Creating and Supporting Virtual Communities
A City that Happens on a Facebook Group

Andre O. Bueno$^{(\boxtimes)}$ and Junia C. Anacleto

Federal University of Sao Carlos, Sao Carlos, SP, Brazil
{andre.obueno,junia}@dc.ufscar.br

Abstract. During the last years, the number of Online Social Networks (OSNs) users has been growing in a fast pace. In this context, it is common for people to be part of virtual communities, which may range from neighbourhood communities to communities of an artist's fans. However, creating and managing successful municipal virtual communities remains a challenge. In this paper, we describe a five years experiment encompassing the creation and management of a virtual community of a Brazilian town with 21,400 inhabitants using the Facebook Groups Tool. Currently, the group has 14,132 members, which corresponds to 66% of the population. Since the beginning, we follow Scott Peck's theory of community building. As a result, we describe a number of strategies involving the creation and management of municipal virtual communities. Besides, we list some difficulties we faced because of the lack of support from Facebook Groups tool for this type of communities.

Keywords: Virtual community · Community · Online Social Network · Virtual community management · Municipal virtual community

1 Introduction

The number of social network users has been growing in a fast pace in the past years. Today, more than 31% of the world's population are social media active users [9]. By breaking geographical barriers through the use of the Internet, we are now talking more with people from other places and, hence, we talk less with people from our neighbourhood. Microsoft points out we are facing a growth of hyper-connectivity, i.e., we have never been so connected with each other as we are now [8]. However, being connected, being able to talk to other people does not mean that we are fulfilling our social needs as human beings. One can talk to many people on social networks, but that does not mean he is part of a group, of a community.

According to Clark [2], "communities have two fundamental communal elements of any social system that are a sense of solidarity and a sense of significance". In other words, a member of a community needs to feel something to the other members of the community and, at the same time, s/he needs to feel that s/he has a role to play on that community, s/he needs to feel that s/he belongs

and s/he is needed on it. However, creating and maintaining virtual communities remain a challenge among the researchers of the field.

Back in 1993, at the beginning of the Internet era, the United States' vice-president, Gore [7] said the following sentence in one of his speech: "Our new ways of communicating will entertain as well as inform. More importantly, they will educate, promote democracy, and save lives. And in the process they will also create a lot of new jobs. In fact, they're already doing it". Today, more than 20 years later, we are still trying to understand how to create and manage effective virtual communities, especially now with the popularization of the Online Social Networks (OSNs) [9].

Kim [10] states that "communities are ultimately based on timeless social dynamics that transcend the medium of connection. In other words, people are people, even in cyberspace". Nevertheless, in the virtual world, the way people interact to each other is different than when people meet face-to-face [23]. In this context, it is necessary to study how these interactions happen and, more importantly, formalize the process of dealing with them. That way, others may replicate such actions in order to create successful virtual communities.

In this paper, we present a number of strategies involving the process of creating and managing virtual communities. However, since there are different types of virtual communities, in this project, we focus on virtual communities that are extensions of communities that already exist in the physical world. In our case, virtual communities of cities.

Our strategies follow Scott peck's theory of community building [18], which is divided in four steps: pseudocommunity, chaos, emptiness and true community. According to him, every community needs to follow these steps sequentially in order to become a true community.

Our experiment started in 2011 when we created a virtual community for a small city in Brazil using the Facebook Groups tool. Now, five years later, we present what we have learned during all these years.

First, we present the community concept and we also describe Peck's theory of community building. Next, we introduce the Facebook Group of the city that we created in order to perform this experiment. Then, we describe our strategies to create and support this virtual group based on Peck's theory steps. To conclude, we present some implications and further investigations that we will do in order to extract more information from this virtual community.

2   Background and Related Work

2.1   Community Building

Community is a very complex concept that still remains without a single definition accepted by the researchers of the field. The history of trying to define the concept is long. Back in 1973, Clark [2] performed a re-examination of the community concept in order to formalize the current definitions for the concept. In the end, he concluded that even though there are many definitions for the

concept, "communities have two fundamental communal elements of any social system that are a sense of solidarity and a sense of significance". According to him, the sense of solidarity encompasses all those sentiments that bring people together, like sympathy, gratitude, trust, and so on. We can also relate it to the sense of belonging presented by Maslow [11] on his pyramid of the human needs. Unfortunately, by trying to achieve the sense of solidarity, it becomes harder to achieve the second element: the sense of significance. The sense of significance is that feeling that members of a community have that they have a certain role to play on the community, i.e., each member thinks s/he has a function to fulfill. Both elements are closely linked and, in order to feel the sense of belonging, one must also have a sense of significance. Therefore, the ideal is to achieve a balance between both elements in order to have a community. Nevertheless, building a community in which its members achieve both senses is not a trivial task.

In this context, there are different theories involving the creation of communities [6,10,18]. After years dealing with the creation and management of online communities, Kim [10] said that he always found himself facing the same basic issues, like: persistent identity, newcomer confusion, etiquette standards, leadership roles and group dynamics. In his book, he presents 9 design strategies to build online communities which he called "Social Scaffolding". His strategies cover a big range of issues related to online communities. They range from reinforcing the importance of clarifying the purpose of the group to defining etiquette rules for it. The aim of his design strategies is to address general issues of online different types of communities. However, it does not provide more specific strategies to deal with specific types of communities.

Gardner [6] recommends 10 ingredients for building a community, which are:

1. wholeness incorporating diversity
2. a reasonable base of shared values
3. caring, trust, and teamwork
4. effective internal communication
5. participation
6. affirmation
7. links beyond the community
8. development of young people
9. a forward view
10. institutional arrangements for community maintenance.

In his book "Building Community" [6], he suggests a number of steps for the development of each one of these elements. However, many of these steps can be integrated into a virtual community environment, where these elements can be reinforced both by the members themselves and/or by the community manager. When talking about a Facebook Group, the group administrator can work in order to help the community at achieving them, which may result in a more connected community.

Both Gardner [6] and Kim [10] provide a list of elements that a community needs to have. However, they do not talk about the process of creating a community per se. In this context, the American psychiatrist Scott Peck wrote a book

directly addressing the task of building a community and explaining the stages it goes through doing its creation. This book is called "The Different Drum: Community Making and Peace" [18]. In his book, he stages that community building goes through four steps, which are:

1. **Pseudocommunity:** in this first stage, people tend to be more friendly and sociable. They usually do not try to impose their opinions on subjects, neither discuss them too deeply, being more tolerant and open to accept divergences among other opinions. People try to maintain a happy mood during the interactions;
2. **Chaos:** here, interactions start to become more intense and deeper. People start to share problems, complaints and, more importantly, they start to disagree with each other, trying to convince them that their opinion about a certain subject is the right one;
3. **Emptiness:** in this stage, members empty their emotional and mental distortions that reduce their ability to really share, listen and help each other without a judge look. This is the hardest stage, because members need to put aside patterns they have been developing through their lives in order to maintain self-worth and positive emotion;
4. **True community:** in this stage, members become able to relate to each other's feelings. The discussions, even though some times may heat up, they never get sour. The mood is once more happier. Even when there is friction among the members in some discussions, they know that that is for a positive change. Finally, this is the stage in which one can say a true community exists, one where members can feel the sense of solidarity and the sense of significance (Fig. 1).

Fig. 1. The four stages of building a community proposed by Peck [18]

According to him, every community starts in the Pseudocommunity stage and, if it carries on, it will go until the last stage, which is the True community. Then, that can be seen as a community.

2.2 Virtual Communities

At the begin of the 90's, with the crescent adoption of the Internet, people have also started interacting with each other on the virtual world. Then, in 1993, Rheingold defined a new type of communities, which he called Virtual Communities [22]. He defined them as a community of people who interacts in

the virtual world through the use of technology. Virtual communities have the potential of facilitating the communication among its members by compressing or expanding space-time. As a result, this may contributes to making online interaction more appealing to people [21].

Although virtual communities (also known as online communities or digital communities) can be classified as a type of community, they are in a different level of abstraction when compared to the other types of communities. Apart from them, virtual communities cannot happen by themselves. Every virtual community is also a geographic community, a community of interest or other type of community, i.e., virtual communities are always attached to some other type of community. This happens because the main characteristic of a virtual community is related to the way that interaction among its members happens, and not on its member's characteristics, as in other cases. Therefore, in this study, we are interested in a group of virtual communities that emerges from communities that already exist in the physical world, e.g., a community of a neighborhood, a street, a city, etc.

In this context, back in 1972, Etziori [4] developed the MINERVA (Multiple Input Network for Evaluating Reactions, Votes and Attitudes) project, which consists of a mass dialogue and response system. The purpose of MINERVA was to provide means for inhabitants of a city to communicate with each other, including city administrators authorities, such as councilmen, mayors, etc. According to him, "whether informed and active citizens generate more conflict or more consensus, have greater feelings of alienation or of involvement, will depend on the way the system for mass participation is used". He named such virtual communities of "Electronic Town Halls". Nevertheless, back then, there was no Internet to support the MINERVA project. Thus, users should use radio, TV, telephone and have some face-to-face meetings in order to communicate to each other, since there was no Internet. Therefore, the project died.

Nowadays, using Online Social Networks (OSNs) is already a common habit among many of us. According to the global agency We Are Social [9], by January of 2016, we were 7.395 billion people on Earth, whose 3.419 billion are active Internet users and 2.307 billion are active social media users. This significantly affects the way communication and connection occurs between friends and family [19]. Nowadays, using the Internet to communicate is the same as using the phone to chat was in the past [20].

As a consequence of this new reality, it is becoming common to see communities trying to expand their communication to the virtual world by using tools such as the Facebook Groups platform. By adopting this strategy, the community is able to cut geographical and temporal barriers at the same time.

3   The City and the Facebook Group

The city being studied in this project is situated in the Southeast of Brazil (400 km away from Sao Paulo). It has 1,064.790 km^2 and 21,400 inhabitants. Local economy is driven by agriculture, tourism e handicraft (Fig. 2).

Fig. 2. The city being studied in this project

According to the global agency We Are Social, in Brazil 50% of the population use Facebook [9]. In this context, Facebook groups are something quite popular among Brazilians. Therefore, once half of Brazil's population uses Facebook, i.e., they are already familiar with it, combined with its large scale adoption, made us choose it in our experiment.

On Dec. 26, 2011, we created a Facebook group for the city in order to perform our observations. Our main goal with this study is to understand how to manage a virtual community of a community that already exists in the physical world. Further, our goal for the group is to leverage the members' engagement with city management, i.e., make the citizens that are member of the group more concerned about how their city is being administrated.

Since the beginning, we adopted a strategy to have only one administrator for the group, which is one of the authors of this paper. Even though during the years

a number of members had volunteered to become administrators or moderators of the group, all the volunteers were rejected. Differently from a community in the physical world, in a virtual community, the administrator of the community plays a very important role. The administrator is the only member who has more "power" than the others, because he has access to some features in the group that normal members don't have. Therefore, this strategy of having only one administrator was adopted because we wanted to be sure that we were going to be the only ones intervening on the group. Thereby, we avoided interference on our experiment, such as other group administrator removing posts or members without us knowing about such actions, etc.

In the next section, we describe the strategies we adopted based on the knowledge we have acquired over the years by performing this experiment. Besides, we also present some problems with the Facebook Groups tool to support municipal communities like ours. To finish, we describe the strategies we adopted to overcome such problems in order to have a true community.

4   Creating and Supporting the Virtual Community

As already mentioned, we have been performing this experiment for more than five years, which aims at creating and supporting a virtual community of a city in a Facebook group by following Peck's building community strategy [18].

In order to collect data from the group we adopted the cyber-ethnography approach [25], i.e., we have a profile that is a member of the group. By doing that, we are able to see the group the same way as other members and, as a result, we can better understand their behaviour and collect data. Over the years we have been trying different actions in order to advance the stages proposed by Peck to get to the true community stage.

Next we describe the path of the group through all the four stages proposed by Peck's theory.

4.1   The Pseudocommunity Stage

At the beginning, since the group had only a few members, the activity on it was small. However, the bigger it gets, the bigger is the number of activity on it, as we can see in Fig. 3.

Every day there are new people requesting to join the group. On average, 10 new members join the group. However, since September 2016, this average grew to 29 new members added per day. This change still needs more investigation of the researcher's team in order to understand the cause of it.

During all these years, there have been many peaks in the number of new members being added to the group, which usually occur based on situations that happen in the city. As an example, when there is an accident involving people from the city, or a big discussion about something related to the city administration, or politics, this number tends to grow, because people in the physical world (the city) are talking about this subject on the streets and, when
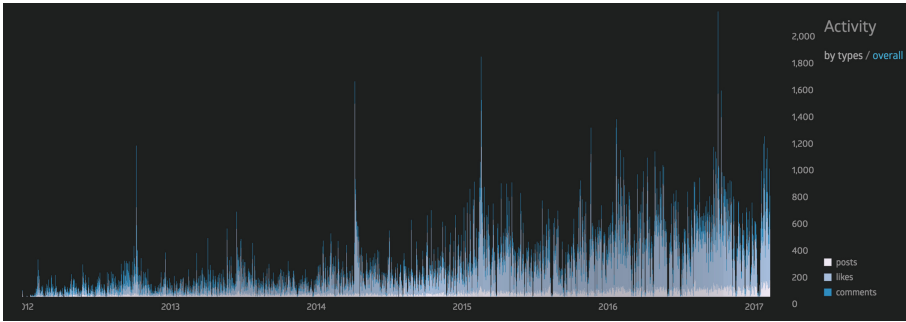
Fig. 3. Activity on the group over the years of its existence

they discover that the subject is also being discussed on the group, they want to be a part of it. Then, when situations like these happen, many citizens discover the group and send a request to join the group. By talking to people in such situation, we learned that they request to join the group because they want to know more about the subject being discussed. Other situation is when a person becomes a member of the group by a friend's invitation and, after trying it out, they start inviting many of his/her own friends to also become part of it, which sometimes may involve the insertion of dozens of new members in a day.

As already explained, in this step, members of a community tend to be more kind to each other and the conversation is more superficial, because everyone wants to cause a good impression. Then, in order to help the group at growing, we were always trying to incentive members to talk, by liking, commenting on posts and doing posts ourselves using our profile in the group. Generally, these posts were about random things involving the city, such as posts asking for some information, posts offering some product, someone sharing a picture of the city, and so on.

By doing that, we were aiming at leveraging members sense of solidarity, which could result in leveraging their activity in the group. According to Weil [26], "a central element of community building is shared tasks; when people invest in their community, their bond is strengthened". In other words, by encouraging members to interact in the group, they become more active on it, because they feel that they have a role to play in there, that people expect something from them. This is the sense of significance explained by Clark [2] as one of the most important parts of a community.

The group started with a few members but it has always been growing since then. Figure 4 shows the growing curve of the number of members in the group for the last three years.

In a Facebook Group, in order to join the group, a person needs to send a join request using his/her Facebook profile. Then, a member of the group needs to accept his/her request. In this context, we observed that it is very important to accept all the join requests as soon as possible, because, if a person requests
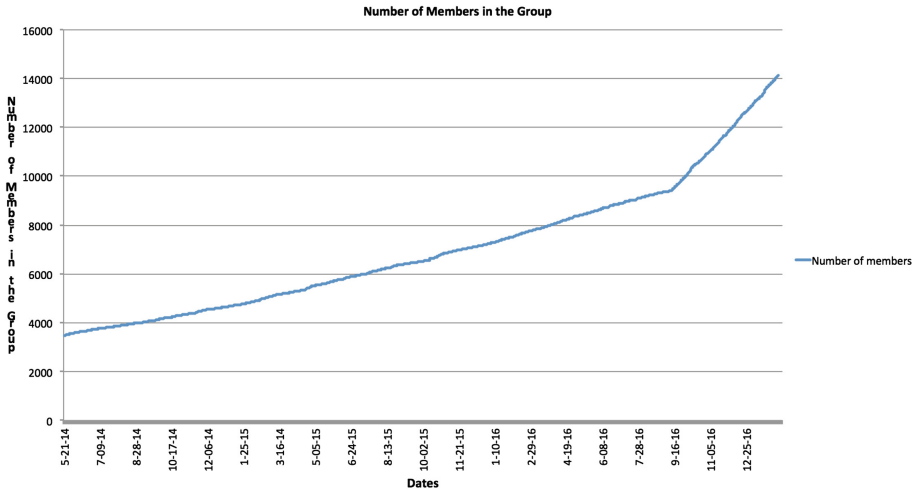
Fig. 4. Total number of members in the group for the last three years

to join the groups, but his/her request is ignored, this person may feel excluded. As a consequence, this person might create a bad first impression of the group, which may lead to him/her not feeling that him/her belong to the group, even though s/he is a member of the community in the physical world.

However, as the group started to grow, the number of discussions grew as well. Then, the group advanced to the second stage of Peck's theory, the Chaos stage.

4.2   The Chaos Stage

During this experiment, there was a situation that pushed the group even faster to the chaos stage. In this case, a councilman of the city joined the group and he started sharing his actions as a councilman in there. Then, members started interacting in his posts, some congratulating him, others complaining and discussing the subject with him and with other members.

The group that once had been used to ask for information about something in the city, to sell products and to talk about superficial things, after that situation, it included discussions about politics on its range of discussed subjects.

At that point, people in the city started to talk about the discussions that were happening in the group and they started sending requests to join the group in order to participate as well. As a consequence, the group started to increase its social capital [3] among the city's inhabitants.

In this stage, as previously described, members of the community start to explicit their opinions about subjects, even though others might not agree with them. Thus, many debates started to happen in the group, where the majority of the were about politics. However, at that time, the group also started to be

used with other purpose, which is: a place to complain to the politicians about some problem in the city related to the city's administration. Then, politicians started to get involved on the discussions as well. As a result, some of these complaints made in the group started to get solved, what increased even more the social capital of the group.

However, with the popularity, the group started to face a new problem, which was the increasing of the number of members with unidentified profiles. Such profiles started to use the anonymity as a shield to hide while discussing in the group, without concerning about what they were saying, because they would not have to answer for it, once no one could know who they were behind those profiles. Then, the group started to lose credibility and members started to complain and ask the group administration for a solution. So, administration created a rule that prohibits unidentified profiles to have opinion in the group, i.e., they can participate, see posts, like them, even comment, however, they cannot have opinion in discussions. As a result, members who were leaving the group started to come back and the number of discussions that were decreasing went back to normal.

During the five years of the group's existence, on average, 11 people sent requests to join the group every day. From these 11 requests, on average, 10 became members. This one person per day that was not accepted represents unidentified profiles - profiles without identification, or someone or something that is not what it appears to be – which are not allowed in the group. However, over the years, the number of unidentified profiles requesting to join the group has been decreasing.

We believe this is happening because the population started to realize the importance and the impact of the group. At the begin, many tried to join using unidentified profiles to see how the group works and, also, to use it anonymously behind an unidentified profile. However, after seeing that the group administration was removing them and do not allowing new ones to join in, the number of requests started to decrease.

Another thing that became common in the group it was posts of members asking for help. Once members started to see the group a community in which they belonged, they started to open themselves in there. Since then, from time to time, people ask for help and, in many times, their requests are attended. Some examples of these posts are: people asking money to buy some medicine, stating that they do not have money to buy it; single pregnant moms asking for baby clothes and diapers; a father from a poor family asking for a Christmas toy to his son; etc. In most of the times, all the requests are attended.

By looking at these posts, we realized that the group had once more moved to the next stage of Peck's theory of community building [18], "Emptiness". Members of the group started to open themselves, both to discuss or to ask for help. The group was not a simple virtual community anymore, it became an extension of the city in the virtual world (Fig. 5).
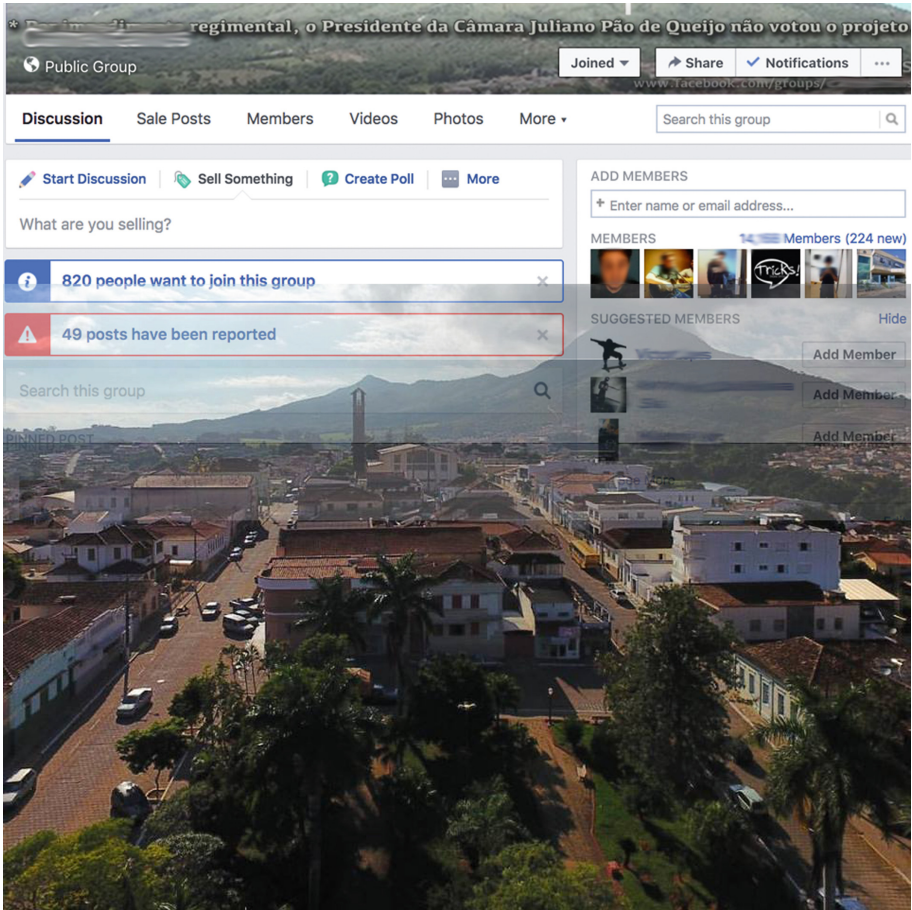
Fig. 5. The Facebook group became an extension of the city in the virtual world

4.3   Emptiness Stage

In this stage, members empty their emotional and mental distortions that reduce their ability to really share, listen and help each other without a judge look. This is the hardest stage for the members, because they need to put aside patterns they have been developing through their lives in order to maintain self-worth and positive emotion. Now, members open themselves to the group and they start being themselves in there, without the need of hiding their true self.

At this point, the group is very active with dozens of posts everyday, ranging from posts selling products to discussions about politics, city problems, someone asking for some help, among others.

However, once members started to see the group as a place filled with friends, some of them started to use the group to post everything they thought it was interesting to share with others, even gossips. Then, a new problem emerged,

which was the fact that some members were removing their posts after realizing that its content was not true, as they thought. The problem about that is that the members who only saw the post, but not the comments on it explaining the truth, would keep thinking that the post content was true. Here is an example: once, a member did a post telling that an employee of the city's municipal hospital had done a procedure in a wrong way while attending his son. Then, members started to comment on the post explaining to him that was the correct procedure. Thus, after realizing it, he removed the post. However, members who only saw his post kept thinking that the employee was wrong, because since the post had been removed, they could not read the truth in the comments.

In order to solve this problem, a new rule was created for the group, which says that it is prohibited to remove posts, i.e., if a member removes his/her post, s/he is remover from the group. As a result, members started to help at policing to see if any post had been removed. Every time they realized that a post had been removed, they would tell to the group administrator and send him a screenshot of the removed post, in order to prove that the post had indeed being removed. Besides, members also started to report unidentified profiles when they found one. In other words, members started to help at managing the group and caring about it. At the same time, now that members were more open to discuss any type of subject in the group, discussions about politics and city problems started to become the most common type of discussions in the group. In other words, members were starting to be more concerned about the city, i.e., the group was helping at leveraging their civic engagement.

Obar [15] defines Civic Engagement as "the process that involves moving an individual away from disinterest, distraction, ignorance, and apathy and towards education, understanding, motivation, and action". However, in order to do that, members need to open themselves while discussing in the group, by presenting their true opinion, even that results in others disagreeing with them.

As already mentioned, the goal of the group is to leverage member's engagement with the city's management. Therefore, by seeing the continuously growing number of members in the group, the behavior of the members in the group, which were opening themselves to ask for help and/or to help other members, we were sure that the group had achieved the last stage of Peck's theory of community building [18], which is the "True Community".

4.4   True Community Stage

According to the results provided by the Sociograph.io [24] tool (Fig. 3), over its existence, the group had 45.996 posts from 4.344 different authors. In total, there have been 313.000 likes, 18.000 shares and 119.000 comments. It is also possible to see that the member's activities in the group (posts, likes and comments) have been increasing over time.

At the moment this paper is being written, the group has 14,132 members, which corresponds to 66% of the city population (21,400). For us, we believe this percentage is already very impressive as it includes a large fraction of all the citizens, but if we remove from it the people who do not use Facebook, this percentage gets even higher.

We believe that the combination of the growing number of members together with the growing number of member's activities in the group over the years can be seen as indicators of the effectiveness of the group. More than that, we believe that this supports the claim that the city has indeed adopted the Facebook group as an extension of the physical community in the virtual world.

Besides, now, members of the group are able to relate to each other's feelings, which shows that they have a sense of solidarity among them. The discussions, even though some times may heat up, members understand that they disagree about that subject, however, in one next occasion, they are discussing again without getting sour because of the disagreement between them. This cases show how the group has really evolved to a true community, because, at the beginning of the group, it was common for a member to leave the group after a heat discussion, since they did not have a deep relationship with each other. Nowadays, even when there is friction among the members in some discussions, they know that is for a positive change.

Finally, according to Peck [18], this is the stage in which one can say a true community exists, one where members can feel the sense of solidarity and the sense of significance described by clark [2] as the main components of a community. So, we can affirm that this Facebook Group of this city became indeed a true community.

5 The Social Capital of a Virtual Community

As already mentioned, there are different types of communities, as presented by Clark in his review of the community concept [2]. In our case, we are working with virtual communities created from communities that already exist in the physical world, i.e., neighborhoods, cities, etc.

During the five years that we have been performing this experiment, we believe that credibility is the most important characteristic to define the success of a virtual community. Credibility can be seen as an important part of the social capital [3] of a community. Coleman [3] says "just as physical capital and human capital facilitate productive activity, social capital does as well". He also affirms that a group of people in which there is trustworthiness is able to accomplish much more than a group without that. In other words, a virtual community where its members have trust on it, tends to succeed more than one without it.

In this context, impartiality is a principle that is crucial to the managers of the virtual community. When dealing with any type of situation that occurs in the virtual community, managers need to be impartial and take the same actions towards every member of the community, basing their decisions on objective criteria, without providing any privilege to anyone. On a virtual community this is very important, because managers of the community has the power to perform some actions that normal members are not allowed to do. Then, managers need to be very careful when acting.

During his studies about Third places, Oldenburg [16] describes one of the features of a Third place as being the "Leveler". According to him, a place

for socialization (like a virtual community) can not take into consideration the individual's status in the society. The economic and/or social status of a member have no impact in there, which leads to a sense of commonality among the members. As a result, this may increase the member's sense of significance [2] in the community, because they know that they have a role to play in there and that their social status does not interfere on that. While in there, they have the same "power" as other members, aside of the positions in the society.

Moreover, the Leveler feature also says that every person is allowed to become a member of that community, regardless of that social status. When talking about a virtual community, this principle also needs to be followed, i.e., every person in the community in the physical world is welcome to become a member of the virtual community, without exceptions. Once more, managers need to guarantee such thing to happen, otherwise, the virtual community will lose credibility among the city's inhabitants. Consequently, the virtual community's social capital will also decrease.

Then, if the group's administrators are impartial or act differently towards the members of the group, members realize that and the group's credibility decreases. As a result, they start complaining about it and their activity decreases. We had seen that happen in other groups of the city with the same purpose of ours. In these cases, the groups still exist, however, the activity on them (posts, comments, likes, etc.) decreased significantly.

6   Strategies for Creating and Supporting a Municipal Facebook Group

When looking in the literature for research about measuring and evaluating virtual community tools, it is common to find a number of works about how to measure usability [19] and some about measuring sociability on them [20]. However, besides evaluating what is already implemented in the tool, we believe that is also necessary to understand the behavior of the members of the community in order to see what they need that is not yet implemented. Moreover, by understanding their behavior, it also becomes possible to help at providing technological feedback for the designers, once members are not always familiar with the technological tools development. That way, the feedback to the Virtual Community tools' developers can be even more complete.

Thinking about that, after five years observing the behavior of the members of this virtual community following a cyber-ethnography approach [25], we were able to develop 14 strategies that we have been using in order to support this group. These strategies are based on the Peck's stages for building communities [18].

Here follow the list with the 14 strategies:

1. *The Group Administrator (GA) cannot be an employee (paid administrator) of the city hall, because s/he could/would tend to be impartial. The question is, who is paying his salary? S/He will most likely perform according to his employer's will;*

2. *The GA has to be impartial and trustworthy all the time, regardless of the subject and the members involved in any situation that s/he has to address. As a consequence, members will feel more free to share anything in the group without fearing repression by the group's administrator;*
3. *The GA needs to accept people's join requests as fast as possible. If a request is left unattended, that person might have a bad first impression about the group and dislike it before even becoming a member. That may result in an unsatisfied member, who does not feel like s/he belongs to the group;*
4. *Fake profiles cannot be allowed in the group. However, unidentified profiles (a store profile, etc.) can join with the condition of not being able to have opinion in posts or comments. Every time a situation involving an unidentified profile occurs, it's the GA's job to analyse it and take an impartial action;*
5. *The GA needs to help at creating rules about what can be posted in the group and what cannot. One way to do that is by creating pools where the group's members can vote and discuss which rules should be applied. That way, members feel they belong to the group and, more than that, they feel their voices are also heard, which may impact in the way they see the group. That way, their sense of significance is increased;*
6. *The GA needs to put the group rules on a visible place where every member can find it easily, specially the ones who recently became members of the group. As a suggestion, the group description would be a good place to put it;*
7. *The GA needs to answer all the members messages in order to show them s/he cares about the group and the about the members. The faster, the better;*
8. *The GA must remove all posts that are not related to the topic of the group. Even though there are numerous important subjects, the group needs to be strict to only its subject, which is the city. Otherwise, people interested in the group's subject (the city) will not be able to find the posts about it among many posts of topics that are not related to the group;*
9. *The GA needs to clear repeated posts, which sometimes may be a user error when using the Facebook Groups tool;*
10. *The GA needs to look at the posts and remove the ones that are not allowed in the group, according to the rules. S/he needs to do that daily (if possible, more than one time per day). That way, members will know that the group is not abandoned, which may increase the group's credibility among the members;*
11. *The GA needs to send direct messages to members if they are repeatedly posting the same thing. In this case, it is important to have a template of the message in order to treat all the members equally. Otherwise, this can lead to bad situations where a user feels inferior to another, because they were treated differently by the group's administrator. One example of this situation is when a new member of the groups is an entrepreneur and starts posting a photo for each one of his/her products on the group. Then, the GA needs to remove the posts (leaving only one) and to send this pre defined message to him/her;*
12. *The GA needs to remove members from the group whenever they break any of the group rules;*

13. *The GA needs to be alert to the group in order to see important posts that should be pinned to the group. This feature of the Facebook Groups tool allows a post to be pinned on the top of the group, allowing everyone to see it. However, the GA needs to be very careful when choosing which post to pin, always remembering of being impartial;*
14. *The GA can/should use the group's cover picture as a dynamic place where s/he can share news about the city management, advertise meetings of the chamber of councilors in order to motivate members to attend them, advertise philanthropy posts about parties, workshops, talks, etc., in order to help at advertising them. In order to do that, s/he needs to see the posts of the group and, every time s/he sees a post that s/he thinks it should be posted in the cover of the group, s/he needs to send a private message to the author of the post and ask to him/her if s/he can put that on the group's cover;*

We believe these strategies can help others at creating and supporting virtual communities that are really embraced by the community (the city), as ours.

7   Conclusion

After observing this Facebook group for more than five years, we found out that the group administrator (GA) has a very important role to play in such environment. The GA has to perform a number of actions in order to help a virtual community goes through all the stages of a community building proposed by Peck's theory [18].

Besides, it is very important to observe the members' behavior and, based on that, develop new strategies to deal with problems that might appear during the existence of the virtual community. When talking about these strategies, some of them are related to the features of the virtual community tool, but others are not. In order to keep the group working, the GA needs to develop perform some actions that goes beyond the support provided by the virtual community tool. During our study, we developed 14 strategies.

Finally, as a lesson learned, we believe the most important thing when dealing with a virtual community is credibility, i.e., the way members see the virtual community. In other words, how strong is the social capital of the virtual community among its members. In this case, the most important thing in order to increase the social capital of a virtual community is to have an impartial GA, especially if it is a virtual community of a community that already exists in the physical world. Regardless of the social status of a member in the society, all the members of the virtual community need to be treated equally in every situation. By doing that, the credibility of the group increases in the member's eyes and, as a consequence, their sense of significance in the group, because they know they are treated equally in there, that they are needed in there.

We expect that the strategies we developed during this study help others in the process of creating and supporting virtual communities for other cities. Then, other people will also increase their civic engagement and, as a result, they will also enjoy the benefits of having an extension of their city in the virtual world, as the inhabitants of the city being studied in this project.

References

1. Angrosino, M.: Doing Ethnographic and Observational Research. Sage, Thousand Oaks (2007)
2. Clark, D.B.: The concept of community: a re-examination. Sociol. Rev. **21**(3), 397–416 (1973). doi:10.1111/j.1467-954X.1973.tb00230.x
3. Coleman, J.S.: Social capital in the creation of human capital. Am. J. Sociol. **94**, S95–S120 (1988)
4. Etzioni, A.: MINERVA: an electronic town hall. Policy Sci. **3**(4), 457–474 (1972). doi:10.1007/BF01405348
5. Etzioni, A.E.O.: Face-to-face and computer-mediated communities, a comparative analysis. Inf. Soc. **15**(4), 241–248 (1999). doi:10.1080/019722499128402
6. Gardner, J.W.: Building Community. Independent Sector, Washington, DC (1991)
7. Gore, Al.: Speech at the Superhighway Summit Royce Hall. UCLA, Los Angeles, 11 January 1993. http://www.ibiblio.org/icky/speech2.html. Accessed 4 Dec 2016
8. Harper, E.R., Rodden, T., Rogers, Y., Sellen, A., Human, B.: Human-Computer Interaction in the Year 2020 (2008). OAI: 10.1.1.153.4252
9. Kemp, S.: We are Social. Special Reports: Digital in 2016. http://wearesocial.com/uk/special-reports/digital-in-2016. Accessed 1 Dec 2016
10. Kim, A.J.: Community Building on the Web: Secret Strategies for Successful Online Communities. Addison-Wesley Longman Publishing Co., Inc., Boston (2000)
11. Maslow, A.H.: A theory of human motivation. Psychol. Rev. **50**(4), 370 (1943). doi:10.1037/h0054346
12. McKenna, K.Y., Bargh, J.A.: Plan 9 from cyberspace: the implications of the Internet for personality and social psychology. Pers. Soc. Psychol. Rev. **4**(1), 57–75 (2000). doi:10.1207/S15327957PSPR0401_6
13. Memarovic, N., Langheinrich, M., Cheverst, K., Taylor, N., Alt, F.: P-layers-a layered framework addressing the multifaceted issues facing community-supporting public display deployments. ACM Trans. Comput.-Hum. Interact. (TOCHI) **20**(3), 17 (2013). doi:10.1145/2491500.2491505
14. Monbiot, G.: The Age of Loneliness is Killing Us. Guardian (2014)
15. Obar, J.A., Zube, P., Lampe, C.: Advocacy 2.0: an analysis of how advocacy groups in the United States perceive and use social media as tools for facilitating civic engagement and collective action. J. Inf. Policy **2**, 1–25 (2012)
16. Oldenburg, R.: The Great Good Place: Café, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts, and how They Get You Through the Day. Paragon House Publishers, Vadnais Heights (1989)
17. Palmer, P.J., Marty, M.E.: The Company of Strangers: Christians and the Renewal of America's Public Life. Crossroad, New York (1981)
18. Peck, M.S.: The Different Drum: Community Making and Peace. Simon and Schuster, New York (2010)
19. Phillips, D., Athwal, B., Robinson, D., Harrison, M.: Towards intercultural engagement: building shared visions of neighbourhood and community in an era of new migration. J. Ethn. Migr. Stud. **40**(1), 42–59 (2014). doi:10.1080/1369183X.2013.782146

20. Preece, J.: Sociability and usability in online communities: determining and measuring success. Behav. Inf. Technol. **20**(5), 347–356 (2001). doi:10.1080/01449290110084683
21. Renninger, K.A., Shumar, W.: Building Virtual Communities: Learning and Change in Cyberspace. Cambridge University Press, Cambridge (2002)
22. Rheingold, H.: The Virtual Community: Finding Commection in a Computerized World. Addison-Wesley Longman Publishing Co., Inc., Boston (1993)
23. Smith, M.A., Kollock, P.: Communities in Cyberspace. Psychology Press, Park Drive (1999)
24. Sociograph.io.: Analytics for Facebook Groups and Pages. http://sociograph.io/my.html. Accessed 7 Jan 2017
25. Ward, K.J.: Cyber-ethnography and the emergence of the virtually new community. J. Inf. Technol. **14**(1), 95–105 (1999). doi:10.1080/026839699344773
26. Weil, M.O.: Community building: building community practice. Soc. Work **41**(5), 481–499 (1996). doi:10.1093/sw/41.5.481