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Collaborative technology and motivations: utilization, value and gamification

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Abstract

Purpose – Instigated by the trend of collaborative economics, taking into consideration the particularities pointed out by Simis (2015), such as a new social, economic and technological scenario, this paper aims to identify which factors serve as motivators for collaboration among the technologies of this scenario.

Design/methodology/approach – In this paper, the authors analyzed Waze, an application that works based on traffic information made available by the users of the platform. For the development of this qualitative work, aspects that served as the basis for the interview script applied were classified into three different categories: utilization, personal values and gamification; the latter being an important aspect for collaboration in the application in question. Two distinct groups were interviewed; one of regular users of Waze, and the other of advanced users, who also work voluntarily in the maintenance of the app.

Findings – The results indicate that personal values are determinant factors for both groups; however, there are distinct incentives for the different users interviewed, like reciprocity, altruism and empathy. The first one is an important aspect to share information by the regular users, while the other ones are characteristics advanced users.

Research limitations/implications – The study presents some limitations in terms of the restricted group and focus on only one of the many collaborative technological social, as well as lacking on-site analysis of the use of Waze.

Practical implications – This is a valid research when taking into consideration studies that approach the app Waze, as the issues explored in this paper are new in the academic studies considering previous app's analyses that are related to functionality.

Social implications – The results presented in this study help to understand the current relationship between sharing economy and the technology provided to those who use these platforms.

Originality/value – This research opens the horizon for future studies applied on other collaborative technological user platforms, to see if the results would be similar and construct a user journey in relation to information sharing through experimental monitoring.

Keywords Gamification, Collaboration in networks, Collaborative technology, Motivating factors for collaboration, Use of technology

Paper type Research paper

1. Introduction

We are currently living in a collaborative economy, product of a scenario developed through personal and commercial relationships among economic agents, in *peer-to-peer*

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arrangements, which consists of three components: social, economic and technologic aspects (Simis, 2015). According to the same author, the social factor is a result of elevated population indices in metropolitan areas, bringing about a greater need for a sense of community. In turn, the economic factor comes from consumer tendencies in terms of flexibility as opposed to ownership, making improperly used resources more useful (Ferenstein, 2014). The technological factor is characterized by the increase of social media, taking into consideration the availability and easy access of mobile platforms, as well as new payment systems (Belk, 2013).

Rifkin (2015) confirms that the current economic model is intensifying income inequalities as well as constantly damaging the natural conditions of the planet; however, by contrast, major world powers are already organizing new productive arrangements, while considering the most recent technologies, and, as a result, giving new paradigms to social interactivity. Botsman (2016) adds that this breakdown in the traditional capitalist rationale, through specific collaborative economic platforms, creates a revolution in terms of trusting one another, minimizing the participation of traditional organizations in this process.

The power diffusion of digital marketing, which focuses on traditional marketing, accelerates these tendencies based on recent radical alterations in society, improving personal relationships and creating new consumer profiles, such as subcultures of youth, women and people of the internet, according to Kotler, Kartajaya, and Setiawan (2017). Prahalad and Ramaswamy (2004) pointed out that, through collective action, companies and their associates can seize opportunities using adequate prices and providing new experiences, with the possibility of a win-win scenario.

From this perspective, the collective economy gains prominence in the market, which is constantly expanding due to advances in technology. Globally, it is estimated that by 2025, US$335bn will be generated in terms of revenue (Mendonça, 2017). In respect to this expansion, Ferenstein (2014) highlights that, concerning the history of industrial technology, the companies inserted in this scenario reached levels never seen before.

Based on that, while considering the present scenario and the relevance of the themes involved, this study aims at identifying suitable requests in terms of current market positions, as well as new social relationships resulting from a collaborative economy. For this purpose, we questioned which of the factors motivated the technological users to collaborate, with different levels of network involvement, and consequently to adopt a voluntary posture toward sharing. To facilitate the study, *Waze*, a traffic-monitoring app that combines information shared by the users, was used as the basis of our study.

Regarding the motivational theme, specifically the central concepts, diverse materials related to these perspectives can be found about work places, aside from psychological applications in different scenarios (Bergamini, 1990; Franco, 2008; Maruping & Magni, 2015; Maslow, 2003; Spector, 2006). There is a large amount of material on technology use; most studies focus on managerial use in organizations (Albertin & Albertin, 2012; Domingues, Palmisano, Rosini, & Silva, 2015; Lunardi, Dolci, & Maçada, 2010; Oliveira, Maçada, & Oliveira, 2015), but none of them analyzes the consumer or his/her behavior when making use of collaborative technology.

What is now being proposed is to gather more detailed information and research in terms of collaborative technology as well as the environment and existing platforms, as current research and reports generally address experiences, individual predisposition when using the organizational platforms and future growth perspectives for posterity in this market (Belk, 2013; David, Chalon, & Yin, 2016; Dias, 2000; Ferenstein, 2014; Thierer, Koopman, Hobson, & Kuiper, 2015).

Section 2, which comes next, explains the central concepts of this paper. Later, Section 3 discusses the specific procedures adopted in the methodology of this research while providing a contextualization on the app *Waze*. Section 4 brings the analysis of the results of this research, and, finally, in Section 5, we present the final considerations of this paper.

2. Motivation for using collaborative technology

2.1 Motivation

Motivation is a difficult word to define, being the subject of various studies (Spector, 2006). According to the author, it refers to an inner state resulting in desires, necessities and/or individual urges interfering in the direction, intensity and personal determination when envisioning the intentions of reaching a goal.

In the organizational scope, motivation was first studied while looking at experiences that occurred during the emergence of the school of human relations period, in an attempt to maximize the productive gains of workers, emphasizing workplace necessities (Motta and Vasconcelos, 2006). From another perspective, Kotler and Keller (2006) considered the term, motivation, with an emphasis on marketing strategies, based on the belief that necessities, whether physiological or psychological, come from motives strong enough to bring about individual action.

Regardless of the perspectives or interpretations on the theme of motivation, the adoption of technology use presumes the factors that evoke the individual or organization to do so.

2.2 The use of technology

In the first decade of the twenty-first century, discontinuities in the traditional relationship between companies and their clients, and consequently in consumption and status quo, were noticed as the result of the spread of new technologies (Prahalad & Ramaswamy, 2004). Along these lines, Vajjhala (2015) took into consideration that recent technological advances, especially regarding the internet, gave way to a new era of opportunities and collaborations through tools that enabled users to share information and work together.

Currently, specific informative and technological platforms are necessary for some of the relationships among agents, and, in such scenarios, for organizations as well. In the recent social movements, emphasized through new behavioral profiles, the usage serves as a propulsion to create new relationships between organizations and their clients (Kotler *et al.*, 2017).

In the corporate world, information technology meets the necessities and opportunities that may arise by facilitating the complexities of managing; information technology is, therefore, an important tool to accomplish tasks and to meet the purposes of the organizations (Domingues *et al.*, 2015).

Lunardi *et al.* (2010) took into consideration that information technology implementations can bring about high costs for the organizations, those of which can be misplaced investments when pressured by the competition, aside from the lack of adequate planning and measuring organizational impacts. For Albertin and Albertin (2012), the opportunities that information technology can offer the company depends on internal adaptations, resulting from the understanding of the relationship and the use of technology in business.

In any case, aside from the necessary adaptations, the company can benefit from adopting such technologies, for example, improvements in production, procedure automation and even a competitive advantage by supplying decision-making information (Moura, Lima, Pinto, & Rocha, 2017). With this in mind, using technological tools in organizations is as useful as relationship channels with clients and, along these lines, promotes the emergence of collaborative technological platforms.

2.3 Collaborative technology

Collaborative technology creates conditions in which different stakeholders can execute their activities in an adequate manner, simultaneously or sequentially, in terms of distribution, subcontracting, co-contracting or third parties (David *et al.*, 2016). At this point, interaction, communication and sharing among agents are essential, which become stronger through technological evolution, creating new forms of collaboration or facilitating the development of old habits, especially with the invention of the internet and the Web 2.0 (Belk, 2013).

This scenario fosters a collective construction, normally referred to as crowdsourcing. Such a concept can be seen currently as "a history of cooperation, aggregation, teamwork, consensus and creativity" (Brabham, 2013, p. 26). The author describes this relationship as an *online* participation of different types of complexities, quality and the satisfaction and fulfillment of needs, on behalf of the enterprise.

Concerning behavioral issues, there are different methods, which aim at the largest user engagement through technology. Especially with Waze, interaction could go toward a lucid appeal through gamification technologies.

2.4 Gamification

The term gamification is defined as "using game-based mechanics, aesthetic and game thinking to engage people, motivate action, promote learning, and solve problems" (Kapp, 2012, p. 10). Regarding this definition, Fardo (2013) classifies the games as a system with interconnected elements that put real-life problems into imaginative environments that, according to Kapp (2012), follow the premise of abstract challenges, with defined rules and *feedback*, providing quantifiable results and emotional reactions.

In this context, motivation is an important element when dealing with participant involvement in the games, and it is classified as being extrinsic or intrinsic, according to Cativelli, Monsani, and Juliani (2016). In their opinion, when motivation is related to games, it could be understood as extrinsic because it takes into account the reward offered to players; intrinsic motivation deals with the factors that develop player engagement and can be understood as personal values held by each player.

Gamification is appealing, has diverse purposes and has been used in many different contexts, for example, in libraries (Cativelli *et al.*, 2016), training and developing environments for organizations (Di Bartolomeo, Stahl, & Elias, 2015), learning tools (Fardo, 2013), tourism (Nunes & Mayer, 2014) and promoting entrepreneurship (Pinto, 2016).

In relation to Waze, gamification is a strong tool for creating dynamic user experiences. Aside from gaming characteristics, other factors can possibly serve as collaborative motivation in the app, as discussed in the following section.

2.5 Possible collaboration motivators for Waze

There are diverse potential factors that can serve as collaborative motivation for Waze users. Table I shows the main concepts identified.

According to the specifications above, it was possible to create an interview script according to the following method.

3. Methodology

With the intention of adding to the knowledge base, this research can be classified as pure according to the criteria by Zanella (2009), as it is created through contributions, understandings and explanations of a determined phenomenon.

Possible motivation factors	Source
Utility	Dias (2000)
User friendliness	
Enjoyment	
Ownership counterpoint	Simis (2015)
Altruism	
Empathy	
Unique and out-of-the-ordinary environment	Almeida (2015)
Compatibility	Nunes and Mayer (2014)
Perceived enjoyment	
User intent	
Work that does not feel like work	Di Bartolomeo *et al.* (2015)
Insertion into network gaming structures	
Alternative environment that provides security	
Lucid interaction	Cativelli *et al.* (2016)
Entertainment	
Socialization	
Stress relief	
Social engagement	Kim, Glassman and Williams (2015)

Source: Elaborated by the authors

Table I.
Main collaborative motivation factors

Therefore, the object of this study can be described as explicative, as the main concern is to identify the factors that determine or contribute to the occurrence of the phenomenon (Gil, 2002).

Approaching the research from a qualitative standpoint, according to Zanella (2009), without using statistical elements, data were collected by surveying a specific group by convenience, through specific platform classifications used as a base herein according to the proposed goals. As a way of making the research easier to understand, the following section provides a description of the Waze platform.

3.1 Characterization of the app Waze

As previously mentioned, this study uses Waze as a basis. This platform uses GPS navigation provided by satellites, where the users share information involuntarily – such as the transmission of active user driving speeds – with the possibility of voluntary collaboration, through information shared on the app itself (Silveira, Marcolin, & Freitas, 2015). In conjunction with other social networks, the app permits users to follow the preferred routes of other users and interact with them. To instigate participation, the app uses gamification tools through a point and ranking system related to individual interactions, anticipating five different *Wazers*, as presented in Figure 1.

Aside from the pointing system, Waze also has a system for advanced users, who are volunteers that provide the appropriate maintenance and enhancement for a better functionality through map editing and reports on how Waze's operation is going on. This way, the platform is providing a deeper and more personal experience through new platform dynamics.

Regarding some of the platform peculiarities, this study aims to question and analyze user collaborations through information sharing relationships created in Waze, specifically through collaborative technology. That being said, the following section presents the participating users.

 **Waze Baby**	Welcome to the world, Wazer! You are a baby now, but not for long... Drive 100 miles to become a Grown-Up.
 **Waze Grown-Up**	You've matured and can now pick a new Waze mood. To become a Waze Warrior you'll need to seriously ramp up on points…
 **Waze Warrior**	Behold the shield! You've reached the top 10% of high scorers in your region. Maintaining it won´t be easy…
 **Waze Knight**	The sword is yours! You've reched the top 4% of high scorers in your region. You're almost Royalty… Keep on looking for points opportunities.
 **Waze Royalty**	You've arrived! You're in the top 1% of high scorers in your region. Drive around knowing you're as VIP as they come…

Source: Adapted from Waze (2014)

Figure 1.
Waze user levels

3.2 Respondent profiles

This study encompasses 20 Waze users: 10 who only shared information on the platform and 10 editors who besides using the app on a daily basis helped to maintain app functions. To obtain this information, an online form was made available to the users (convenience sampling) during a two-week period (available in the Appendix). With this information, it was possible to form groups of distinct user types, as shown in Table II.

This sample enables certain considerations for specific *Waze* user classifications and user profiles. Regarding the differences in the levels of platform involvement, from the 11 *Waze Royalty* level users, 10 are also editors, which explains their advanced level. There is a larger variability in the regular users group, although there are no *Waze Baby* users, which leads one to believe that the level of volunteerism is related to the level of the user. Another differentiating factor is the age-groups; whereas the regular users are generally in their 20s and 30s, the more frequent users are older, aged 30 or over.

The next section will discuss the specificities of the information provided herein, as well as researcher perceptions and their results.

Name	Age (years)	Editor category	User category
O. M.	40-50	Yes	Waze Royalty
G. T.	20- 30	Yes	Waze Royalty
L. G.	20-30	Yes	Waze Royalty
M. M.	30-40	Yes	Waze Royalty
A. S.	50 and over	Yes	Waze Royalty
F. Fe.	30-40	Yes	Waze Royalty
L. L.	20-30	Yes	Waze Royalty
D. D.	30-40	Yes	Waze Royalty
A. G.	30-40	Yes	Waze Royalty
A. C.	30-40	Yes	Waze Royalty
G. S.	20-30	No	Waze Knight
M. P.	20-30	No	Waze Warrior
F. Fr.	20-30	No	Waze Warrior
B. B.	20-30	No	Waze Warrior
P. M.	20-30	No	Waze Warrior
S. N.	20-30	No	Waze Knight
R. J.	40-50	No	Waze Grown-Up
R. M.	20-30	No	Waze Warrior
E. R.	20-30	No	Waze Royalty
L. D.	20-30	No	Waze Grown-up

Table II.
User interviews

Source: Elaborated by the authors

4. Analysis in relation to possible Waze collaboration motivators

The following section considers pertinent aspects when analyzing the answers obtained through the extensive interviews.

Due to similarities in some of the analyzed factors, three different categories were created to classify the information: utilization, personal values and gamification.

4.1 Aspects related to utilization

The factors directly related to Waze usage – intention of use, utility and user friendliness – are all interconnected. According to this concept, the survey aims at finding the reasons why the interviewees choose to use Waze through personal examination. In addition, the app features stand out by providing the users with the best route for each scenario, as well as real-time warnings for possible traffic interruptions. Aside from these features, the interviewees also recognize the benefits provided by the app, as explained by an advanced user:

With Waze I don¨t have to think about which route to take, it does that for me, all I have to do is follow. I see it as a great way to optimize my time, I can think about other things along the ride, such as the music playing on the radio, what the passenger is saying, and what I have to do when I arrive at work, etc. (A. G., personal statement, September 17, 2016).

When comparing the two groups, both believe that *Waze* is the best traffic-oriented platform available; however, each group recognizes different determining factors behind this claim. The regular users focus more on personal benefits, such as the precision and time in which information becomes available on the app. The advanced users also mention the personal benefits; however, user interaction as well as a sense of community were also important factors.

Regarding user opinions on possible benefits provided by Waze, the interviewees were encouraged to speak on the practicality and recurring benefits, which come from basic app

functions. Many of the features stood out as equally important in both of the groups, especially taking into consideration how the app saves time and money, as explained by one user: "[. . .] saving money by avoiding speed infractions, saving gas by optimizing routes, and saving on maintenance because I receive alerts when there are potholes ahead" (E. R., personal statement, September 13, 2016).

There are different opinions when it comes to the user friendliness that could interfere in the analysis, especially when it comes to the opinions concerning the interface and app operations.

Both groups agree that the app's interface is enjoyable for all users; however, the regular users displayed reservations and discontent concerning the layout of the information. Regardless, there is an understanding among the group of regular users that the app's interface is different from the competitor's, and it is actually one of the reasons why the users choose Waze.

Advanced users have an easier time using the app and most of the information gathered in the interviews shows that these users let the app "take them away", which demonstrates trust. One user shows this by stating, "I agree that the app provides practicality, because I let it work, to let it show me the best routes for that moment"' (O. M., personal statement, September 17, 2016).

Both groups recognize the benefits provided by the app and that it is easy to use for anyone who decides to try it; however, this is more clearly evidenced in the frequent and editor group. This could be because they are more involved and create a sense of community inside *Waze*, which could be a reflection of their values and/or personal motives, aspects that will be discussed further in the following section.

4.2 Aspects related to personal values

The script used in this study sought to understand the different user viewpoints, and if using Waze generated social engagement. The definition of engagement, in this case, is if there is as much user compatibility as the app appear. As a result, there is a tendency for social agents to develop altruistic and empathetic behaviors.

These results revealed distinctions between the two user groups. The majority of the advanced users hold a cause for using Waze; however, the motives behind this vary from helping mankind to the counterpoint of ownership. In general, the regular users do not acknowledge any cause behind using Waze, and therefore no tendency toward personal engagements.

Nonetheless, when observing compatibility, both user groups stated in the interviews that they recognize that the app helps with daily tasks but did not mention necessity, strong involvement or personal values. Altruism is a common theme between both of the user profiles, as, according to the interviewees, the collaborative actions carried out in the app are for the greater good. This is also evident when advanced and regular users justify using the app: "[. . .] improving the traffic and consequently the quality of life for everyone on the road." (F. F., personal statement, September 12, 2016) and "Let other Waze users have more information about the road conditions of the places they are traveling to (G. S., personal statement, September 14, 2016).

Empathy is the most common factor in the editor's responses; it involves actions that are not only for the greater good but also equally focused on interpreting what other users see as being useful. On the other hand, the regular users demonstrate reciprocity, a value that had not been anticipated during the survey held before the study. Siqueira (2005) characterized reciprocity as a social trading system based on current good morals. The actors understand that they should help the ones who help them and not impair those who are benefitted,

clearly shown in the following user statement: "I collaborate because I use the information provided by others, and by doing this everyone can improve their own user experience" (S. N., personal statement, September 12, 2016).

The factors stated above tend to be influenced by the level of socialization involved. Specifically with Waze, there is the possibility that user engagement comes from a necessary social involvement.

In relation to socialization, it is assumed that user awareness depends on their understanding that the app influences social interaction. Because of this, the users were asked if they consider Waze to be a social network. When comparing the answers, there was a greater amount of positive considerations among advanced users, but it was not a consensus. The majority of the regular users did not recognize social network as a characteristic of the app.

Among the users who perceive Waze as having social media characteristics, the majority mention that the app does not promote new relationships but new ways of interacting with already established contacts, regardless of the profile and conditions such as personal choice or a low number of local users.

Some of the advanced users mentioned the social ties that arise from deeper involvement, through community interaction in terms of map editing. One user elaborates on this by saying, "The editor group became a large group of friends on a national level, with daily interactions" (M. M., personal statement, September 16, 2016).

However, the acknowledgment of community interaction does not mean that advanced users become more proactive on Waze, which is explained by the following user statement: "I don't use Waze for interacting with fellow editors who I have become friends with, that was a consequence and not my main objective" (D. D., personal statement, September 15, 2016).

In general, the position of the interviewees in this study refers to their experiences with the platform, with apparent personal interactions instigated through gamification, which will be discussed in the following section.

4.3 Aspects related to gamification

One of the most potential factors to increase social interaction in different contexts is through the application of specific gaming dynamics, by offering innumerous benefits to the users involved (Fardo, 2013). Striving for a relationship characterized by innovation and what tends to motivate people, Kapp (2012) adds to this with personal feelings and abstraction from reality through a constructive act.

In this context, Dias (2000) confirms that "enjoyment" is an intrinsic personal factor that directly influences utility and facility of use, as explained earlier in the study. Another pertinent observation made by Di Bartolomeo *et al.* (2015), under the analysis of "work that does not feel like work", involves more intimate user interactions, fruit of utilized platform functions, without seeming like a laborious act.

At this point, map editing requires more intense user involvement. This way, the activities pertinent to the advanced user position can be perceived as more enjoyable than the regular users of Waze, making people work without realizing that they are working. This situation is shown in the following user statement: "From an editor's standpoint, yes, I see map editing as a hobby" (D. D., personal statement, September 15, 2016).

We also considered in this analysis the personal satisfaction in relation to helping other platform users by providing the app maintenance. One user describes this feeling by saying, "It makes me feel good when I share information on Waze and I believe that if more people did this, we would have a great free resource." (A. S., personal statement, September 13, 2016). Regular users did not show any indications of enjoyment in their answers.

However, a ludic approach can stimulate other collaborating factors, such as inserting the user in a different environment and providing the user with unusual interactions, perceivable enjoyment, entertainment, stress relief and even contact with gaming network structures.

With respect to the inquiries mentioned above, users were questioned about their level of enjoyment when collaborating on Waze. In general, the reasons for using gamification are related to user enjoyment and daily task solving, according to Cativelli *et al.* (2016); however, it is a factor worth justifying in this part of the study. Thus, practically all advanced users of the sample claim to find enjoyment when using the app, especially when mentioning user interaction and the pointing system. For the regular users, using Waze is strictly related to traffic assistance; this group did not perceive entertainment, enjoyment or any of the other factors previously discussed.

This section approaches ludic interaction, which is explained by Cativelli *et al.* (2016) as a dynamic factor in games. According to these authors, it is seen as a type of interaction that minimizes apparent risks, making it possible to learn concepts, techniques and abilities, which are related to the point of view of Di Bartolomeo *et al.* (2015), aside from generating an alternative and safe environment for the individuals to express themselves and make decisions, maximizing personal abilities. Also, Almeida (2015) affirms that these alternative environments offers various benefits, resulting in successful relationships.

Therefore, considering Waze user interaction, regardless of the group type, the interview script verified if the users found the app to be comparable to a game. This inquiry revealed diverse opinions in the group of advanced users, because not all of them see Waze as having game-like qualities; however, these users acknowledge that the app has gamification qualities. Anyway, the information gathered shows that, regardless of the perception of gamification, ludic interaction in an alternative environment is irrelevant to advanced users, as explained by one editor:

> [. . .] you have your points and you can compete with other users, and have a 'gaming experience', which is to insert intense traffic warnings and see the route turn red, for example (A. G., personal statement, September 17, 2016).

The majority of regular users do not acknowledge that Waze has game-like characteristics and do not consider ludic interaction and the alternative environment as motivators for collaboration.

This study uses different perspectives to approach the topics linked to the central question of the research, providing some perceptions and considerations on the theme, which are presented in the fifth section.

5. Final considerations

The proposition that the present study can identify the motivational factors for sharing through collaborative technology and related platforms, according to the users, indicates a few conclusions.

First, considering the characteristics of Waze, such as the different user profiles, we found in this research some distinctions on what motivates the users to share information. The table below clarifies the differences between the groups (Table III).

The conclusions above are surprising, especially in terms of the gamification and utilization aspects of the platform itself. Regardless of the user profile, neither group sees the dynamics of the Waze app as a motivation for sharing, whether for personal or interface use, or even for the ludic and dynamic gaming aspects.

In any case, social values and appeal motivate both user profiles, in different forms, which was expected even before the study took place. Given the different degrees of

	Regular users	Advanced users
Utilization	An understanding that the interface provides use adhesion; however, not related to collaboration	Total trust in information, believing exclusively in what the app shows, especially because it is a collective construction of information given by users; however, they do not perceive any involvement with the app, aside from the usual and practical use
Personal values	Although mentioning a sense of community, benefits are seen as strictly individual, usual and practical. Still, information is shared in return for the information received. The app is also perceived as the fruit of current trends and does not represent a cause	Engagement with possible causes, such as the issues involved in supporting defensive driving, access to all of the information and the time saved by the users. Empathy and altruism are highlighted here
Gamification	There is no entertainment factor perceived when using Waze, and as a result, users do not find enjoyment and much less see the app as having gaming qualities	Even though there is acknowledgment of entertainment, Waze is not seen as having gaming characteristics; however, there is an acknowledgment that the app has dynamic functions, such as the pointing and ranking system

Table III.
Differences between Waze users

Source: Elaboration of the authors

involvement with the platform in question, the social aspect is more related to trust and interaction (Botsman, 2016; Kotler *et al.*, 2017; Prahalad & Ramaswamy, 2004; Rifkin, 2015; Simis, 2015). The information above could be increased by the confirmation that regular users are involved in collaboration as a result of reciprocity, whereas the advanced users are involved in the dynamics of Waze due to altruistic and empathetic causes.

Second, from the managerial aspect, especially concerning the marketing position facing the scenarios related to the technology discussed herein, the study aimed at identifying the appeal of the new social relationships created by the collaborative economy. This research indicates that investing in the interface and ludic dynamics is not effective when trying to stimulate the user to share information, but it could be a great tool to promote the usage of the app. However, regardless of user profile, collaboration is found where there is social gain.

In cases with less collaborative technology involvement, it is pertinent that the user is stimulated to share through clear benefits that lead him/her to make contributions. On the other hand, when studying the links between the proposed relationships that the app shows, the possibility of a community becomes a reality, similarly to Waze editors, whose collaborations come from clearer causes.

Finally, our study presents some limitations in terms of the restricted group and focus on only one of the many collaborative technological social, as well as lacking on-site analysis of the use of Waze. Therefore, the authors understand that this research opens the horizon for future studies applied on other collaborative technological user platforms, to see if the results would be similar and construct a user journey in relation to information sharing through experimental monitoring.

In any event, the results presented in this study help to understand the current relationship between sharing economy and the technology provided to those who use

these platforms. This is a valid research when taking into consideration studies that approach the app Waze, as the issues explored in this paper are new in the academic studies considering previous app's analyses that are related to functionality (Quaresma & Gonçalves, 2013; Silva, Souza, Kafensztok, Rosa, & Pinho, 2015) and effectiveness (Lauand & Oliveira, 2013; Silveira *et al.*, 2015).

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Appendix. Identification

(1) Your name?

(2) Your age group?
- 20 years old
- Between 20 and 30 years old
- Between 30 and 40 years old
- Between 40 and 50 years old
- 50 and over

(3) What is your Waze profile?
- I am not an editor/unable to inform
- Map Editor
- Area Manager
- State Manager
- Country Manager
- Local Champ
- Global Champ
- Mentor
- Local Mentor Champ
- Global Mentor Champ

(4) What is your user category on Waze?
- Waze Baby
- Waze Adult
- Waze Warrior
- Waze Knight
- Waze King

Questions

(1) Why do you use *Waze*?
(2) Does the app provide practical and reoccurring benefits? Does the app provide other benefits? If so, which ones?
(3) What motivates you to share information on *Waze?*
(4) Do you enjoy using *Waze*? Why?
(5) Do you consider *Waze* to be a social network? If so, do you use the app for this reason?
(6) Do you think that *Waze* represents a greater cause? If yes, which one? Is it engaging?
(7) Is the Waze interface user-friendly? Do you think this contributes to its use?
(8) Would you compare Waze to a game? Why?

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