consumers, largely thanks to the two previous events described above, so during the day of the protest there was a considerable increase in the presence of Uber on Twitter, also during the previous and next day (247 and 180 tweets, respectively) (see Figure 4.1).

Portuguese users went to Twitter during that day to express their opinions about Uber, traditional taxis service and the dispute between them, as well as the debate about the

³ <https://www.publico.pt/sociedade/noticia/uber-proibida-de-operar-em-portugal-1693930>

⁴ http://www.esquerda.net/artigo/taxistas-protestam-contra-concorrencia-desleal-da-uber/38499?utm_source=dlvr.it&utm_medium=twitter

legality of the service, showing some people in favor and others against Uber. The protest represents a milestone in terms of number of people expressing their opinions on Twitter. There was also much exchange of information on the impact that the protest would cause mainly on the streets of Lisbon, due to the large volume of taxis blocking the roads and that it was during hours of high vehicular and pedestrian traffic.

Evaluating the influence of the protest

Because of the service provided by Uber, and that the dispute in Portugal is with the union of taxi drivers, it is interesting to also analyze how the trend in number of tweets behaves, considering also a filter with the search term “taxi”, since in most tweets the term "Uber" is related to the term "taxi".

We pick up the tweets of the day of the protest, and the previous and subsequent five days, in order to quantitatively analyze the trend of tweets during this period and verify if there was any influence of this event in relation to the number of taxi-related and Uber-related tweets generated.

Figures 4.2, 4.3, 4.4 and 4.5 show the distribution of numbers of tweets during the 11 days specified, considering four cases:

- Tweets containing the word "taxi" (Figure 4.2)
- Tweets containing the word "taxi" and the word "Uber" (Figure 4.3)
- Tweets containing the word "taxi" but not the word "Uber" (Figure 4.4)
- Tweets containing the word "Uber" but not the word "taxi" (Figure 4.5)

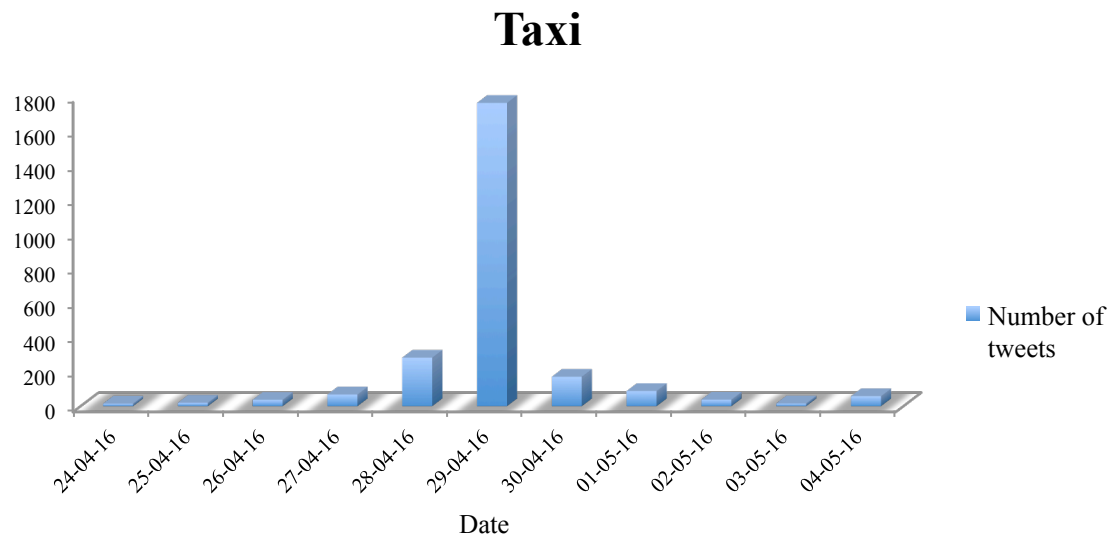


Figure 4.2: Number of tweets for entity “Taxi”

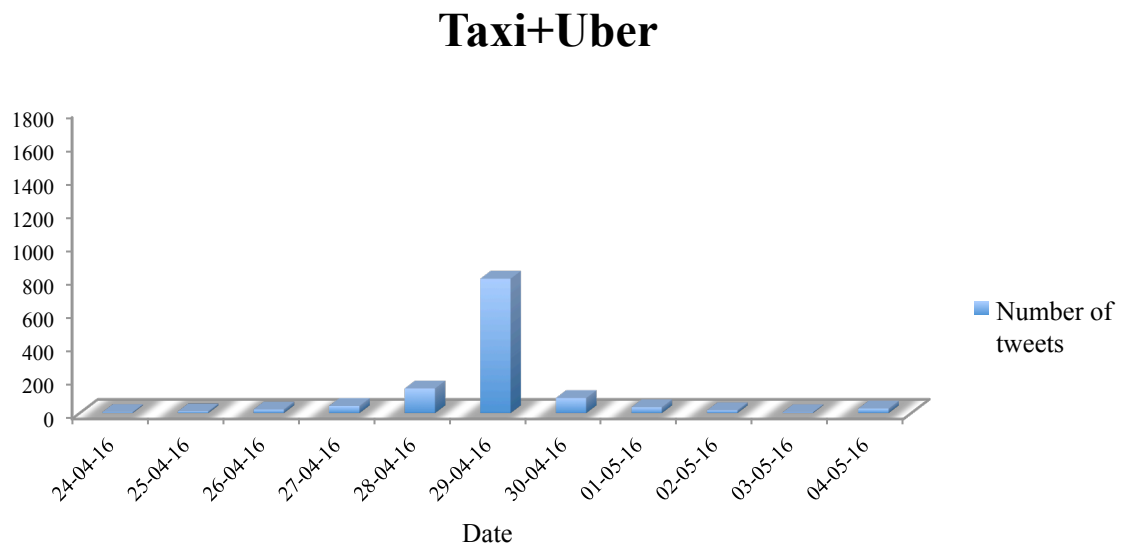


Figure 4.3: Number of tweets for entity “Uber” plus entity “Taxi”

Taxi (no Uber)

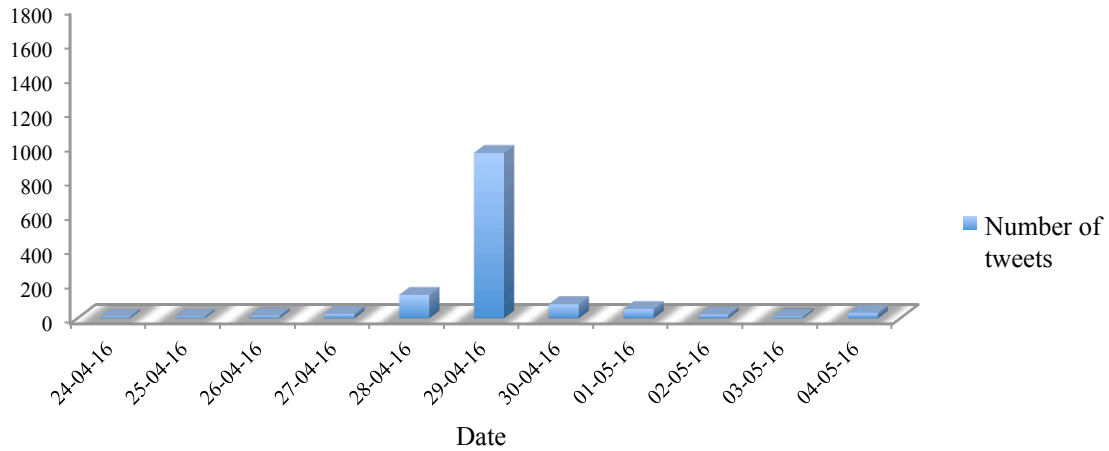


Figure 4.4: Number of tweets for entity “Taxi” (without entity “Uber”)

Uber (no Taxi)

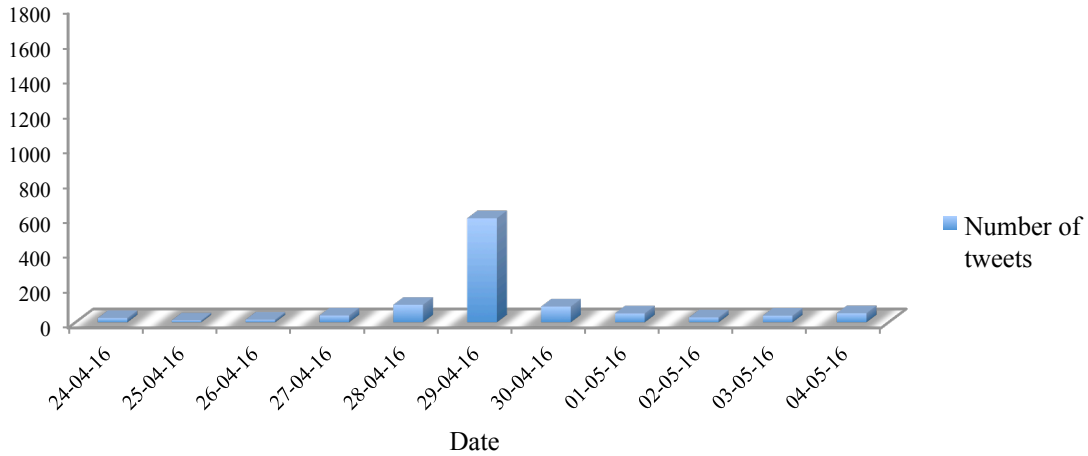


Figure 4.5: Number of tweets for entity “Uber” (without entity “Taxi”)

In all four cases the same trend is observed: a significant increase in tweets on April 29th, accompanied by an increase, less obvious, in the amount of tweets on April 28th and 30th, as a prelude and consequence of the manifestation. On the day of the protest, tweets containing the word “taxi” are the most numerous (1762), even surpassing the number of tweets containing the word “Uber” (1398). This may be explained because the taxi drivers organized the protest; so many people were left with that idea and associate the news event

more with taxis than Uber. This trend can also be seen in Figure 4.4, it is observed that the amount of tweets that had the word "taxi" but not the word "Uber" was 960 on April 29th, against 596 tweets containing the word "Uber" but not the word "taxi".

At the same time, Figure 4.3 shows that the number of tweets containing the words "taxi" and "Uber" was 802 on the day of the protest, a little more than half of those containing the word "taxi".

4.3.2 Sentiment analysis

In order to evaluate the sentiment analysis functionality of the proposed framework, the polarity shift of the population in terms of the perception of Uber is analyzed, so those tweets containing the word "Uber" are considered. A date filter is established, taking the tweets of the day before and the day after the protest: April 28th (247 tweets) and 30th (180 tweets), 2016. The remaining tweets constitute the database used for the analysis, which were manually recorded by two postgraduate students.

Before manifestation

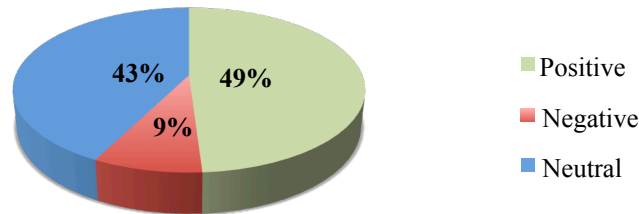


Figure 4.6: Percentages of tweets for every polarity during April 28th, 2016

After manifestation

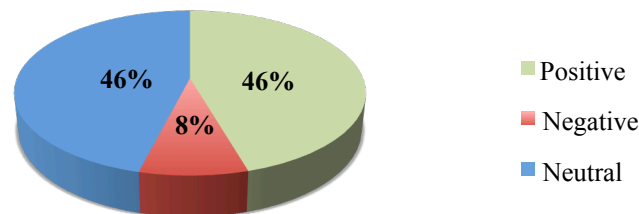


Figure 4.7: Percentages of tweets for every polarity during April 30th, 2016

The whole atmosphere surrounding the demonstration of taxi drivers against Uber in Portugal had a major impact on OSN, reflected on Twitter in a significant increase in entries and comments.

While the data shows that, during that day, the brand Uber became clearly more visible in OSN (the number of tweets containing the word “Uber” was 6 times higher during the day of the protest than during the previous and next days), the sentiment of users about the brand practically did not change. While the positive and negative feelings decreased by 3 and 1 percentage point, respectively, the neutral sentiment increased by 3 percentage points.

A massive and opinion-conflicting event, which was highly diffused through OSN and media influenced greatly the visibility of the main matter and installed the brand in the minds of users; but it did not influence the perception that users had about it, because to have enough arguments to change that view requires a deeper process of experimentation and a longer period of time. The main topic of discussion was not focused on functional characteristics of Uber, but rather in its dispute with traditional taxi drivers, so the discussion that took place on Twitter had more to do with this than with an assessment about quality service of Uber. In fact, the aim of the taxi drivers was damaging the image of Uber, but they did not achieve it. This event meant a lot of free publicity for Uber.

Aspects for sentiment analysis

There are a number of features that make Uber so valued by people, who see it as a better option than taxis and conventional transportation system: technologies like Uber makes easier to find a particular transport service, it offers better cost, the response time is faster, it is an efficient service, delivers more control to the user, it has a wide coverage, several options are offered, the application provides security for users, competition helps the overall improvement of the service, it serves an audience with specific needs, among others. Based on these appreciations, eight evaluation metrics are established, which have been reported to be the most important, from the user point of view, when deciding to take or not a Uber service: **overall quality, vehicle evaluation, driver evaluation, comfort, price, trip time, waiting time and technology infrastructure.**

Considering the tweets from the manifestation's previous and next days, a quantitative analysis is performed, in order to have a visualization of how these metrics are reflected in tweets about Uber, and how is the sentiment expressed relatively to the same metrics.

Before manifestation

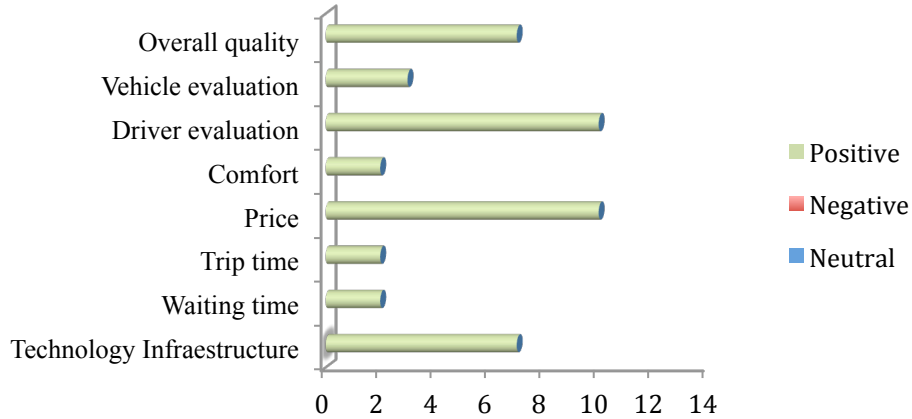


Figure 4.8: Distribution of tweets according Uber metrics during April 28th, 2016

After manifestation

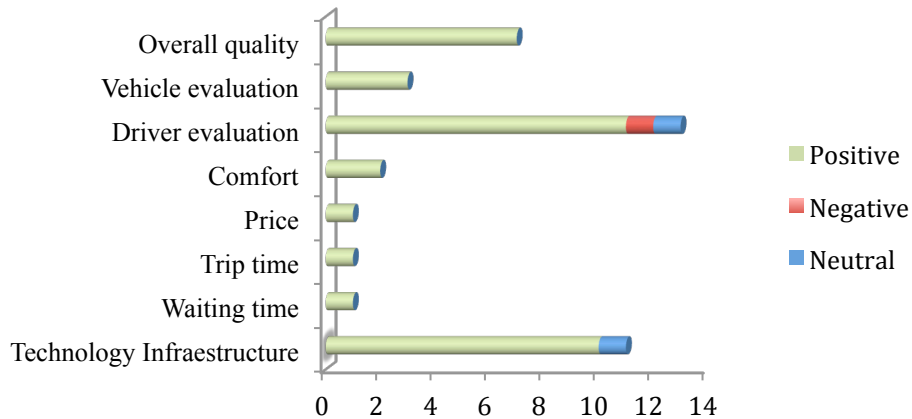


Figure 4.9: Distribution of tweets according to Uber metrics during April 30th, 2016

Indeed several tweets refer to service features Uber (24 per day, on average), being the most common for both days the overall quality of the service, driver evaluation and technology infrastructure. Users set in these metrics the biggest differences between Uber and traditional taxi service, and so are some of the most valued.

Interestingly, although the protest after the total volume of tweets was lower, the percentage of these that referred to some characteristic of Uber was higher (9.7% vs. 12.7%). This indicates that the visibility gained by Uber through the manifestation also included the dissemination of their qualities, that when being discussed in a social network, are installed in the minds of more users.

5. CONCLUSIONS

To provide a clear vision of what was developed in this thesis, we present a summary of the proposed methodology and the analysis performed, along with their results. In addition, proposals on how to continue the research initiated are addressed.

5.1 Summary

The objective of this thesis is to assess the impact of OSN as a user-centered information provider for companies to improve their NPD processes, proposing a framework for companies, specifically in the transportation area, to harvest information provided by users. The purpose of creating a system with this information is to support the companies' decision-making process when taking into account users' opinions and sentiment about products, for improving their qualities and better meet users' needs. In order to accomplish these goals, we propose three components:

First, a mapping between mobile Apps' metrics and the characteristics of innovation defined by Rogers (1962), so that companies can consult this table in a fast and structured way, as an alternative that indicates which patterns a mobile App should contain to be perceived as innovative. A total of 37 metrics for measuring performance is defined, divided into six customer value perspectives. The metrics are classified into the five characteristics of innovation defined by Rogers, in order to have a clear vision on what are the characteristics people value the most in a mobile App and how these characteristics match into their innovative potential.

Second, taking into account the general NPD process structure, we build a flowchart where the perspectives communicated by clients in OSN through sentiment, opinions, complaints, desires, suggestions, preferences, thinking and so on are incorporated. On the idea generation phase, customers are offered the chance to express their necessities for the business. Every idea is gathered and handled to locate the ones that have the most potential and are feasible. During the product development stage, customers' inputs can be included through tests or surveys, which it is necessary for the company to deliver information about the product to the users in order for them to elaborate some opinions. This aspect is not

considered in this thesis, given that it is focused only on one-way information flow (from users to producers). In the product launch stage customers can advertise the offering and improve the functionalities of the product, by assessing its components and expressing their thinking about it. The framework considers users' input in idea generation and product launch stages.

Third, the general architecture that allows companies to extract, analyze and aggregate data from OSN in order to produce valuable analytics. The framework starts with the interaction with a user (company) who defines the OSN and the heuristics to drive the extraction process. Next, the data collected is processed for avoiding irrelevant content. With this final dataset, a sentiment analysis is performed, by applying three processes: identification and extraction of entities in evaluative texts, identification and extraction of entities' aspects and determination of sentiment polarities on entities and entities' aspects. This component enriches the comprehension of the content by analyzing the opinion conveyed by each social content. Finally, the analytics interface let the user visualize and interact with the results of the analysis.

5.2 Discussion

As exemplification of the methodology proposed, we develop a use case taking as example the mobile App Uber, chosen for being a disruptive technology, which has quickly become popular in over 66 around the world, transforming the traditional transportation concept.

To demonstrate how Uber fits the innovation characteristics defined by Rogers, for each metric defined for measuring performance of a mobility mobile App, a short evaluation and description of their status is made. Among its features Uber presents most of the metrics defined, except those relating to the entertainment aspect, more than anything because this is not the purpose of the mobile App; and those related to social connection, something that should be addressed and improved, because today users expect to connect with other users through the use of mobile Apps.

After this assessment, we develop some analysis following the architecture proposed. To collect the data we apply two filters: the search entity "Uber" and the geolocation "Portugal". With this data set we conduct two types of analysis: quantitative and sentiment analysis.

Quantitative analysis

On April 29th, 2016, there was a manifestation of taxi drivers in Lisbon, Oporto and Faro against Uber, claiming that the service is illegal and unfair competition. In this kind of situations of social revolt, also publicized by the media, people tend to react ore through OSN. One of the most used is Twitter, which has become a tool that actually measures the pulse of humanity.

It should be noted that this analysis fits into the last stage of the NPD process (product launch), where the innovative product is evaluated through their impact on the market. This is relevant because a competitor may be interested to see the reactions of users against Uber in the sense of detecting what their needs are and what they value about the service, and for Uber to improve its service, taking into account directly the users' opinions.

The first part of this analysis was made considering the total number of tweets where the word Uber appears, between January 1st, 2014 and June 1st, 2016. At the beginning there is a standard trend of number of tweets, this tendency breaking down for the first time on April 28th and 29th, 2015: the Tribunal Cível de Lisboa decreed that Uber must close its website in Portugal and stop passenger transport in the country.

On September 8th, 2015 a second peak was recorded: that day a first protest of taxi drivers against Uber was performed.

April 29th, 2016 saw the largest increase of mentions of Uber on Twitter: there was a second protest, more massive than the first one. By then Uber was already known by the Portuguese consumers, largely thanks to the two previous events, so during this day there was a considerable increase of the presence of the brand on Twitter, as well during the previous and the next day.

The three events mentioned above represent a milestone in terms of number of people sharing information and expressing their opinions on Twitter.

It is also interesting to analyze how the trend in number of tweets behaves, considering the search term “taxi”, since in most tweets the term “Uber” is related with it. We pick up the tweets of the day of the protest, and the previous and subsequent five days. There are 4 tweets classifications:

- Tweets containing the word "taxi"
- Tweets containing the word "taxi" and the word "Uber"
- Tweets containing the word "taxi" but not the word "Uber"
- Tweets containing the word "Uber" but not the word "taxi"

In all four cases the same trend is observed: a significant increase in tweets on April 29th, accompanied by an increase, less obvious, in tweets on April 28th and 30th, as a prelude and consequence of the manifestation. Since the union of taxi drivers organized the manifestation, many people were left with that idea and associate the event with both taxis and Uber.

Sentiment analysis

In order to evaluate the polarity shift of the population in terms of the perception of Uber because of the protest, we consider the tweets containing the word “Uber” generated during the days before and after the protest. While there was a significant increase in entries and comments on Twitter about Uber, the sentiment of user about the brand practically did not change. The aim of the taxi drivers was damaging the image of Uber, but this did not happen, in fact, this event meant a lot of free publicity for Uber. A massive, highly diffused and opinion-conflicting event influenced greatly the visibility of the matter under discussion; but it did not influence the perception that users had about it, because to have enough arguments to change that view requires a deeper process of experimentation and a longer period of time.

There are a number of aspects that make Uber so valued by people, being the most mentioned ones: overall quality, vehicle evaluation, driver evaluation, comfort, price, trip time, waiting time and technology infrastructure. Considering the tweets from the protest’s previous and next days, we perform a quantitative analysis in order to have visualization on how these metrics are reflected in the tweets. People indeed express their opinions about the quality of Uber mentioning the metrics defined, being the most common the overall quality of the service, driver evaluation and technology infrastructure.

5.3 Future work

In order to improve the work presented in this thesis, we believe there are two important aspects than can be developed in a deeper way:

- a) Development of the platform, to constantly monitor what users express about a product on OSN, blogs and forums.
- b) Validation of the framework, through the application of the methodology in an environment closer to reality, using actual cases of NPD process.
- c) Extension of the framework to the others NPD stages, which are not considered in this thesis.

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APPENDIX A: Tweets containing the term “Uber” from April 28th, 2016

ID	Text
72581672107286937	Je suis UBER
72581544143686041	"Inovação sim, Uber não. https://t.co/OTScD2bVit "
72581518357109555	Inovação sim, Uber não. https://t.co/PxV49J42Td
72582429263466086	Táxis... prefiro a UBER https://t.co/nGxkrb0L3I
72582685787521433	Uber a moda portuguesa https://t.co/RIB4Ebudp0
72572864802052505	Nomeadamente a Uber https://t.co/jVcVSiw4ZY
72574046683942502	How Uber conquered London https://t.co/2tpQ39FvYI
72550021318039142	@SICNoticias os taxistas estão a fazer publicidade gratuita á Uber #uber
72560203886469529	[SHOT] Taxistas contra a Uber repetem em Portugal protestos de dezenas de países: #taxistas #uber #portugal
72572893832086732	RT @pmrgouveia: Nomeadamente a Uber https://t.co/jVcVSiw4ZY
72575520684001280	RT @cpinto: How Uber conquered London https://t.co/2tpQ39FvYI
72580954798255718	Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72581734133493350	RT @mises_portugal: Inovação sim, Uber não. https://t.co/OTScD2bVit
72583429925832704	Eu não uso taxis nem uber. https://t.co/OiPniIQ2HJ
72576828974655897	Amanhã vai ser um bom dia para a Uber
72576617987323494	Uber divulga estudo favorável à sua actuação https://t.co/3gnmpa8SPH
72577205769119334	Portanto, amanhã é para apanharmos um Uber é isso?
72580676029294182	Yo la conocí en un UBER, en camino al cluuuub
72557156007821312	RT @Lusa_noticias: Taxistas admitem convivência pacífica com Uber "legalizada"
72560753102073446	How Uber conquered London Sam Knight https://t.co/IPQDS5VRfu
72562036340989542	A melhor campanha da UBER são os protestos dos taxistas
72572827330979430	Ja esta implementado o reforço Uber para amanha?
72568217326154956	@_RosarioVarela @t0ya87 os portugueses aderiram ao Uber, os taxistas não.
72564304683508531	#Taxistas aceitam #Uber mas 'legalizada' - #Publitoris - Publitoris https://t.co/4Xx5ZqfNZr
72565348456613478	@FilipeBGuerre @UberPortugal nunca percebi o porquê da Uber ser "ilegal".
72565674952557772	https://t.co/jpvg3OrlkX Eu quero a UBER em Portugal
72567151005732044	@FilipeBGuerre @UberPortugal então o que é a Uber?
72568941833869721	#antral VS #uber via #sapo https://t.co/iURMRIPcwM
72574034257476403	Se não houver táxi vá de Uber! https://t.co/IfJ4XVpV7t
72574066398008115	Lá tenho de apanhar um Uber. https://t.co/QoCRKmAuQG
72572263330049638	TESTADO: Duas viagens em Lisboa, uma num táxi e outra através da Uber. #portaldaqueixa #taxi #uber #queroescolher https://t.co/UgYFEm7h4M
72568507270005145	@FilipeBGuerre @UberPortugal como é que funciona a Uber. se eu quiser ser motorista da Uber, por exemplo.
72579232515113369	TESTADO: Duas viagens em Lisboa, uma num táxi e outra através da Uber. https://t.co/1FrpZ2dczO #portaldaqueixa #taxi #uber #queroescolher
72560676855484006	#Uber admite distribuir serviços para taxistas em Portugal: O diretor geral da Uber em Portugal, Rui... https://t.co/MSrWLFwRuO #dnoticias

72560213601329971	@NunoCardoso porque a Uber não tem taxis. Uber contrata empresas licenciadas. Se o Nuno fizer o mesmo não tem problemas
72570989388644761	E se pudesse usar a app da Uber para chamar um táxi? @Uber https://t.co/ryhViz4Kmr
72569187960240128	@vinhodacasa não sei o futuro. Acredito q a Uber o seja, a forma para tal acontecer não sei. (não disse q era a favor da Uber)
72575753792092980	Os taxistas podem vencer a Uber se fizerem o mesmo que a Uber em termos de infraestrutura tecnológica. Têm uma vantagem: ainda é um hábito.
72579439621874483	Se os taxistas fizessem esforços para mostrar as vantagens que têm em relação à Uber, ganhavam clientes e eram mais respeitados. #Uber
72579362247034470	"Assim, um motorista Uber com má pontuação não pode esperar continuar a operar muito tempo. Porque os clientes, ao chamarem um Uber, têm ac...
72556378101988147	Espero sinceramente que a Uber fique legal em PT! Esperados quatro mil táxis em protesto contra a Uber: https://t.co/ymfz4klpR via @niiws
72572197703452672	a Uber é uma empresa ilegal que trabalha clandestinamente e tem sede noutra país para contornar a lei. E ainda há pessoas que usam Uber.
72567532030566809	@_RosarioVarela sou totalmente a favor da Uber atenção, mas a verdade é que os taxistas têm de pagar licenças e os motoristas da Uber não.
72571600842252697	Kind of Uber ... Vá se lá entender a narrativa ... https://t.co/5Nv5b1YO8C
72581712774841958	Seis mil taxistas em protesto histórico contra a Uber https://t.co/91eVdlsCnq via tvi24ultimas
72581334773256601	RT @celso: Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72580976493711769	RT @celso: Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72580979250209177	RT @celso: Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72580984698195558	RT @celso: Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72581387421838950	RT @celso: Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72581450930313625	RT @celso: Amanhã usem Uber e usem Waze! https://t.co/07FxxKj2oI
72581684502282649	#Portugal Seis mil taxistas em protesto histórico contra a Uber - TVI24 https://t.co/euYSBlsBua
72582159917428326	RT @igama: Whenever Taxi Drivers go on Strike, Uber says thank you. https://t.co/D6EXw6gysE
72581914700798771	RT @tvi24ultimas: Seis mil taxistas em protesto histórico contra a Uber https://t.co/DWrgl7XEHL via @tvi24ultimas
72582344352296550	Recuso-me a andar em táxis que tenham autocolantes anti-Uber
72583348844065996	Nunca viajei num Uber e já me expirou a promoção inicial (hint hint @UberPortugal)
72582769314971238	[TVI24] Seis mil taxistas em protesto histórico contra a Uber https://t.co/DN6xU7EBtw
72577136082018713	Acabei de ver um Tuk Tuk contra a Uber. Afinal não são só os táxis.
72576277507136307	Uber divulga estudo favorável à sua actuação https://t.co/06uGGWa0bw #economico #de https://t.co/kGzfsrJgc1
72576169497939558	António Costa entre o UBER e o PEC https://t.co/eQK32JKaWF
72576616455568588	RT @JNegocios: Taxistas dizem que Uber lhes “rouba” mais de 20% do negócio https://t.co/M8uV0SEBvV
72576907172410982	[Económico] Uber divulga estudo favorável à sua actuação https://t.co/kKKpNLEr3Z #economia
72577408622856192	#queroescolher. A resposta da Uber ao protesto dos táxis https://t.co/XYKbdiVd8 grande campanha, @UberPortugal
72578087337584640	Se fossem todos como eu o táxi e a Uber já tinham ido à falência
72578475007032524	@pedroprola a Uber poupa nos carros. Com menos carros presta o mesmo serviço.

72578901058142617	RT @joamiranda: @pedroprola a Uber poupa nos carros. Com menos carros presta o mesmo serviço.
72579168967619379	[TSF] Manif - #queroescolher: taxistas saem à rua, Uber contra-ataca nas redes sociais https://t.co/9cSWAKuBvp
72578239058967347	[Observador] 12 questões para perceber a “revolta” dos taxistas contra a Uber https://t.co/KXmXqwi3jc
72578239185216716	[Observador] Taxistas vs. Uber. Saiba como escapar à marcha lenta https://t.co/oCxcHNS65P
72578339488650444	@Peliteiro A minha questão é se os Uber não são táxis sem licença
7,258E+16	RT @PMGSousa: Amanhã teremos uma manifestação que nos ajudará a lembrar porque devemos escolher a UBER
72579965008784998	Amanhã teremos uma manifestação que nos ajudará a lembrar porque devemos escolher a UBER
72580623772461056	@d14196 @rsantos50 @trainmaniac mas isso é culpa deles, não é da Uber
72580016381035725	RT @PMGSousa: Amanhã teremos uma manifestação que nos ajudará a lembrar porque devemos escolher a UBER
72580116572472115	RT @alvaromferro: Esta marcha lenta dos táxis amanhã é um esquema publicitário da Uber, não é?
72580155030464921	RT @alvaromferro: Esta marcha lenta dos táxis amanhã é um esquema publicitário da Uber, não é?
72580030518779904	RT @PMGSousa: Amanhã teremos uma manifestação que nos ajudará a lembrar porque devemos escolher a UBER
72580130542021017	RT @alvaromferro: Esta marcha lenta dos táxis amanhã é um esquema publicitário da Uber, não é?
72580035320834457	Esta marcha lenta dos táxis amanhã é um esquema publicitário da Uber, não é?
72580036884893286	RT @PMGSousa: Amanhã teremos uma manifestação que nos ajudará a lembrar porque devemos escolher a UBER
72580104260512563	RT @alvaromferro: Esta marcha lenta dos táxis amanhã é um esquema publicitário da Uber, não é?
72580331556980326	Amanhã com a greve dos taxistas deve ser um bom dia para a UBER
72580593914886144	Vou continuar sem andar de táxi enquanto uber uma alternativa melhor
72556176209600512	Duas viagens em Lisboa, uma com táxi outra com Uber. Quanto custou? https://t.co/KilvkJkdJA
72556517476195123	[Observador] Taxistas admitem convivência pacífica com Uber “legalizada” https://t.co/L1128IUSma
72553732050654412	[Destak] Uber admite distribuir serviços para taxistas em Portugal https://t.co/tfqrRp7wKC
72559933259506483	@NunoCardoso é isso que a Uber argumenta. Que não se deve impedir a inovação.
72559853781636710	@NunoCardoso parvo porquê? Faz tanto sentido proibir a Uber como proibir abertura de mais pastelarias
72560253182124441	@NunoCardoso isso é um raciocínio circular. Pressupõe que a Uber é ilegal, que não é.
72560897770750361	@NunoCardoso Como a Uber passa facturas e é legal não percebo esse argumento.
72560771779304652	@NunoCardoso Se calhar a prioridade da Uber é servir os passageiros.
72558384441450496	“Uber will make drivers in China take selfies to prove it’s really them” https://t.co/2HIVh9KAmQ
72558416095439257	That moment you realize you made a bad decision... #uber #taxi #secalhardeviamosterpensadomelhornisto https://t.co/ol3vt2Q3Qr
72558879448172544	Taxistas admitem convivência pacífica com Uber "legalizada" https://t.co/0pQ2uCGnZJ https://t.co/jggllXy8pM
72559057724549120	"Uber Legalizada" é uma espécie de "Maria Mais Atrevida" https://t.co/PPDgiwilw4

72559014779057356	Uber motiva taxistas a melhorar comportamento https://t.co/YMyxuX0K5s Ler https://t.co/ThcmbZzbO1
72559479317517926	Uber admite distribuir serviços a taxistas em Portugal https://t.co/79pWYBreWF Ler https://t.co/ThcmbZzbO1
72561546593910784	Uber admite distribuir serviços para taxistas em Portugal https://t.co/6aLbuwETCi
72561137657250611	Pressionados pelo impacto da Uber, taxistas tentam mudar comportamento e queixas diminuem https://t.co/VaInKIpxy9
72562747437002752	Uber ou táxi? Uma pergunta sem sentido: https://t.co/gq63ZXH7p9 via @observadorpt
72563839486120345	"a uber até tem seguranças no carro" ouvido no forum da #tsf
72563670550871244	[Observador] Uber ou táxi? Uma pergunta sem sentido https://t.co/TdYkuypPin
72562585770058137	Duas viagens: Uma com táxi, outra com Uber. Quanto custou? https://t.co/WLki1pavyM
72562958756524032	RT @goncalocvale: As manifestações dos taxistas são momentos ótimos para apanhar um Uber. #fb
72563699060810956	[TSF] Ministro confessa: "é difícil dizer que a Uber vai parar" https://t.co/vAeNr3A0Ky
72561670675694796	As manifestações dos taxistas são momentos ótimos para apanhar um Uber. #fb
72562083182141849	Uber admite distribuir serviços para taxistas em Portugal https://t.co/UbJg62uinc
72562413282659123	Pressionados pelo impacto da Uber, taxistas tentam mudar comportamento e queixas diminuem https://t.co/9v7Q3OSbmo
72570508986483507	A ler na secção "Uber" > "Chamam-lhe uma economia de mercado (3)" https://t.co/x21bRU9pDV
72567398301899571	o pcp vai apoiar os taxistas contra a Uber? Não sabia q os taxistas eram sindicalizados
72567688808620851	@_RosarioVarela de resto, preço, qualidade, higiene, carros, educação, facilidade de pagamento...mil vezes a Uber.
72564499072712294	Uber disponível para vender serviços de táxis em Portugal https://t.co/40HoNFfn6t
72565189172883456	RT @onifodaz: se os ETs não me levarem hoje eu chamo o Uber
72565193925453824	@davidmarinho90 isso e os da uber usam uma cena chamada gps com controlo de tráfego.
72565129289956556	Duas viagens: Uma com táxi, outra com Uber. Quanto custou? https://t.co/LSXGr1bK8U
72565637885818060	"É difícil dizer que a Uber vai parar" https://t.co/EsPuEGKGyo
72565963195603763	Uber admite levar táxis para a sua aplicação móvel https://t.co/BFBwQngyky
72566414816867123	Uber admite levar táxis para a sua aplicação móvel https://t.co/BHeoABNWQs https://t.co/CC5aRXoW5q
72566463138198732	E, por acaso, está bem visto. Nesse dia só estará disponível a Uber.
72566897440341196	A Uber a tentar utilizar a tática do "Cavalo de Troia"... https://t.co/QTnRGBtesC
72566687697458381	Pressionados pelo impacto da Uber, taxistas tentam mudar comportamento e queixas diminuem https://t.co/TRiiZa857Y
72568982963217203	Os taxistas têm razão mas é uma luta perdida, o futuro é a Uber.
72573557468699443	[Jornal de Negócios] Táxis versus Uber: os argumentos de cada lado https://t.co/SN6UHsRtGX #economia
72574530447416115	Uber ou táxi? Uma pergunta sem sentido: https://t.co/egWnu13D4h via @observadorpt
72572148455194624	Mapa: Saiba que ruas vão estar condicionadas pela manifestação de táxis anti-Uber https://t.co/yWJ8ck5pQU via @JNegocios
72572951182064435	Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta

72573027723500339	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72573027887499673	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72572934203520614	Acabei de receber um email da @UberPortugal a respeito da paralisação da associação dos Taxi. Well Done @Uber, Well Done!
72568912783689728	[Expresso] Milhares de taxistas vão sair à rua para pressionar o Governo a suspender a Uber https://t.co/IHsNUXd9uf
72569583799361536	@djthengineer tinha piada isso dos 20% ser lei e nenhum taxista cumprir os requisitos mínimos para o serviço uber.
72569668419850240	[Expresso] Mais de seis mil táxis vão abrandar o trânsito em Portugal em protesto contra a Uber https://t.co/zURRmnRf4N
72569770767591424	Deixa ver se advinho...os taxistas são o Benfica e a Uber tem toda a razão https://t.co/7D0TUQAsk5
72575273004478054	RT @JNegocios: #Uber disponível para vender serviços de #táxis em Portugal https://t.co/ZWJJp8iKE4 https://t.co/QbSVNNI2Od
72575258188084019	Uber is emailing customers about tips — here's ... https://t.co/RL0iZYmrJx #innovation https://t.co/wai6kgwd18 https://t.co/ohbZNxukec
72575541134577254	[Observador] Uber está preocupada com “segurança” dos clientes e lança recomendações para greve de amanhã https://t.co/Ga7LkPhbcg
72581803358806016	@igama I'm pretty sure uber will not have enough cars for the demand tomorrow morning in Lisbon :) Best publicity ever.
72583268543280332	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72583591945492480	[Jornal de Negócios] Eurosondagem: Maioria dos lisboetas e portuenses quer Uber a operar em Portugal https://t.co/uXEnO9D8Jc #economia
72576151259435417	Razões pelas quais a #Uber pode não ser assim tão fixe. #táxis https://t.co/LeMsxaShTf https://t.co/UESEabQEgx
72576673256918630	[Jornal de Negócios] Taxistas dizem que Uber lhes "rouba" mais de 20% do negócio https://t.co/LHSKHLt10O #economia
72576906486654976	Qual escolher? Compare e tome a melhor decisão https://t.co/sMysUeFt1F #portaldaqueixa #uber #taxi #queroescolher https://t.co/Hcfm9nuKKt
72578854121361817	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72577756204831948	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72577831800031641	RT @opinadouro: Taxistas vs. Uber. Saiba como escapar à marcha lenta - Observador - Milton Cappelletti - Observador - Especiais - https://...
72578239276648857	[Observador] Testámos a aplicação da Uber e comparámo-la com dois serviços de táxi https://t.co/ChgwGXXbbk
72578399834198425	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72578208346609254	RT @der_terrorist: Se fossem todos como eu o táxi e a Uber já tinham ido à falência
72579211715976806	Qual escolher? Compare e tome a melhor decisão https://t.co/sMysUeFt1F #portaldaqueixa #uber #taxi #queroescolher https://t.co/fhCgJ9h3K8
72579540374509977	Com o restaurante destruído, senhor dos kebabs foi para motorista da Uber: Taxistas já... https://t.co/4rBoLZRCSg
72579979208169472	RT @Yahoo: Uber may start charging extra if you make your driver wait https://t.co/jNiZyBPPR2 via @YahooTech
72580021159191347	RT @Yahoo: Uber may start charging extra if you make your driver wait https://t.co/jNiZyBPPR2 via @YahooTech
72580540203051008	@rsantos50 @d14196 @trainmaniac pior é haver vários preços para o mesmo trajecto. Na Uber nunca vi acontecer
72556174413584793	[Noticias ao Minuto] Duas viagens em Lisboa, uma com táxi outra com Uber. Quanto

	custou? https://t.co/lbKRuKzZ0k
7255432522978355	RT @GizmodoBR: Concorrente do Uber promete preços competitivos no Brasil sem tarifa dinâmica: https://t.co/Sq0cEZC4Dv https://t.co/ATR2620F...
72556868645555404	[Diário Digital] Experiência em Lisboa revelou tempo, preço e percursos idênticos de táxi e na Uber https://t.co/GRwkGFECok
72559847666328371	Pressionados pelo impacto da #Uber, taxistas tentam mudar comportamento e queixas diminuem: Episódios... https://t.co/bZCOalvi4g #dnoticias
72559848638989107	Taxistas admitem convivência pacífica com #Uber "legalizada": O presidente da Federação Portuguesa do... https://t.co/pUG47QQWEh #dnoticias
72560265740722585	@NunoCardoso todas as barreiras existentes para proteger taxistas obrigaram a Uber a usar um modelo diferente em Portugal - menos liberal
72560061586753945	@nunocardoso estás a confundir Uber PT com as outras, em Portugal os condutores são empresas/taxistas já licenciadas @joamiranda
72560400625764761	@NunoCardoso a ANTRAL descreveu ao juiz o funcionamento da Uber noutros países e o juiz aceitou sem validar @joamiranda
72560888197249843	@NunoCardoso não discuto - desconheço completamente a realidade Norueguesa, estou apenas a partilhar o que sei da Uber em PT @joamiranda
72560813399384473	@NunoCardoso Nenhuma dessas classes se está a queixar. Os passageiros e os motoristas da Uber andam satisfeitos.
72560844316426649	[Atualidade] Taxistas contra a Uber repetem em Portugal protestos de dezenas de países: A aplicação... https://t.co/wV35dpUUWc #ualmedia
72559275061220556	RT @arestivo: That moment you realize you made a bad decision... #uber #taxi #secalhardeviamosterpensadomelhornisto https://t.co/ol3vt2Q3Qr
72558175837736960	Lisboa vai ser invadida por uma marcha lenta de 4 mil taxistas contra a Uber - https://t.co/2XiPNLZsBA
72558683486502092	[ZAP Aeiou] Lisboa vai ser invadida por uma marcha lenta de 4 mil taxistas contra a Uber https://t.co/2KQ9Evcxr0
72559917605525094	@NunoCardoso O que se está a contestar é precisamente essa diferença arbitrária. Uber é ilegal com que justificação?
72570674845202022	Uber contra-ataca nas redes sociais e alguns taxistas ameaçam furar pneus do Twitter https://t.co/5P8QZBKjnQ
72573050605525811	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72573120244811776	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72568362899123814	@pedrojmenides a Uber não quer ser legalizada. se for deixa de ter lucro. daí o carácter perverso da sua actividade
72565778036810137	@FilipeBGuerra @UberPortugal então vamos proibir todas as aplicações para telemóveis? é que a Uber é uma aplicação..
72566504053631795	@seufert @observadorpt o mais provável. A uber também não interessa este clima. O problema é : (cont) https://t.co/fJKxoHEaIO
72566751612359065	RT @sapo: Uber admite levar táxis para a sua aplicação móvel https://t.co/BHeoABNWQs https://t.co/CC5aRXoW5q
72573639060072857	RT @inimigo: Uber contra-ataca nas redes sociais e alguns taxistas ameaçam furar pneus do Twitter https://t.co/5P8QZBKjnQ
72574246904492851	Bem escrito, não se posiciona contra a Uber e de forma subtil diz que é anterior a esta.
72574206093493043	RT @imprensafalsa: Com o seu restaurante destruído, senhor dos kekabs foi para motorista da Uber: Taxistas já desconvocaram marcha lenta
72571664058381107	RT @Wonderm00n: Amanhã é um bom dia para começar a usar Uber. Aqui fica o meu código para 10 €ricos grátes > "ubermarcoalmeida" https://t.co/...
72572278385504256	a argumentação a favor da Uber é um conjunto de falácias. É bom que se saiba que a App não tem problema. Aliás há outras app nos taxis.
72572694676467712	O ministro do ambiente tinha mesmo intenções de travar o Uber? Depois a geringonça vem com aqueles programas de inovação 4.0

72572838744937676	Amanhã em solidariedade com os taxistas, vou apanhar um Uber para casa. São 800 metros, mas o que conta é a intenção.
72564422101374566	Aliás, o presidente da Federação Portuguesa do Táxi até diz que podem "conviver" se a Uber mandar serviço para os taxistas. Ainda acabam BFF
72567665863675904	@_RosarioVarela não têm não. É a única luta a que dou razão aos taxistas. Além de cursos que também têm que tirar. Os da Uber, zero.
72568916130754560	RT @expresso: Milhares de taxistas vão sair à rua para pressionar o Governo a suspender a Uber https://t.co/UqNfNlnrZA https://t.co/zxFKou4...
72569012673148108	os TAXISTAS podiam aproveitar hoje a atenção dos órgãos de comunicação social para lançar a APP que os iria colocar no mesmo patamar da UBER
72574876736284672	RT @joaomhenrique: Os tipos da Uber parecem ser muito modernos. Mas quando eles dominarem o mercado, vão fazer marchas lentas contra os car...
72575581805494681	RT @iamalexbing: uber ou táxis, ok eu Nao tenho dinheiro pra isso, ando de metro e depois da uma da manhã vou a pé
72580959320555929	RT @gazua_: O que é que curioso é que eu já falei com inúmeros taxistas que admitiram que foi devido à Uber que surgiram as apps do MyTaxi...
72580936513187840	@plaka888 @dhorta8 @d14196 @trainmaniac é esse o caminho, a Uber veio dar uma pedrada no charco, agora que se adaptem com apps assim.
72581300736062668	Nunca usei a Uber mas já usei taxis. Nos taxis já apanhei bons profissionais, maus e muito maus profissionais, alguns nem deviam ter sequer...
72581302495575244	Nunca usei a Uber mas já usei taxis. Nos taxis já apanhei bons profissionais, maus e muito maus profissionais, alg... https://t.co/InOW54Y2Sy
72582424447565004	RT @37227: Taxistas com um terço no retrovisor e uma imagem de Fátima estampada atrás no carro a prometerem porrada aos Uber. Ide para o ca...
72582414590953062	Taxistas com um terço no retrovisor e uma imagem de Fátima estampada atrás no carro a prometerem porrada aos Uber. Ide para o caralho.
72576339663376793	décadas a levar com os conhecidos predicados que quase definem os taxistas... não consigo estar contra esta uber... antes pelo contrario
72575434300633088	UberYACHT is coming to Dubai this weekend - The most memorable Uber rides are the ones when the driver rolls do... https://t.co/JOenqX2aiF
72575315002881229	Realmente a disputa TÁXI x UBER é uma questão fraturante. De um lado os táxis do outro o capitalismo desregulado. N há resposta certa.
72577130571118592	A minha avó perguntou-me o que é a UBER. É igual aos táxis mas melhor e mais barato, respondi. Ai é? Tenho que experimentar, respondeu-me.
72577635071654707	RT @trainmaniac: Amanhã em solidariedade com os taxistas, vou apanhar um Uber para casa. São 800 metros, mas o que conta é a intenção.
72578568741758976	RT @oamigodegodel: Alguém que diga aos taxistas que um motorista da Uber ganha mais do que eles. Em vez de protestarem, mudem de empresa.
72578776532191232	O Estado Português inventou uns balcões para concorrerem comigo e que pagam 0 de impostos e os taxistas ainda se queixam da uber
72578837134012006	Só para lembrar que da última vez foi assim: Taxistas contra taxistas em Lisboa e a Uber a sorrir https://t.co/040exjYtvi
72579211529754214	Espera aí que a Uber afinal não concorre com os taxis, mas com a MyTaxi. Agora sim, temos game of thraxis..
72579941957725798	"Uber é mais barato" - ainda vai ser mais quando não tiverem de pagar a uma pessoa para vos levar aos sítios
72579952680464384	"Uber é mais barato" - ainda vai ser mais quando não tiverem de pagar a uma pessoa para vos levar aos sítios #queroescolher
72580308022321971	Taxistas em marcha lenta contra a Uber faz tanto sentido como os CTT deixarem de distribuir cartas para protestarem contra o e-mail!
72580638280558182	@d14196 @rsantos50 @trainmaniac eles puseram-se a jeito, tão simples quanto isso... Se a entrada da Uber podia ter sido diferente? Talvez
72579267651636838	RT @AldaTelles: Espera aí que a Uber afinal não concorre com os taxis, mas com a MyTaxi. Agora sim, temos game of thraxis..

72579910580557414	Daqui a uns anos quero ver os protestos de taxistas e condutores Uber quando forem todos substituídos por veículos autónomos #queroescolher
72580467800978636	@d14196 @trainmaniac optam fazê-lo pela uber, que meramente liga as empresas a outras pessoas, pq a base de clientes é muito maior assim
72580589460119552	@dhorta8 @d14196 @trainmaniac isso já é cena estranha :D na uber pagas preços diferentes pelo mesmo caminho se demoraes mais ou menos
72580359459584819	Quantos milhões vale a promoção que os taxistas têm feito à Uber, com zelo e persistência dos melhores... https://t.co/cobTsdRv8T
72580663966055628	@d14196 @dhorta8 @trainmaniac a uber tb pode ajudar: se existe um serviço concorrente mais barato... os taxis terão tb de baixar um dia
72580504813191577	A Google se tivesse nascido na Europa provavelmente teria sido ilegal. Vocês gostam mais de pesquisar na Google ou da lei? #Uber
72580640548420813	@d14196 @dhorta8 @trainmaniac tens de ter licença de motorista tb. mas sim, percebo mais ou menos.. mas isso n é culpa da uber tb
72552248373089075	RT @LOHANTHONY: my uber driver right now is so foreign and cute nřjdgdgfmkgkfj he just looked back at me, saw my dog, and asked "what race...
72553616955595571	(Vídeo) Esperados quatro mil táxis em protesto contra a Uber na sexta-feira em Lisboa: Os taxistas cumprem na... https://t.co/BwUMeK11K4
72553617151048499	(Vídeo) Esperados quatro mil táxis em protesto contra a Uber na sexta-feira em Lisboa: Os taxistas cumprem na... https://t.co/XvfYMiM4fA
72559964509585817	@NunoCardoso Outro dos seus equívocos é que a actividade da Uber é ilegal. Não é. Tantos não é que as autoridades não a impedem.
7,25603E+16	@NunoCardoso ex: o recibo que recibes de uma viagem vem em nome da empresa que presta o serviço, não da Uber
72560581383488716	@NunoCardoso resumindo, a actividade da Uber PT é legal, desde o primeiro dia, independentemente de gostar ou não da empresa @joamiranda
72560905041156915	Top story: Esperados quatro mil táxis em protesto contra a Uber na sexta-feira ... https://t.co/uTbjTVr71 see more https://t.co/50KVWeKKey
72558668522497638	Acho muito bem que os taxistas lutem para manter o que têm exactamente como o têm Mas infelizmente vão perder Os utentes querem a Uber
72558903077207244	Transportado pela Uber Até agora só tenho a fazer elogios Pode ser sol de pouca dura (não acredito que o seja) Mas é uma pedrada no charco
72562791656707686	RT @adrijobecq: Caros taxistas, Em vez de se manifestarem contra os Uber, baixem os preços, parem de dar voltas e sejam mais competentes.
72563327169922252	Só abona a fvr da inteligência.E de que está tranquilo c a rua. #bem - Ministro:"é difícil dizer q a Uber vai parar" https://t.co/oT2TtNH37x
72563921818210304	@refe56 @observadorpt "Imagine que amanhã o Estado diz que a Uber vai ser obrigada a distribuir 20% dos serviços para táxis tradicionais"
72563926907579187	"Imagine que amanhã o Estado diz que a Uber vai ser obrigada a distribuir 20% dos serviços para táxis tradicionais" https://t.co/i8dUS8pDp4
72562034071455334	Então os taxistas dizem que se a Uber for obrigada a reencaminhar 20% do serviço para taxis, já se dão todos bem. Não é ilegal nem nada...
72562188907121049	"Sexta-feira será um excelente dia para experimentar andar de Uber, uma vez que os táxis vão estar ocupados a não... https://t.co/ia2orXdfxi
72570659405131366	Os tipos da Uber parecem ser muito modernos. Mas quando eles dominarem o mercado, vão fazer marchas lentas contra os carros sem condutor.
72567245758831820	Amanha se precisar de um taxi, é melhor chamar um Uber. "Guia para evitar os 6000 táxis que invadem amanhã o País https://t.co/uc33FuXi6b "
72567377471726387	A Uber compara taxis a pastelarias. Se abrissem pastelarias que não cumprissem os requisitos legais a que outras são obrigadas, era justo?
72568309378543616	@pedrojmendes mas a Uber legalizada não existe. só funciona e só dá lucro se for fora da lei. daí esta luta justa dos taxistas.
72568373559363993	os taxistas vão fazer uma manifestação por causa do uber que vai fazer trânsito em todo o lado ja n há paciencia amigas melhorem

72564221174075392	Interessante como no fórum TSF já há taxistas a explicar por que é que a Uber tem crescido por culpa própria. A realidade impõe-se.
72564540895387648	RT @Flor_Beleza: Desculpem lá, mas isto começa a ser constrangedor, a UBER não tem de parar, mas deve pagar impostos. https://t.co/5evBsIq...
72566020704557465	Qual #Uber, #GustavoSantos ou #massafresca ? Para mim o assunto do momento é que acabei de descobrir que o pepino é um fruto. #WTF
72566753616399564	o serviço de Taxis q ã evoluiu nada e de uma maneira geral enganam clientes ã querem a #Uber pra os clientes continuarem ã ter alternativa
72567058044018688	É por esta e por outras que o serviço UBER cada vez se torna mais importante e imprescindível para a mudança de... https://t.co/Qf4qQQBck8
72568134953381888	Claro que o PCP vai participar na manifestação dos taxistas contra o Uber. Estranho seria se se apercebessem de que já estamos no século XXI
72567310649328844	PCP vai participar na manifestação dos taxistas contra a Uber. No entanto o PCP abandonou as lavadeiras, os vendedores de gelo e os de feno!
72569065367028122	@NetMane Se o futuro é Uber vai acabar os alvarás (taxi), licenças, formações e passa tudo a ser "empresas" de turismos e categoria B?
72573434662002278	Numa altura que se fala tanto da Uber e dos Taxis, usem a app 99 taxis, 5 estrelas! Numa Economia concorrencial,... https://t.co/CVPWGkvnY
72573416430203699	RT @Callum_SR: lol an uber driver just tried to drop me off on the hard shoulder of motorway cos his maps said we'd reached the destination...
72574217252443750	Acabei de receber um mail promocional da myTaxi sobre a manifestação contra a Uber que é do melhor que já vi (a sério)!
72558978827173068	As associações de taxistas o q bem podiam fazer era copiar a Uber desde logo na forma de tratar o cliente E já agora no resto Q não é pouco

APPENDIX B: Tweets containing the term “Uber” from April 30th, 2016

ID	Text
72638608106788044	UBER UBER UBER
72640653282133606	#Uber https://t.co/rtrErHtN55
72642751626993664	Portugal: taxistas fazem manifs contra a UBER, a UBER app bate recordes de downloads! Obrigado pela publicidade! #queroescolher #uber
72640461102895104	@sergiocarvalho @joaomiranda os condutores não são da Uber. Usam a Uber como plataforma para angariar clientes.
72635773026558771	Não é a Uber que tem de mudar, são os táxis https://t.co/OhScNfTWI2 #uber
72634033631911936	How Uber conquered London https://t.co/BinXObkNXS via @guardian
72623503298625945	RT @insurgenteBZ: #taxistas vs #Uber https://t.co/RURRWovD8j
72639482897669324	#Handcuffed to @Uber https://t.co/YQ8klSyKoF via @techcrunch
72655533718938419	Uber, sempre a seguir as tendências! #Importmycar https://t.co/dwa1kJT4i2
72647151039170560	Melhor publicidade para a UBER: manifestações dos taxistas!!
72642188284989030	RT @leaodealvalade: Sou pela Uber, claro! https://t.co/c7oAtqaagw
72642561776018227	UBER vs TAXI https://t.co/KCyZKG1uJI via @YouTube
72649551960697241	Lamento. Estes estragam uma classe. Força UBER https://t.co/zLswHVnLKm
72642471531359846	Regulamentação da Uber: Juntando-me ao coro de vozes que vociferam contra a Uber, acusando-a, inclusivamente... https://t.co/O4Dk5QH84B
72633836338128896	RT @AntonioPadez: A UBER devia dar uma prenda à Antral para agradecer a publicidade gratuita. Afinal de contas a app da UBER foi a mais des...
72628757645428736	Ontem levei 1 hora a entrar em Faro por causa do protestos contra a uber. Hoje fico a saber que Não há Uber em Faro...
72628963393236582	RT @nm_netto: Ontem levei 1 hora a entrar em Faro por causa do protestos contra a uber. Hoje fico a saber que Não há Uber em Faro...
72639620590378598	@joaomiranda @jcaetanodias Não não está. Factualmente a Uber é ilegal. Acho que a lei deve ser mudada, mas a Uber, hoje, é ilegal
72640227291000832	Em impostos é mais barato licença taxi + veiculo que o conceito Uber. Por isso impostos é a última justificação anti-Uber. De longe
72635343127590502	A Uber da imprensa explica a Uber dos carros Dito à bruta o chuto nas sinapses bafientas dos velhos ocs é este: o... https://t.co/hhsuElvxas
72632519258322124	Eu desconheço se é o Uber ou a Uber (eles também não devem estar preocupados, porque os norte-americanos não... https://t.co/qNgYrxPupF
72625563345715609	Mesmo que Uber cumpra tudo que taxistas reclamam, o que eles querem é que Uber desapareça para eles continuarem com monopólio @danielolivalx
72620335735498752	RT @AntonioPadez: A UBER devia dar uma prenda à Antral para agradecer a publicidade gratuita. Afinal de contas a app da UBER foi a mais des...
72625047622479872	Mesmo que Uber cumpra tudo que taxistas reclamam, o que eles querem é que Uber desapareça para eles continuarem com monopólio@danielolivalx
72653384584413184	@AntonioReis70 @JNegocios A Uber aproveita vazios legais e não é justo q os táxis paguem alvarás e licenças e os condutores da Uber não.
72645963719365017	RT @trainmaniac: Em impostos é mais barato licença taxi + veiculo que o conceito Uber. Por isso impostos é a última justificação anti-Uber....
72633846407409664	Sete frases dos taxistas que só beneficiam a Uber https://t.co/5aJbvcSq74 via @visao
72634753087586713	Obviamente. Os táxis pararam e a @Uber chegou ao top da app store https://t.co/eaPWWmSg3U
72630478838896230	RT @RafhR: Sobre a polémica táxis vs uber: andem de metro, burgueses do caralho
72636955571146342	Não é a Uber que tem de mudar, são os táxis https://t.co/0GMZ8SFjKD via

	@JNegocios
72638642210675507	Os táxis pararam e a Uber chegou ao top da app store https://t.co/92VYTRL5kv
72638820913190092	Os taxista já perderam claramente a campanha da comunicação com a uber.
72639559844274995	Taxistas contra a Uber é o mesmo que carteiros contra e-mail não é?
72639287569775001	... será que o @danielolivalx já ouviu falar em #sharingeconomy !? #uber #Airbnb
72639981806356480	@sergiocarvalho A Uber? Vamos proibir aplicações? Ou vamos proibir o transporte privado de passageiros? @jcaetanodias
72640075355694694	@sergiocarvalho Por exemplo, nada distingue a Uber deste serviço: https://t.co/qP3NdIrcaj @jcaetanodias
72639736559113011	@jcaetanodias @joamiranda Tomato, tomahto. Os condutores da Uber operam ilegalmente. O resto é contorcionismo legal.
72640937796875468	@G_L O Uber não é uma nem outra. Lá está, há mesmo desinformação. @pedrobxavier
72635220042809753	Depois admiram-se que as pessoas prefiram a Uber.... https://t.co/z0xxTBv2Qi
72635992838703513	[Visão] Sete frases dos taxistas que só beneficiam a Uber https://t.co/oB835zJr8h
72632987053659750	Acho que a Uber devia ponderar seriamente em contratar o Mustafa dos kebabs
72633125683372441	RT @joamiranda: Taxistas querem os carros da Uber identificados. Deve ser para lhes acertar melhor.
72632946308094771	Ou, numa homenagem ao "Life of Brian", "Uber eunt domus" https://t.co/Vje2LuaLTp
72636257916199731	RT @VascoCoimbra: [Visão] Sete frases dos taxistas que só beneficiam a Uber https://t.co/oB835zJr8h
72636447652672307	Alguém aqui sabe se MBNet funciona como meio de pagamento na UBER?
72642113682999296	#Taxistas de #Lisboa, #Porto e #Faro marcham contra a #Uber https://t.co/TY8Ibup9bz
72622084393682944	Quer apanhar um Uber? Agora tem apenas 2 minutos! https://t.co/V4q6TJmcb9
72624479937277952	Quer apanhar um Uber? Agora tem apenas 2 minutos! - Pplware https://t.co/nNwethKJF4
72620622195974963	Sobre a polémica táxis vs uber: andem de metro, burgueses do caralho
72621340218874675	A UBER é ilegal? Ilegal é ROUBAR os utentes dos taxis!!
72622201012530790	RT @RafhR: Sobre a polémica táxis vs uber: andem de metro, burgueses do caralho
72622278857554329	Os táxis pararam e a Uber chegou ao top da app store https://t.co/RI4RXCIXH4
72622370570190438	[pplware] Quer apanhar um Uber? Agora tem apenas 2 minutos! https://t.co/d3f7vh3RCb #tecnologia
72655547739662336	Regular a uber e diminuir o valor dos alvarás, etc. Ta feito. Boa noite.
72650460647013171	Não é a Uber que tem de mudar, são os táxis https://t.co/IR443XysGI via @JNegocios
72650559720251392	Taxistas - Os táxis pararam e a Uber chegou ao top da app store: https://t.co/d2zJW4mknf
72645112567578624	A propósito dos táxis/Uber :) no Delito de Opinião https://t.co/mIGlCNcjXt
72641667326006886	RT @37227: Faro protesta contra a Uber quando nem sequer há o serviço lá. #ohwell
72641928049398579	RT @NFB_voice: We've reached a #historic settlement with @uber regarding #PWD & #ServiceAnimals. https://t.co/gq3fYazCqJ
72642584830849024	@Tiago_R_Ribeiro A Uber não detém nem carros nem condutores (em Portugal). @pedrobxavier
72642545051649638	A minha proposta para regulamentar a Uber https://t.co/oK0CVUglM7 via @oinsurgente
72643533455322726	RT @pedromamede: ... será que o @danielolivalx já ouviu falar em #sharingeconomy !? #uber #Airbnb

72655162313741926	@sirluso @indecisor claro que sim. Acabem com os alvarás milionários e a polémica da Uber acaba.
72655082117388697	RT @NANOJEFE: I am cryinnnnngggggg this Uber driver got it all https://t.co/sUOoEQhRWr
72655096714407526	RT @NANOJEFE: I am cryinnnnngggggg this Uber driver got it all https://t.co/sUOoEQhRWr
72655063510196633	RT @NANOJEFE: I am cryinnnnngggggg this Uber driver got it all https://t.co/sUOoEQhRWr
72652575505266688	@joamiranda um motorista da Uber pode ser de outro clube sem ser do benfica?
72653011066544537	Gostei de um vídeo do @YouTube de @parafernha https://t.co/e9HNM3L7Ms UBER vs TAXI
72650087590938214	RT @HarryShumJr: My uber driver's name is Aladdin and this makes me happy. #AWholeNewWorld #HeAskedMe #DoYouTrustMe
72633839426825011	RT @dntwit: Os táxis pararam e a Uber chegou ao top da app store https://t.co/ETx4eUuTgG
72635001031349862	4000 táxis em Lisboa. A Uber com a partilha de trajectos faz o mesmo trabalho com 400 carros.
72623631107875225	RT @joamiranda: Ministro ameaçou a Uber com a "legalização". É o pior que pode acontecer a uma empresa em Portugal.
72630164829810278	RT @LucianoAlvarez: App da Uber na loja da Appel em Portugal voltou a ser a mais descarregada do dia. Siga...
72628621971020595	Aquilo dos taxistas teve tanto impacto que até se me alterou o ícone da app da Uber no telefone
72636554838528409	RT @mruiandre: Não é um criminoso, é apenas um motorista Uber vítima de selvagens https://t.co/c036pat8Zi https://t.co/RHV7YzrYsA
72637557958340608	Reacção de todas as redes sociais à manifestação de ontem: 0% a favor dos #Taxistas, 100% a favor da #Uber.
72638735805309337	RT @raminhoseffect: Ironia do caracas... Hoje graças à greve dos taxistas a Uber vai ter trabalho como o catano.
72639880475749990	RT @pmpisco: Os táxis pararam e a Uber chegou ao top da app store https://t.co/92VYTRL5kv
72639695558109593	@sergiocarvalho @joamiranda a Uber é uma evolução de um telefone é uma plataforma de pagamentos. Ilegal em quê?
72640001366076621	@sergiocarvalho Os condutores da Uber pertencem ao sector de transporte privado d passageiros, regulado há anos. @jcaetanodias
72640165381813862	@danielolivalx Uber é aluguer ao minuto, com motorista (legal) A inovação está no "minuto" @pedrobxavier @alvaromferro @pedromamede
72640674129498112	@joamiranda @danielolivalx @pedrobxavier @alvaromferro @pedromamede sem esquecer que Uber paga IA e IVA do carro a 100%, e os taxistas?
72640485467189248	@jcaetanodias @joamiranda No modelo usado em Portugal pela Uber para contornar a lei. Não é esse o modelo deles.
72635363436834406	RT @TiagoDF: Obviamente. Os táxis pararam e a @Uber chegou ao top da app store https://t.co/eaPWWmSg3U
72635560641264025	BE: a Uber não é ilegal, mas sim o exercício da atividade https://t.co/Lsrq9zRbz4 https://t.co/yLzrVzGvam
72635943357659136	@cgonzaga77 @TSF os taxistas são tão inteligentes, que para eles todos os carros pretos topo de gama são Uber
72630816565928755	RT @GizmodoBR: Prefeitura de SP quer regulamentar Uber, mas votação pode ser adiada https://t.co/GcbERpSGQ4 https://t.co/pi8RJfK5I
72634947669318041	RT @TiagoDF: Obviamente. Os táxis pararam e a @Uber chegou ao top da app store https://t.co/eaPWWmSg3U
72632575891071795	RT @IDGNow: Uber começa a operar em Fortaleza e expande atuação no Nordeste https://t.co/D9HpzqAGxV https://t.co/OYdu7TUGJr
72632593885471539	RT @IDGNow: Rival do Uber, espanhola Cabify chega ao Brasil aberta aos táxis

	https://t.co/SC6cJBd7oM https://t.co/J03FYGEqo9
72633123744348569	RT @LucianoAlvarez: App da Uber na loja da Appel em Portugal voltou a ser a mais descarregada do dia. Siga...
72636264638409113	Igualdade #Taxistas #Uber: passar factura, respeitar Código Estrada, boa educação, ter avaliação, não ser criminoso violento, pagar ISV +IUC
72637778785927987	RT @pobreprovincian: Como diz o Galamba, vão ler e aprendam alguma coisa!UBER é subdesenvolvimento" https://t.co/aLXgHf869F "
72624951739431731	São todos países subdesenvolvidos de terceiro mundo. @danielolivalx Os taxistas são contra Uber, ponto. Eles não querem concorrência.
72620215180716032	RT @LucianoAlvarez: App da Uber na loja da Appel em Portugal voltou a ser a mais descarregada do dia. Siga...
72620376869874892	RT @dntwit: Os táxis pararam e a Uber chegou ao top da app store https://t.co/ETx4eUuTgG
72620396582680576	RT @dntwit: Os táxis pararam e a Uber chegou ao top da app store https://t.co/ETx4eUuTgG
72620695972105830	RT @dntwit: Os táxis pararam e a Uber chegou ao top da app store https://t.co/ETx4eUuTgG
72649363963607859	@joaomiranda há uns anos o @danielolivalx , através dos blogues, foi o uber de alguns cronistas da imprensa escrita :)
72647944891313766	RT @boloposte: Um taxista, um colaborador da Uber e um condutor de tuk-tuk entram num bar...
72647955304094515	@danielolivalx @carlosgpinto @luismelo78 @tbribeiro boa notícia são backgorund checks para se ser motorista Uber, como não ter multas álcool
72645608494535475	Bloco de Esquerda manifesta "apoio político" aos taxistas em protesto contra a Uber Jornal de Negócios -... https://t.co/WRFfkhHNSN
72647917974365798	@danielolivalx Que deveres é que os transportadores da Uber deviam ter e não têm? @rpOliveira @luismelo78 @tbribeiro
72648102659219865	@danielolivalx Qual o problema da Uber receber percentagem? Que é q tem a ver com deveres? @carlosgpinto @rpOliveira @luismelo78 @tbribeiro
72641820564069171	@mlopes Desculpem a ignorância, mas afinal o que é a Uber? Uma aplicação gratuita, é isso? @pedrobxavier
72642052243158220	«O microondas é, como todas as novas formas de economia informal que contornam a regulação, um recuo civilizacional» #Uber
72641859047226163	Tema da moda: Uber vs. Taxi ► 329 #1perday 🎵"Ah, tudo é diferente"🎵 https://t.co/dMozewsALV #music #lyrics #TaxisVsUber
72641998197871001	«As lamparinas são, como todas as novas formas de economia informal que contornam a regulação, um recuo civilizacional» #Uber
72642003248234496	«O automóvel é, como todas as novas formas de economia informal que contornam a regulação, um recuo civilizacional» #Uber
72642008915581747	«A luz eléctrica é, como todas as novas formas de economia informal que contornam a regulação, um recuo civilizacional» #Uber
72643881576251801	Uber drivers reveal 5 ways to get a better pass... https://t.co/6HDUTwx9YB #innovation https://t.co/wai6kgwd18 https://t.co/kpwAH2cDVa
72655239278798438	@sirluso Vai-se a ver e as formações dos motoristas uber até são melhores e mais exigentes. @Peliteiro
72655670299317452	Dia das Mães https://t.co/CfPD5C5Fjg no mesmo dia do trabalhador https://t.co/LFLa3R8rKk ?? Táxis contra Uber foram uma brincadeira...
72655805795053158	Nem Uber, nem táxis: trenó do Pai Natal - grátis e com direito a prenda - para todos, já! https://t.co/Io1vDpvEGP
72655104498194841	Depois de marcha lenta dos taxistas contra a Uber, bibliotecárias organizam uma contra o Google – Inimigo Público https://t.co/pYgNBmVxS9
72650221594324582	Uber agrees to \$22 000 settlement in lawsuit al... https://t.co/WogxyCKSOV #curiosity https://t.co/wai6kgwd18 https://t.co/wcEJkmttwg
72653796781318963	@FredericoLopes licenças que permitem isenção de IA entre outras coisas. taxi é

	mais barato de operar que Uber
72634286045963059	RT @Jgdm1965: Houve menos manifs dos táxis contra a uber do que expulsões do Conceicao,mas nunca faz nem diz nada.E do anti-jogo da 1a part...
72634703731530956	RT @JoseDePina: Se os tipos da Uber começarem a pagar impostos e taxas como os taxistas, dou-lhes um ano até o carro deles começar a cheira...
72623686818299084	RT @lfpedrosa: Se eu fosse a Uber patrocinava as camisolas do Benfica, só para ver o cérebro dos taxistas a fazer tilt...
7,26296E+16	RT @inimigo: Depois de marcha lenta dos taxistas contra a Uber, bibliotecárias organizam marcha lenta contra o Google https://t.co/wkfri68G...
72637070165819801	RT @AC_AntonioCosta: 'Medina e Moreira ao lado dos taxistas contra a Uber'. O mercado dos votos a funcionar. https://t.co/NCHkAKQ8bP via @J...
72638806558599577	RT @inimigo: Depois de marcha lenta dos taxistas contra a Uber, bibliotecárias organizam marcha lenta contra o Google https://t.co/wkfri68G...
72639071585764147	RT @AC_AntonioCosta: 'Medina e Moreira ao lado dos taxistas contra a Uber'. O mercado dos votos a funcionar. https://t.co/NCHkAKQ8bP via @J...
72638441943984128	RT @pobreprovincian: Taxi v Uber <input type="checkbox"/> eMail v correio <input type="checkbox"/> Telefone v Telemóvel <input type="checkbox"/> TV RF v ipTv (inc DVBT) <input type="checkbox"/> ICE v Ion (Tesla) <input type="checkbox"/> Mercearia v Hipe...
72638706949332582	E as pessoas respoderam assim à Manifestação dos taxistas: Os táxis pararam e a Uber chegou ao top da app store https://t.co/rcicBMcza5
72639438153673113	Avanço com um novo negócio: - Moto Uber! Disponível em Lisboa para executivos e gente com pressa. Não entrego... https://t.co/cdW4AdvPT9
72639457061596774	@jcaetanodias É um problema complexo. Não podes pedir 600€ aos taxistas para a carteira profissional e deixar a Uber competir sem esse custo
72640413700549017	Qual taxi, qual Uber? Vou pedir o nº do Manuel das Couves à Joana Amaral Dias e mandar vir carripa. Tempo bom pra dar volta d cabrio mazé.
72640081427369164	RT @Jgdm1965: Houve menos manifs dos táxis contra a uber do que expulsões do Conceicao,mas nunca faz nem diz nada.E do anti-jogo da 1a part...
72639876135062732	eu não percebo como é que não despedem todos os taxistas que atacam e vandalizam condutores e carros da uber???????? eu não quero apanhar
72640065977228493	@sergiocarvalho Não há nenhuma regra a ser violada. Uber faz o mesmo que um transfer que leva as pessoas do ponto A ao B @jcaetanodias
72640545976317132	@sergiocarvalho @joaomiranda posso chamar um condutor para me levar de "a" para "b", por telefone. Não posso pela App da Uber. É isso?
72640704005944934	a cena da greve por causa do uber têm a ver com as licenças, anda tudo a falar como se os taxistas fossem malucos
72640362375690240	RT @pedrobxavier: Mais um dado: vocês sabem que já existem há anos apps iguais à Uber para cotporate. Mas aí tudo bem. Pq os doutores merec...
72640556628594278	RT @AC_AntonioCosta: 'Medina e Moreira ao lado dos taxistas contra a Uber'. O mercado dos votos a funcionar. https://t.co/NCHkAKQ8bP via @J...
72640792318693376	Pessoa que compreende argumentos dos taxistas e também percebe que a Uber veio para ficar foi considerada inapta para usar redes sociais.
7,26356E+16	RT @iamalexbing: A discussão da Uber x Táxi devia alargar o debate para: "Como se arranja dinheiro para andar nesse transportes, mesmo?"
72631808791877222	A Uber está ilegal. Concorro. Mas o sector dos taxistas está cheio de injustiças. O jogo das licenças é muito mau. Modernizem-se fogareiros!
72633486113759232	RT @TeKSapo: #TeKSAPO 72% dos portugueses em Lisboa e Porto querem serviços como a Uber em Portugal: Os taxistas estão est... https://t.co/...
72633488022163865	parece que - ao contrário do que os taxistas meteram a circular - os condutores da Uber têm seguros para... https://t.co/W67pdK0rpy
72633944087292723	quem disse que a Uber e os seus motoristas não pagavam impostos?(os taxistas)(que se pagava menos que o serviço... https://t.co/eAa3VYI3Ry
72632328484173824	RT @JoseDePina: Se os tipos da Uber começarem a pagar impostos e taxas como os taxistas, dou-lhes um ano até o carro deles começar a cheira...
72635038950780928	Anti-Uber protests held in three cities Hundreds of taxis turned out in Lisbon, Porto

	and Faro to protest... https://t.co/ZpfLrmLrNZ
72637765526060236	RT @Wonderm00n: O único carro Uber sujo é aquele que levou com ovos dos taxistas. Essa classe não consegue ver um carro limpo, mesmo que se...
72637768071580876	RT @AC_AntonioCosta: 'Medina e Moreira ao lado dos taxistas contra a Uber'. O mercado dos votos a funcionar. https://t.co/NCHkAKQ8bP via @J...
72619969194427187	RT @omalestafeito: isto da Uber, para os taxistas, é como se agora saísse a notícia que aquelas capas de bolas das cadeiras fodem as costas...
72624900178854297	Uber está em 71 países incluindo França, Reino Unido e praticamente toda a Europa, EUA, Canadá, Rússia Austrália e segundo o @danielolivalx
72655190452064256	@sirluso @indecisor não. Os motoristas da Uber E os taxistas deviam ter um curso. Um curso a sério e não uma brincadeira.
72655157630381670	@indecisor @Peliteiro Os motoristas da uber deviam ter q ter o mesmo curso q os taxistas têm e estava o prob resolvido :)
72653647458224128	RT @rpOliveira: Todas as apps de táxi mal esgalhadas dão um serviço igual à Uber? Enfim, ou é ignorância ou má fé. https://t.co/FYOGv6IsD9
72648603653732761	Para a malta que critica a Uber por ser ilegal. Já houve muita coisa que foi ilegal e que, felizmente, passou a legal. Um não argumento.
72647590333372825	RT @AC_AntonioCosta: 'Medina e Moreira ao lado dos taxistas contra a Uber'. O mercado dos votos a funcionar. https://t.co/NCHkAKQ8bP via @J...
72647832856418713	@danielolivalx @luismelo78 @tbribeiro motorista e carro, a única coisa que muda. A Uber mudou o serviço e como é prestado, aí é concorrência
72647791582788813	@danielolivalx @luismelo78 @tbribeiro isso parece-me desatenção. Mas sim,a banca está clara/ a pedir uma Uber, que há-de estar quase.
72644122664438169	@PPampolim A Uber vai funcionar já que são uma plataforma para ligar o serviço aos clientes. Os taxistas e condutores tem os dias contados
7,26438E+16	Não digam nada ao Daniel Oliveira: Mas conheço uma pessoa que vai chamar a Uber para ir às promoções do 1º de... https://t.co/eJR7gIIPz9
72647061581376716	Portanto já se percebeu a utilidade daquela "formação" que um condutor de táxi tem a mais que um de Uber. https://t.co/OPc6c65mG8
72644436898336768	Joana é a favor de pôr os Manel das Couves (trabalhadores honestos) na prisão e culpa a Uber e os Liberais por... https://t.co/DAorlatLbo
72644776453251891	RT @CN_: Joana é a favor de pôr os Manel das Couves (trabalhadores honestos) na prisão e culpa a Uber e os Liberais por... https://t.co/DAo...
72645327436321587	RT @AC_AntonioCosta: 'Medina e Moreira ao lado dos taxistas contra a Uber'. O mercado dos votos a funcionar. https://t.co/NCHkAKQ8bP via @J...
72641279594902732	@G_L Pois, mas a Uber é só a app. Os condutores são funcionários de empresas de transporte de passageiros licenciadas. @pedrobxavier
72641243577993216	@mlopes Quando eu me refiro a Uber, só penso no serviço em Portugal e nas pessoas que o prestam. Nem penso na app. @pedrobxavier
72641494402405580	Taxistas e Uber. Quem tem razão? A concorrência, como a democracia, é sempre benéfica para o cidadão. Dá-lhe oportunidade de escolha.
72641790368014745	"A UBER é, como todas as novas formas de economia informal que contornam a regulação, um recuo civilizacional..." alguém escreveu mesmo isto.
72641856761749914	@mlopes Se é so app, porque que é a UBER cobra uma percentagem (alguém sabe quanto?) pelo serviço de transporte? @G_L @pedrobxavier
72641969421170688	@karlus Maravilhoso. Já lhe expliquei como funciona o Uber, mas ele não quer mesmo saber. As ideias já vêm formadas, o resto é circo.
72642558596313088	@Tiago_R_Ribeiro Porque a MEO é dona dos cabos que vão até sua casa edas boxes. A Uber não tem nem carros nem motoristas. @pedrobxavier
72655109333805875	RT @joaomiranda: @danielolivalx Não sabe que os carros da Uber são de empresas licenciadas para o transporte de passageiros? Já lhe devem t...
72654131827774259	RT @indecisor: Pá, se o problema é motoristas Uber n terem alvará, é fazer um simplex para q passem a ser dados a quem quiser, a custo zero...
72653158138136166	RT @danielolivalx: Para quem julga que a questão do Uber tem a ver com as novas

	tecnologias, proponho que façam uma busca de apps... https://t.co/FYOgv6IsD9
72653556809247948	Todas as apps de táxi mal esgalhadas dão um serviço igual à Uber? Enfim, ou é ignorância ou má fé. https://t.co/FYOgv6IsD9
72653425556892877	@AntonioReis70 @JNegocios A frase q escrevi há pouco diz tudo.Não sou contra a Uber,mas esta tem de estar legalizada e não está.
72653442655811993	@danielolivalx Não sabe que os carros da Uber são de empresas licenciadas para o transporte de passageiros? Já lhe devem ter dito.
72653126893925580	@mruiandre @CrisVieirinha Não é isso.Os condutores da Uber estão a prestar l serviço d táxi e tem d ter as mesmas habilitações.E não as tem
72652480380969370	Uber resolveu isso com a) cartão crédito b) contabilização da distância e tempo por GPS c) avaliação dos motoristas e registro de reputação
72649800852374323	RT @AC_AntonioCosta: Grupo de trabalho da mobilidade sem Uber prova que servirá apenas para proteger taxistas. Porto e Lisboa apoiam este g...
72639711721699328	E desta vez ia de novo chegar em cima da hora e apanhei um taxi para prevenir e o taxista "Uber? Não sei, só quero dinheiro para os copos".