

GRAFFTER

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Graffter Case Report

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Abstract

This project was conducted for the course Innovation and Entrepreneurship, which is part of the EIT Digital Master School program. We will do a business analysis for the Graffter company to understand and define the mechanisms to engage the end user in a cultural and tourism scenario sponsored (in some cases) by brands. Graffter App is the first app that transforms the buildings into the world's biggest communication space through Augmented Reality.

Throughout this project, we will focus on three pillars. We will try to overcome the challenges these pillars bring and provide concepts (as well as ideas for additional features and possibilities) for each of these pillars. The pillars are defined as follows:

1. Engage the users to use the APP (conquer)
2. Content Creation and Privacy
3. Campaigning

Every pillar would start with market research interviews to gain insights from potential users. These insights would be used to begin brainstorm sessions with the researcher. A concept would follow, which would be validated through a survey (quantitative) and through validation interviews (qualitative). Students were the initial target group of the project and were targeted to participate with both the survey and interviews wherever possible.

For each pillar, we validated some points and we gained more creative insights that could be implemented in future concepts and scenario's. A business proposal is presented to the company. Limitations of the research as well as risky assumptions are addressed. Moreover, concrete recommendations are provided to the company. All the user interviews and surveys have been summarised and added as appendixes to the document.

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Chapter 1: Introduction

Within this chapter, we will introduce the company as well as the assignment of the company case. This chapter will serve to get a better understanding of the client and how the company case is related to them.

1.1. Graffter

Graffter App is the first app that transforms the buildings into the world's biggest communication space. Mobile users can conquer buildings and monuments, uploading and sharing their content within that space. Graffter allows the visual recognition of facades from any angle and despite any light condition thanks to their proprietary technology of Augmented Reality.

The Graffter company is a technological company in the field of ICT with a value proposition based on converting the building's facades of the cities into a new communication channel. Graffter is set out to create the first Augmented Reality (AR) platform in the world that, using a mobile terminal (Smartphone), could be used to recognise through a natural way (despite different angles, luminosity and distance) the facades of the cities. They are able to locate with highest accuracy virtual contents at those facades using AR techniques. This is all with the aim of creating a visual experience for the user as if they are looking at a physical billboard (e.g. outdoor advertising posters).

What makes this a unique products is that it can do much more than only replace physical billboards: through the augmented reality technology, the user can see videos, 3D animations or other types of media displayed on a facade through their smartphone. Moreover, the user can also interact with the content, meaning that advertisements or other content could provide a much higher user experience level than static content brings.

Currently, the company has reached a minimum viable product (MVP), and is all set to focus on finding the right market to exploit the GRAFFTER technology.

1.2. The Company Case

This is where our team comes in. We will do a business analysis to understand and define the mechanisms to engage the end user in a cultural and tourism scenario sponsored (in some cases) by brands.

This project was conducted for the course Innovation and Entrepreneurship, which is part of the EIT Digital Master School program. The project was a collaboration with students from both Universidad Politécnica de Madrid and Università degli Studi di Trento.

The following people were actively involved within the project:

Entrepreneur and Expert: Miguel Angel Orellana (Graffter)

Coach & Lecturer: Javier Segovia (UPM), Galena Pisoni and Milena Stoycheva (UniTN)

Users: Our study could not have been successfully conducted without the help of many users who were willing to participate in interviews or who filled out our surveys (mostly students)

Chapter 2: Challenges

The Graffter team had already identified their challenges. They are working towards understanding each of them and to diminish these challenges in each phase of development. Graffter wanted the insight on handling these challenges from the fresh minds of students who are trained in business thinking as well as user-centered design thinking. They wanted to make use of the talents and time of these students to get in touch with prospective users and understand their perspective on certain matters.

The overall goal of the project was to gain an understanding in what are feasible and desired concepts for the technology developed by the company. Moreover, by understanding and providing several different concept opportunities, the company could gain a better insight into which possible types of business relations they might acquire to make the Graffter application a large success.

The student team got a better understanding of each of the challenges from the detailed meetings with the company which occurred once a week regularly (every other week during the execution of the project, which will be further described in the methodology section of this report). Graffter already had a clear idea as to what the student team would have to focus on. They had identified these three challenges called “the 3 pillars”, which they wanted recommendations on based on the student team’s perspective as well as from user perspective.

The three pillars are as follows:

1. Engage the users to use the APP (conquer)
2. Content Creation and Privacy
3. Campaigning

The three different pillars will be described individually.

2.1. Pillar 1: User Engagement

There are a huge number of buildings in and around every city in the world. Since Graffter is a new app, they only have a few sets of façades (buildings captured using Graffter app) in their database. Graffter wants to create a huge database of these façades, engaging the users in the conquering phase (similar to the concept of early adopters or special feature for premium users). These users will be conquerors of these façades and will be helping Graffter build up their database and integrate as

many façades as possible into the app. The conquerors will receive some kind of incentives or power over their captured façades. Graffter wanted to know how they can engage the users to build up their façades database and motivating them to capture more façades.

2.2. Pillar 2: Content Creation and Privacy

Graffter already has a well-designed working high-fidelity prototype app. Within this pillar, they wanted to make sure that all the functionalities they already have are sufficient and also understand what possible additional features could be. This pillar also included the type of content that is displayed on these façades and how to make people interested in putting up their contents onto the façades. Pillar 2 is a very broad section and has a business and technical side to it. The technical side was not taken up as part of the project due to the limited time constraint and also lack of accessibility to the niche target group users for these particular user interviews. The outcome of this pillar would mostly serve as recommendations for possible future features of concept ideas.

2.3. Pillar 3: Campaigning and Consuming Content

Graffter also had a strong business model for using advertisements in their app (tailor-made for the users) and making people use the app by giving them very appealing ad campaigns. Incentives were also provided for interacting with the content. Moreover, they would motivate them to come back and use the app frequently. This was quite a challenging pillar as the branding factor or the advertising factor is related to very personal opinions and it varies among person to person. The team helped in validating the already existing method used by Graffter as well as build new ideas and validate those with users as well.

It is very important for Graffter to understand her users, to modify their application to the best of their ability to make it usable for their targeted users and to provide a unique user experience. They were even open for changes to the whole framework of the application, if their users showed interest in different concepts. The team was dedicated to find the solution to these challenges Graffter proposed, using inputs from the main target users.

Chapter 3: Methodology

During the first two weeks of the project, the team met with the company (once a week) and also the team members (twice a week). Both sessions were meant for brainstorming and discussing ideas, especially in understanding the Graffter company and their needs.

The team decided to do the project in a different method or process than other company cases, as they realised that Graffter is more interested and excited to have a huge number of different ideas. Moreover, they also value the opinion of their users. The team focused on one particular set of users (students) and decided to conduct both qualitative and quantitative UX testing using interviews and surveys for each of the three pillars.

This idea was put forward to the company and they also were very excited about the involvement of users in all the phases of the project and also for all the challenge pillars of the company. The whole planning was done with the Graffter and the Student team, setting realistic goals for the time period they had. The planning has been added as Appendix B.

The student team worked on each pillar one by one. They had a brainstorming session, where all ideas were noted down and the interesting ones for the whole team were picked and worked up as a concept. They formulated interview questions for their concept and held around 10- 12 Depth Interviews with target users (~3 user interviews per team member) to brainstorm concept ideas from users as well as build upon the concepts developed by the team members. The main motive of using users even for the concept brainstorm was to completely avoid any self-referential concepts that the student team comes up with.

After the interviews were completed, the team would meet again and have a brainstorm session to finalise a solid concept for that pillar and formulate an elaborate survey which helps in validating the developed concept with wide range of users (~50 participants). The survey results were analysed and discussed with the company. This method was followed for all the three pillars. At the end of the project, the team had received inputs from more than 200 users for all the three pillars combined.

Chapter 4: Business Research

Graffter relies on augmented reality technology that exploits different state of the art computer vision techniques that are proven to be useful over the years. Augmented reality is in the “trough of disillusionment” region on the Gartner hype curve as of July 2018¹, which means the hype of the technology is going a bit downward and the expectation from this specific technology is decreasing before it reaches the “slope of enlightenment” region in the next 5 to 10 years. Augmented reality started off with a “bang” among not only the tech lovers but also general people and had sky high expectation from everyone. Unfortunately, in time, it did not meet the high expectation yet and as a result the hype of this technology is going downward recently. On the other hand, the according to the hype cycle, it can be easily said that, the expectation and deliverance of this technology will come to life again when it is being used properly to bring unprecedented value to the users as a result of great innovation such as Graffter technology.

The research problem of our case is divided into three different pillars. We would like to find the answers to these research problems not all at once but through a step-by-step approach. The three different pillars are described below in order.

4.1. Pillar 1: User Engagement

The first research problem we are trying to solve is to get an exact overview of the potential users’ perspective of the existing technology that is augmented reality and try to know what are the key elements that the application should have to grab the initial attention of the potential users. For simplicity, we are working with only one user group in mind that is big enough in the sense of quantity of users and also easier for us to verify and validate our assumptions. We are conducting our business research only among the students. During our research, we concluded that, the initial engagement towards a mobile application is extremely important. Because for a new technology, the initial users (early adaptors), although they are few in numbers, will be the reason for the next mass adaptors to follow. Hence, the first segment of our research problem is purely dedicated to the initial user engagement.

In this pillar, we tried to validate our different assumptions that we narrowed down during the market research interviews and brainstorming phase. We tried to understand what key points might make the potential users interested and excited

¹ <https://www.gartner.com/smarterwithgartner/5-trends-emerge-in-gartner-hype-cycle-for-emerging-technologies-2018/>

to be engaged with this application. For example, we validated that a sense of achievement is needed to be implemented within the application and we tried to understand how and in which form it can be associated with the application.

Furthermore, gaming experience can play a major role as long as user engagement is concerned. A certain high level of gaming experience was expected from a large number of potential users who are more or less into video games during the validation phase and it was found that the sense of completion would make the users more inclined towards using the app over and over again. On the other hand, another large portion of validation data showed that the sense of achievement is the sense of completion to some potential users. In that case, having a virtual map of the visited and conquered places or landmarks was expected by the users. In short, we validated that there must be some element in the application that depicts the sense of achievement for a user and that element will be the reason for a user to be engaged with the application.

4.2. Pillar 2: Content Creation and Privacy

The vision technology developed in the company is spectacular and has great potential, but we know that cool technology has to be put to good use to make a business out of it. The business solution of Graffter is feasible but since it is mobile application, more exciting features should be included, we strongly believe. Therefore, our second pillar concentrates on content creation and privacy issues as this application needs to provide a great user experience.

In this pillar, we validated our assumptions related to the contents that the users will create and share or see others' contents on the facades and landmarks. We tried to understand how the potential users think of real-time content creation and its association with the facades. We validated that creating contents at the location of the façade has its own essence which gives Graffter the unique experience for its users.

According to our research, the application should also allow the users to upload non real-time media from their devices but the user should have an incentive to do the former and the incentive could be a reward in form of experience points or in-app currency, GCoins. As per the privacy issues, we conducted our research to understand what the potential users think about the accessibility of the contents.

In addition to that, we tried to reach a conclusion regarding cross sharing contents through other social media platforms. The validation pertaining to integration of Graffter app with existing social media platforms is still in a grey area as the results we obtained are vague and in need of further validation by the company.

4.3. Pillar 3: Campaigning and Consuming Content

Our third pillar of business research is related to how the company can associate different campaign methods in order to maintain a financially stable business model. This pillar concentrates on user studies related to how potential users perceive campaigning methods and the things that they like or dislike about them, such as advertisement.

In addition, we tried to understand from the study how the application can exploit its features to make the users share their experience to other non-users to engage them into using the application, hence increasing the user base.

We tried to understand how people feel about the generic approach of advertisement that they see in their everyday lives while using the internet and tried to tailor our recommendations for the company accordingly. We validated what makes people influenced towards a product or a service from the ads and how we can use that finding to make the campaigning experience better for the Graffter users.

Additionally, we also tried to understand how people share their experience with the specific application with their peers that in turns increase the number of users of the application. We exploited these findings in order to formulate relevant recommendations for the company.

4.4. The Best Practice

In order to verify and validate our assumptions regarding the research problems at hand, we directly interacted with the potential end users. In our case, we narrowed down to one particular set of users (students) mostly aged between 21 and 28 years.

For each pillar, we conducted a threefold process to identify and validate our assumptions. At first we brought forth the assumptions during our meeting with the team. With those, we directly interviewed potential users in order to brainstorm with them and bring out more ideas from the potential end users based on the previously formulated ideas, because we strongly believe that since the application is for them, they are the best subjects that we can exploit to make the best results out of it and to solve our business research problem. After the interviews, we summarized our findings and created one online validation survey form for each pillar.

The online validation surveys acted as a quantitative data collection as we tried to extract useful information from the statistics of the data that we obtained. On the other hand, we also conducted a qualitative data collection by directly interviewing the potential users to validate our quantitative analysis.

4.5. User Study and Persona

Since our business research is based on the perspectives of potential users/customers, it is important to understand the profile of the users on whom we are conducting ours surveys to gather relevant data in order to finally obtain a feasible and desirable outcome for the research questions at hand. For simplicity and logical reasons, we conducted our studies mostly among one specific user group, students aged between 20 and 30 years of old. After consulting with our company supervisor, he also agreed that his largest active user group would most likely consist of students, since they easily pick up new technological applications and are eager to try out new technology. During the study, there are some unique cases that the responders are not of this user group but more than 90 percent responders were students.

Chapter 5: Business Proposal

The preliminary idea driving the Graffter case study is the involvement and engagement of customers/users at the street level in the advertisement economy; where a person interacts with the digital space using his/her mobile device as an interface terminal.

The project is based on the problem of revolutionizing the visual experience from the perspective of a user, while at the same time improving the user participation to improvise that experience, by different mechanisms. Also, this project addresses another perspective which concerns businesses/brands as well as the city governments, making use of an urban, technology-friendly population to develop a collaborative business model to make the most of the interactive digital spaces for varied purposes.

The customer base of Graffter is mostly focused around tourists, students and low to middle aged working professionals based on the surveys conducted by our team. This involves catering the users to create digitally versatile content as well as mechanisms to help them consume this digital content in a way to boost the digital ad economy.

The preliminary product potential comes from the users on the street and the city tourists of a particular city. The objective is to understand and define the mechanisms to engage the end user in a cultural and tourism scenarios sponsored (in some cases) by brands.

The value proposition of the company focuses on transforming the building facades into digitally versatile communication channels. For this, Graffter incorporates the use of Augmented Reality via the Graffter App. Using this technology, the company focuses on recognizing, in a natural way, (different angles, luminosity and distance) the façades of the cities, and to be able to locate, with highest accuracy, virtual contents at those façades.

Based on this MVP, we conducted our research to help exploit the right market for the Graffter technology. For this, the business research was carried under three foundational pillars as aforementioned. For each of those pillars, we have had conducted the research interviews and surveys to gather the myriad of possibilities that could be potential additions to the Graffter application to achieve the aforesaid business mechanism. Once the appropriate features were jotted down, these were then put under validation interviews and surveys (for each of the pillars) to consolidate the opinions based on a consensus. From the the three research and

validation interviews and surveys we eventually were able to infer that there wasn't one dominant opinion for the domain of application the users were interested in.

Based on if the user is inclined more toward the gaming experience or the social media experience, the potential solution can well be a standalone application or an integrated application with other platforms respectively. For this particular reason, we suggest there could be a broader research carried out by the company based on the requirements and to channel down on which of the two paths to take. While there are a dominant number of users from different walks of teenage and student life who are into the gaming experience and want to see the application incorporate features which revolve around gamification of facade digitalization (involving capturing of facades, competing for ownership of facades and receiving incentives), there are also significant number of users who belong to the more professional and commercial aspect of using applications. For instance, travellers, bloggers, models etc. who feel the sharing aspect of the application can well be exploited to forward interests, campaigns and promotions.

For such group of users it would be a wise step for the company to consider an integrated approach of the application with a third party platform viz. Instagram or other media heavy platform.

Also, besides this main mechanism analysed by our team there are other features inferred from the survey which are recorded as the recommendations in the following chapters that conflate the end results (not dedicated, but convincing) for each of the three pillars of the business case.

Chapter 6: Discussion

As is the case in any project, there are always influences and limitations. However, these limitations need to be addressed in order to properly understand how the final conclusions and insights came to be. Therefore, this chapter has the purpose to list the different limitations within this research as well as address some risky assumptions that have been made that need to be tested within the near future.

6.1. Limitations of Research

There are a couple of limitations that need to be addressed within our research. First, market research interviews were conducted to establish a basis for the brainstorm session. This means that the input provided by these interviewees had a large influence on the direction of the project. We interviewed people within our own network: if other researchers had performed the same interviews, they could have received different opinions. Moreover, a brainstorm session always has different outcomes dependent on the researchers and external influences such as time of day and mood of participants.

However, this is as much a limitation as it is an opportunity: if the same process was repeated with different researchers, new concepts could be created.

For the survey validations, we aimed at having at least 50 respondents per pillar. This was achieved. However, in general, if more people had participated within the survey, more accurate information could be provided.

For both the market research interviews and the validation interviews, two to three people were interviewed by each researcher per round. If an interview had been done in depth, an interview could easily last up to an hour to receive all the input and brainstorm about ideas. Therefore, the total amount of interviews done per researcher were limited. We do feel that this resulted in high quality interview results. However, as stated before with the survey, more interviewees would provide more accurate results. When interviewing fewer people, conclusions can be drawn more on personal preferences than on the general opinion. In order to overcome this problem, it was aimed to only include the survey (or quantitative) results as the overall opinion and recommendation and the interview results (qualitative) to provide useful insights or possibilities to explore further.

Moreover, the survey was created with the unknown user in mind. However, some users indicated that not all the statements were clear or if all the questions were well formulated. Unfortunately, this was only discovered after the deployment of the

survey. However, these were incidental comments and a majority of the users seemed to understand the questions.

Since a questionnaire is distributed through the internet, everyone was allowed to answer the questionnaire. Even though the graph shows many of the respondents were still students, some people were not. However, we are unable to filter out the people with different occupations. Moreover, they might have provided useful insights. However, this does mean that the survey was not always completed by students, who were the initial target group.

6.2. Risky Assumptions

There are a couple of risky assumptions within the concept that need to be validated. If it turns out that these risky assumptions are not true, some other aspects of the concept are affected and some aspects need to be reconsidered. Within this project, we found two highly risky assumptions that should be tested, namely the willingness of people to spend time on scanning facades as well as the willingness of people to consume advertisement content.

6.1. Research on willingness to spend time on scanning facades

In order to add facades to the game and in order to conquer buildings, users have to scan the facade. Right now, this takes a considerable amount of time (namely about 3 minutes). The Graffter team is working hard to decrease the amount of time needed to scan the building, but it will take time nonetheless.

However, if people do not want to spend any time to scan a building, no facades would be uploaded to the game. Therefore, it is a risky assumption that people are willing to spend a certain amount of time to capture buildings.

In order to test this assumption, we have created several hypothesis and provided a testing method. In order to increase the willingness of spending time to capture buildings, we have added possibilities such as showing entertainment or a progress bar which could help the users become more patient.

Hypothesis 1: Users will willingly spend 2 minutes to capture a building if there is a form of entertainment present (e.g. video)

Hypothesis 2: Users will willingly spend 1 minute to capture a building if there is a visual representation of a progress bar.

Hypothesis 3: Users will willingly spend 30 seconds to capture a building if there is no form of entertainment or progress bar present.

For this test, many different people need to be asked to capture a building under different circumstances. The test groups will be the following:

- A. Three minutes with entertainment video
- B. Three minutes with progress bar
- C. Three minutes without entertainment video or progress bar
- D. Two minutes with entertainment video
- E. Two minutes with progress bar
- F. Two minutes without entertainment video or progress bar
- G. One minute with entertainment video
- H. One minute with progress bar
- I. One minute without entertainment video or progress bar
- J. 30 seconds with entertainment video
- K. 30 seconds with progress bar
- L. 30 seconds without entertainment video or progress bar

Since the capturing of buildings will most likely not be quicker than 30 seconds (not technically feasible), this is the shortest amount of time that should be tested.

For each test group, a minimum of twenty to thirty people should be tested. The test subject should not be in more than one test group.

Since people will be using this application on the streets, it is recommended to perform this test on the street as well. The incentive for people to perform the user test can be discount vouchers for nearby shops and stores (possibly partners of the Graffter application).

6.2. Research on willingness to consume advertisements

An important aspect to the application is the business model and the integration of advertisements. However, it is a risky assumption that someone will willingly open an application to consume advertisement content.

Therefore, it is important to test how much advertisement content people are willing to consume in regards to time as well as relevance: if people are looking at advertisements longer and/or interact with the advertisement, there is a higher chance that businesses are willing to invest money into the application to show their advertisements.

We have created several hypothesis which need to be tested:

Hypothesis 1: Users are willing to spend 3 seconds on advertisements that is not relevant to them.

Hypothesis 2: Users are willing to spend 5 seconds on advertisements that are relevant to their location.

Hypothesis 3: Users are willing to spend 7 seconds on advertisements that are relevant to their interests.

Hypothesis 4: Users are willing to spend 9 seconds on advertisements that are relevant to their interests and their location.

This test will require a test set-up. Users need to be questioned about their interest and the test needs to be adapted to them. The user is placed behind a computer and will watch different advertisements. At any time, the user is allowed to click the advertisement away. It is important to observe the focus and attention of the user as well as the time they allow the advertisement to play. Users should be exposed to advertisements that fall into the four different categories as described by the hypothesis.

In order to gain useful knowledge, the test should be repeated about thirty times with different users. Since students is a large target group of the application, it could be possible to give this task to students: testing setups can be created at a University and they have access to test their fellow students. The incentives for students to join could be a discount voucher or a treat in the form of a snack.

Chapter 7: Recommendations for the company

During the project, we analysed and evaluated each pillar separately. Therefore, we can provide recommendations to Graffter for each separate pillar. When evaluating a pillar, we conducted a survey as well as validation interviews: the survey was used to gain a perspective into the overall opinion of potential users, whereas the validation interviews had the purpose to provide useful, and sometimes creative, insights into what other possibilities could be integrated within the specific pillar. The recommendations are divided into three different sections, based on the pillar division. Moreover, a section has been added about further research that can be conducted.

7.1. Recommendations Pillar 1

Pillar 1 was all about user engagement: how to get people to conquer facades and help build up the database of Graffter. There were several conclusions that could be drawn from both the survey as from the interviews, which can be considered recommendations in future development of the concept. A summary and the complete results of the survey can be found in Appendix D. The summaries of the validation interviews can be found in Appendix E.

7.1.1. Recommendations through survey validations

The survey suggests that Graffter should implement leaderboards to show both their local as global leadership position. The company should validate further if the implementation of social media leaderboards are desired, or they could add this as a choice for the user.

Graffter could implement the gaming feature of giving users experiment points. These experiment points can be linked to levels: users would need to acquire a certain experience level in order to be able to conquer a building.

The ownership of the building can be done in two ways: either the user keeps the building until someone else “overthrows” them, or the user could maintain the building for cumulatively amounts of time by performing certain actions.

Users were very enthusiastic about having a form of protection for their buildings and were positive about creating and joining armies to overthrow other users.

Graffter has already implemented a virtual map, and it has been validated that users would like to see:

1. When buildings are free to conquer
2. When buildings will become available to conquer (based on time or experience level, depending on the concept chosen)
3. Previously owned buildings
4. Buildings the user currently owns
5. Armies that could be joined to overthrow other users.

It is our recommendation to further develop a concept where people can conquer buildings that are already owned by other users, since this seemed like an interaction the potential users were highly interested in. Moreover, they would like to be able to acquire some form of protection that would allow them to keep the building longer.

7.1.2. Other Recommendations through interviews

Through the validation interviews, some interesting features came to light. Due to time constraints, these features could not be added for another round of concept validation, but they could inspire Graffter for new concepts:

1. Owning a limited amount of buildings: this would encourage users to let some buildings go when they acquire new ones, meaning that there could be a quicker circulation of building ownership
2. Creating a more positive outlook on dragons and armies to defend or attack buildings
3. Adding the feature that the person with the best strategy will conquer the building instead of it being lottery based (who clicks the fastest)
4. When someone ‘buys’ protection, they cannot be overthrown for a certain amount of time, ensuring their ownership.
5. Earning experience levels through conquering, owning and helping others overthrow.
6. Incorporating strong visual effects in combination with competition: showing the actual defending of the building in the AR application.
7. Incorporating a wish-list within the virtual map.

7.2. Recommendations Pillar 2

Pillar 2 was focused on the creation of content and how people would deploy the content. Moreover, several privacy issues were addressed. There were several conclusions that could be drawn from both the survey as from the interviews, which can be considered recommendations in future development of the concept. A summary and the complete results of the survey can be found in Appendix G. The summaries of the validation interviews can be found in Appendix H.

7.2.1. Recommendations through survey validations

The users were very divided on the statement that content should be created at the location itself. A small majority was against this statement. Almost all users prefer to be able to upload any content which does not need to be created at the location of the building. However, if Graffter would like to motivate people to create content at the building site in order to stress the added value of location, they could award extra experience points to those who do.

In regards to privacy, the user would like to have control who can see the content they have uploaded, but they also highly agree with the statement that everyone should be able to see all the content. Therefore, this is contradictory and should be investigated further.

Users would like to share their content to other social media platforms. Users were divided on the statement that content can only be shared when it is visualised on the building, underlined with the comment that users would like the option to share visualised on the facade or the content on its own.

The survey answers suggest that the user should be given many options (what content to upload, who can see it and how to share it). Even though giving users many options within the platform is very good, it could also make the application less distinct from others. Therefore, our recommendation is to think about which direction the application will be developed. In general, users are enthusiastic and see many possible features and options for them to be free in the application, if this is also concurrent with the development of the app. This will be further discussed in section 7.4. when we talk about future research to be conducted.

7.2.2. Other Recommendations through interviews

Through the validation interviews, some interesting features came to light. Due to time constraints, these features could not be added for another round of concept validation, but they could inspire Graffter for new concepts:

1. Upload content should be related to the location of the building (perhaps also for advertisements)
2. Being able to upload content from another location (especially for advertisements)
3. Only owners can post content on the building
4. Being able to post a status message to other social media platforms when you have conquered a building (with content attached)
5. Allowing content to be viewed by everyone will make it different from other social media platforms (if it were to be a stand-alone application)
6. Allow users to create 3D visuals (and other fun contents) when content is created at the location of the building

7.3. Recommendations Pillar 3

Pillar 3 targeted campaigning and the consuming of content: what would make someone actually click on content? There were several conclusions that could be drawn from both the survey as from the interviews, which can be considered recommendations in future development of the concept. A summary and the complete results of the survey can be found in Appendix J. The summaries of the validation interviews can be found in Appendix K.

7.3.1. Recommendations through survey validations

Users have a strong opinion on quality over brand. Moreover, they highly value their friends opinion and are more influenced when friends endorse them products than when celebrities do. This provides a useful insight to thinking about advertisements differently: is there a way to advertise through friends?

Almost all users prefer personalised advertisements over generic ones and even more were interested in advertisements related to location. A combination of both could provide very useful and interesting advertisements (which could also benefit communities through advertising local restaurants or shops).

People are willing to invite their friends if they enjoy the app, but will slightly easier invite their friends when they receive something in return.

Users would slightly like to view and interact with the content on buildings when they are not physically at the location.

Our recommendation is to think about how advertisements should be distributed, but also what advertisements could look like. What if friends can endorse products (or advertisements) to their friends through this application, what if advertisements

are both related to preferences and location. Moreover, we encourage Graffter to create rewards (such as experience points) for users who invite their friends.

7.3.2. Other Recommendations through interviews

Through the validation interviews, some interesting features came to light. Due to time constraints, these features could not be added for another round of concept validation, but they could inspire Graffter for new concepts:

1. Having a building you could follow and see all the content displayed on it
2. Allocating themes to buildings: making it more interesting to follow specific buildings
3. Only allow the application to access the GPS of the phone when the application is opened by the user
4. Setting a radius for the location-based advertisements (e.g. any advertisements that are relevant within 5km)
5. Only allow users to interact over distance with the content of the facade if they are the owner of the building
6. Users have to give their likes and interests on which personalised advertisements are based
7. Integrate daily login bonuses (e.g. experience points)
8. Integrate notifications customised to interests of the user
9. Advertise educational interests to help users learn more (or other) skills

7.4. Further research to be conducted

Besides the recommendations that could directly be formulated through the research, there were also some other recommendations that came to light during the process of the project.

The first recommendation is to conduct the experiments to test the risky assumptions as described in section 6.2. In order for the overall concept to work, it is important that these risky assumptions are validated and some concluding parameters (on time, etc.) can be set.

During the three pillar validations, we would always ask users (both in the survey as in the validation interviews) if they would prefer this application as a stand-alone application or integrated within an existing social media platform. The opinions on this statement were strong, but extremely divided. Where some users would claim they did not want to add another social media platform and felt it should be

integrated, others did not want another application linked to a platform that owns much of their information. Moreover, they felt that a stand-alone application would feel more privacy aware and that the application itself would feel stronger. However, since the division on the statement was so strong in all of the validations and the opinions on the matter were strong also, we strongly suggest to further investigate the opportunities as well as the advantages and disadvantages of either option. If this decision is made quite early, it is easier to target your actual potential user group (people who would like this as an added feature and integrated in another platform, or people who would like to use this as a stand-alone application).

Moreover, since the company would like to obtain as many possible concepts for the Graffter technology as they can, it would be wise to present this business case to a new group of students. Seeing as the final results of this project were very dependent on the researchers and the people who participated within the interviews and surveys, a new set of researchers and participants would probably obtain a whole new set of concepts Graffter could work with.

Appendix A: Team Experience and Lessons Learned

7.1. Joseph D'Souza

This was my third of a kind project involving pitching of a business solution. That said this was more challenging and exciting considering the fact that there was an actual ICT related company we had to develop the business solution for. More exciting was the new initiative taken by the course coordinators this year to get students working in tandem from two different nodes remotely. This, as much challenging and demanding as it was, also helped me personally learn to coordinate between my team members and made me learn the importance of group meetings and brainstorm sessions to seed an idea and come up with a potential solution out of it. We had teams randomly assigned with two students from Polytechnic University of Madrid and two of us from University of Trento and I really appreciate the team we made as each one of us was enthusiastic and positive from the very start of this endeavor and throughout all the sessions we conducted remotely. It was really grateful of our teammates in Madrid who took feedback sessions from Miguel who represented the company and guided us on how to go about sorting down the requirements and working on individual aspects of the solution to come up with a working mechanism for the theme of the project.

From the first week itself we had a working plan in place for the coming weeks, which made our schedule pretty much sorted and clear for the entire duration of the project. I honestly learnt quite a lot from the approach we took toward the business solution, from channeling down the requirements into different pillars which displayed the different notions of the final solution, to working on each one of them to brainstorm, receive feedback and finally consolidate the end result for each pillar. The retrospective feedbacks from our interviewees and Miguel made it a refined process and the end results looked pretty convincing, both to us and from the business point of view.

Overall, the whole experience of taking a business case for an actual firm and over the weeks developing over the findings and analysis was quite a lesson and it was genuinely appreciative of the firm to have trusted us with this opportunity of being able to deliver a solution for them. I would personally appreciate all the lessons and experiences I have taken away from this initiative.

7.2. Kazi Injamamul Haque

It was the first time I had the experience to have team members remotely working on the project. At first, I thought we would not be able to perform as good as the teams those are not in such a situation as we are, but it turned out to be different than what I initially thought. From the first week after the team was formed, we were efficient regarding the meeting timing and the deliverables. Although at first there was a little miscommunication among the team members regarding the tasks we needed to complete, we immediately solved those and as we became familiar with our own processes of working on the project, it was very easy to carry out the tasks that we designed for each of us maintaining an effective communication with our remote teammates. We had weekly meetings as form of online video/audio conferences that made sure that we were on the track for the project. Furthermore, during the meetings we discussed about our accomplishments, findings and ideas. I strongly believe that these meetings, in turn, made others more enthusiastic and excited about the project. Our project consists of a lot of user studies, where we needed to physically interview people and observe their reactions while doing interviews. In addition, we had to conduct online surveys in order to obtain a quantitative measurement to validate our initial assumptions. These processes that we followed increased my ability to effectively communicate with the potential users. For example, it increased my perception of how to talk to the interviewees in such a way that I could extract most of the information that I need. In addition to that, I also learned how to make sense of quantitative data and draw qualitative conclusions based on that. The team dynamic was excellent in my opinion. The teammates were very helpful throughout the whole process and everyone in the team was greatly inspired by each other. As a result, we were able to obtain expected result for the project while learning a lot of things in the process.

7.3. Maaike Dokter

Overall, I feel that the project was well done and that the collaboration was in general very pleasant and fun. All of us really enjoyed the topic and the project was our first choice. This showed in the brainstorm sessions, where everyone was involved with lots of energy and motivation. Everyone thought it was fun to think of new concepts and possibilities and the brainstorm sessions were all conducted with a lot of respect.

Working together over distance proved to have their challenges, but also provided new working experiences. Since the company was located in Madrid, Pournami and I would conduct the company meetings every (other) week. However, the guys in

Trento were very motivated and asked if we could audio record the meetings so none of the information provided by the company was lost in translation. This proved extremely helpful, especially when the company would explain the technology in more details to us.

As the project evolved, the amount of meetings and time spent on the project would increase. Where, at first, we could manage with having Skype meetings once a week, it soon increased to twice a week with the exception of three times per week. Not only the frequency increased, the Skype meetings themselves rarely lasted less than one hour and sometimes touched a two-hour mark.

One thing that was not in our advantage was the quality of the network (I have spent many nights on the floor next to the router in order to obtain some internet): due to very low internet capabilities, we were resorted to Skype phone calls (without the video). Even though this does not sound like it would have a large effect, it is very difficult to hold productive and efficient brainstorm sessions without seeing the team members. During brainstorm sessions, it is important to interact with one another which can be easily done through facial and hand gestures. Moreover, whenever there were any disagreements, it was not possible to see who was not agreeing with someone and who was silent because they were listening or content.

Moreover, since there was no time slot in which all four students could be present due to conflicting schedules, we always were resorted to meeting at night after 21:00 (since classes end late in Madrid). However, this also meant everyone had already finished a tiring day. Even though everyone always tried to have energy and be amicable and active within the brainstorm sessions, it was sometimes hard to spend another two hours and generating creative concepts.

In my personal opinion, it would be better to have time during the day (perhaps have the same time slot for I&E classes in both universities) which could be used to have meetings: in these cases, on both sides, the students could have met up and only one screen would be necessary to communicate instead of everyone having their own. Moreover, we might have had more energy and creativity to really come up with outstanding concepts.

The roles within the group were automatically well divided. I am a very organised and structured person and took that role upon myself, which everyone seemed to appreciate. Moreover, the other students had their own strengths in summarising surveys, creating creative graphics and understanding which aspects would be important. We all think very differently, which helped us a lot during the brainstorm session. It must be repeated again, for it does not happen all the time, but everyone always communicated with tons of respect. I truly feel like I got to know my team members, which is unique and an accomplishment over distance.

What I learned most from the whole experience was how to gain insights from users in an efficient and productive way, as well as how to communicate with people from different backgrounds and cultures through telecommunication.

I did discover that I can easily lose side of the main points, meaning I get side-tracked or focus on things that don't require much focus or importance. Sometimes, I can get very passionate about things that don't matter. This is something I should become more aware of.

Whenever there were some disagreements between what to include in questionnaires or which concept we would validate, everyone would be asked to say his or her opinion, after which we usually handled a "majority rules" concept. In my opinion, this is not an ideal method but something that works when you cannot visually communicate with team members.

7.4. Pournami K Krishnakumari

First of all, the whole experience of this project was very intense, yet I had lot of fun working with my team and also had the chance to work on a very interesting topic. It was very interesting and a very new experience for me, to work with team members on such a huge project remotely. In the beginning I was a bit scared that we will have a small disadvantage compared to other teams based on this working from 2 different countries. But, once the team started working, there was an instant bonding that helped break the ice. The fact that the chosen topic was very interesting and hooking to all the team members made it very motivating for all of us, each members had an enthusiasm which motivated the others in a big way, at least for me. Another very interesting thing about the team was that, we were a multi-talented balanced team. We had people who had their strengths in brainstorming, designing, organizing, technical things and many more skillsets. This helped a lot in splitting and sharing the works. The company was in Madrid and we were meeting with the company at least once a week for giving them updates and getting feedback from the company. Due to the difference in time schedules, we couldn't find a suitable time slot once a week where all four of us were free to meet with Miguel. So, we had to plan it in such a way that the members from Trento had to listen to the audio clip of the meeting which we recorded. We met at least once a week with the team using Skype (there were some weeks where it even reached 3 times a week), this was the most difficult part of the project (especially because of the poor internet service at our home and university). But we managed somehow, but there were days when it was irritating at the thought that some works could have been done more efficiently if it was not done in person and not virtually. We had a very clear plan from the beginning of the project and this helped all of us keep in

track of the amount of work that needed to be finished and what is pending. The whole organised plan helped us a lot in keeping our goals more realistic and doable. Even though there was a huge distance between the team members, there was a very healthy communication between us, which helped us finish this project in a way that all of us were satisfied with the end result.

Appendix B: Project Planning

Week	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4
Start Project															
<i>Initial Meeting Team</i>															
<i>Initial Meeting Graffter</i>															
<i>Brainstorm Team</i>															
<i>Process Decided</i>															
<i>Planning Proposal and Initial Ideas Presented</i>															
<i>Engage User to Conquer</i>															
<i>Field Research</i>															
<i>Brainstorm Team</i>															
<i>Validation</i>															
<i>Present Ideas</i>															
<i>Create/Deploy Content</i>															
<i>Field Research</i>															
<i>Brainstorm Team</i>															
<i>Validation</i>															
<i>Present Ideas</i>															
<i>User Consume Content</i>															
<i>Field Research</i>															
<i>Brainstorm Team</i>															
<i>Validation</i>															
<i>Present Ideas</i>															
<i>Final Deliverable</i>															
<i>Writing report and recommendations</i>															
Continuous			7-11-2018	14-11-2018	21-11-2018	28-11-2018	5-12-2018	12-12-2018	19-12-2018			09-01-2019	16-01-2019		
<i>Meeting Graffter</i>			13:00	13:00	13:00	13:00	13:00	13:00	13:00			13:00	13:00		
<i>Meeting Team</i>			20:00	20:00	20:00	20:00	20:00	20:00	20:00			20:00	20:00		

Appendix C: Pillar 1 Market Research Interviews

Introduction: Augmented reality is displaying something on your screen that is not there in real life. It is virtually layered content on top of the real world on your screen. For example, on your snapchat you can add filters on top of your live videos. Imagine, if you have a smartphone application through which you ‘capture’ a building and something can be displayed on the building through AR:

1. Would you want to virtually own the Eiffel Tower?
 2. Would you want to go around the city to capture other buildings?
 3. What would you want in return for capturing buildings?
- What if we tell you that, if you own buildings, something can be displayed on it. Others can visit those buildings. And what if all of this is done inside a gaming experience?
4. :D Go crazy: what would you like to do?
 5. How would you like to interact with other users?
 6. And what if you could rent out the facade of your building for virtual money: can you think of a gaming experience where that could be a fun feature?
 7. What else can you do with your building to earn more virtual money?
 8. After we asked you all these questions, would you like to use this application?

Interviewee 1: I think owning the Eiffel Tower would be really cool! Yes I think I would go around the city to conquer other buildings, mainly as being a tourist in Madrid or Paris. I would also capture the Notre Dame for example if I were on a city trip in Paris.

Owning a building would be enough for me in return. But I would only do it as a tourist. Not in my own home town.

And what if this is done in a gaming experience? So like Pokemon Go? I am super enthusiastic, I think it is super awesome, I had no clue this was actually possible. First thought is that you could get likes, but that would make it like Facebook. No chat because that would make it a community thing and it should be a game. I would see photos that are displayed on the building that you can share.

Maybe it can be linked to Facebook and that you can see a la Pokemon go who has been at the building and who has taken a photo there. You can then receive a list and see those photos. You have to be at the place to actually see the photo. Real life Pokemon game, this person was there and this person took this photo.

Game aspect, say you go with a group of friends to Madrid on vacation, that you can make a group's game where you can make a challenge who can capture the most tourist buildings, the big tourist attractions. Everybody already makes photos, everybody throws it on Facebook now, but combine it with AR.

Premium photo you can only see when you are there. Through e-mail address also possible.

I would like to interact with others through likes, but when you take out chat, you put a higher emphasis on pictures.

What if you could make this a business? Own streets for a race game, then you can ride an extra parcour. So, for example, if you capture the streets you can play those parts within the virtual game. So by collecting more, your virtual world expands. Another feature could be to have billboards in the virtual reality, also part of the racing experience maybe. If you put it in the group game, maybe you can leave funny pictures for the others so when they come by they see it is already taken and you have fun since you can leave funny messages for each other.

I would use it. Yeah, sounds like a lot of fun! Curious to see what is actually possible though.

Interviewee 2: Owning the Eiffel Tower would be funny, yes I would like that.

Capturing other buildings depends on the effort it costs and how far away the buildings are. Also depends on what I would receive in return.

I love to collect, so for me a collectible edition of something would be great. I don't know if I actually need something in return. If it is a game, you should receive something that would help you progress within the game.

What if you could have a virtual avatar who could visit all these buildings. So like a real life sims adventure. For example, if you see the opera building, you can let them go there if they have enough virtual money to go. This will then be added to their story or life. That is also a nice way to look back at what you have done yourself or where you have been over time. Maybe you can then see on the display that your sim is inside together with all the other sims that are there at that time? And you can make friends during that time as well. Haha sorry, I am a big sims fan haha.

So, if we are talking about this sims thing, maybe you can see who else is inside and stuff like that. And then all of them will be added to the picture on the building, so basically a nice portrait that you also see I the create a family icon in the sims game. Fun to create portraits with strangers but only through avatars so not with your actual picture for privacy and stuff.

What if your sim could be the business owner and every time someone visits they have to pay you and then you can use that money to visit other people's buildings. Only thing is that you need enough visitors to get money. Or you need to have other ways of earning money as well, through the normal working and stuff you do on the sims. But could be fun.

I would definitely try it! Although the sims might make it a little more complex than you are aiming for, but I would love to have sims features in the real world with AR!

Interviewee 3: Idea: Was super excited about the idea.

Willingness to walk around the city: the idea is appealing enough to make me do it

Incentives: Paypal credits, coupons

Things that interests him: Scoring or Ranking system, virtual currency, users need to pay ticket money to access his facade, GCoins, get some incentive according to viewership of his facade by the content owners, posting his own content and sharing them to people far from the facade as well.

Maintaining the facade: He needs to pay some charge for owning the facade after a period

(First day is free, second day is maybe few gcoins or something else or he needs to got the facade physically to recollect it. If the second day he recollects it, he gets the facade for 4 days, after that 1 week, after that 1 month and after that 2 months and then he has to physically go to facade to recollect after 4 months). 6 months is too long. Renew per day, then per week and then per month. Increase gradually. Same effect as certain games. Fight to keep your facade with yourself.

In the app, show the expiration dates of facades near him.

Also free facades that have not yet been captured. It will be like a treasure hunt.

Gamification: Nothing new popped up, Pokemon Go came up. Same style as pokemon, go around collecting, fight with friends and sharing facades.

Use our app: Definitely

Interviewee 4: Idea: Was surprised and super enthusiastic about the idea. Wondered how that possible and felt it would be cool to have these facades and show it to friends.

Willingness to walk around the city: If i can collect these cool famous places and own it for myself and show my friends also about it, that would be persistent enough to do it.

Incentives: He didn't know what he wanted in return, a bit blank over that one.

He kept on bringing about the friend thing. He wants to show his status among his friend circle and show how he is doing and invite them also for interacting with his facade. He wants to connect with his insta and FB friends to see which all facades near him are collected by them and to see their pics rather than seeing strangers pics on these facades. He wants to see either his pics or his friends. Talked about ads, and he is like if it is related to the facade, he will be interested in putting that on his facade. He wanted FULL authority on the contents being posted at his facade. He also wanted to trade few facades near his city, which he can collect multiple times, to his friends from other city who can't physically be at his city.

Use our app: Absolutely

Interviewee 5: Idea: Sounds like an interesting thing

Willingness to walk around the city: Depends on the situation (if i am travelling and i have sufficient time to travel around, yes. Otherwise no.)

Incentives: Coupons, Free promotion of my business account in Insta, free souvenirs from the facade I own.

She was not interested in keeping the facade for longer time, handling it, that feels like that would take lot of effort. She wanted to collect as many facades as possible and make it like a world map coloring off or flagging countries or cities where she have captured facades. Maybe I can pass on my ownership of the facade to someone when I am done playing to someone else, leave it back for others to capture. Would be cool if we can have some cool filters with the graffter app camera, insta camera have certain kind of filters that are not available anywhere else. So that inspires me to use that camera at certain times when i want to post anything in insta.

Use our app: If its flexible and doesn't need much effort to handle the facades, then it will be an interesting app while travelling.

Interviewee 6: Yes sure he wants to own Eiffel tower. Share ownership: no sharing. Yes go around and own

Getting money out of it. Also recognition that he owns it. Other people knowing he owns it. He'll be cool. Yes I'm also inclined to display. But not, only photos, videos but personalized augmented reality 3d objects.

Customized version for the owner of the monument and the make it shiny for example. Freedom to personalize it anyway and every way. Share news. Eg: party here at 7 pm. Own advert. Great visuals matters. Go only with the preferred brand for renting out owned facades. Freedom to choose the brand. Per visit of the other users should pay. Per activities of the owned buildings. Augmented reality game within the owned building. Gaming experience will be awesome. Like a war system to own territory and buildings.

Yes he would of course want use the app. He already feels excited about ownership because the history of his travel and the places he went.

Interviewee 7: Yes. Sharing the ownership. Like leftist idea. Go around. And would be nice to have minigames to achieve the buildings.

Getting some discounts around the area. Display is too cheesey.

I would like to host virtual games around/in my owned buildings. People will come visit and spend cryptos to attend the games.

Yes I would like to install and use the app.

Interviewee 8: Yes. But no sharing with the others. I like the sense of ownership. Capture other buildings, if there's good motivation behind it.

I would like to have stunning visuals around my owned buildings. Visuals are important to me. If I get really cool visuals to customize my buildings, so that other users are amazed by my customization.

Game enthusiast. I would like to have a gaming experience. Like a competition to hold on to my owned buildings. If it's boring to own one, I would not want to use this app.

Yes, i would very much like to see this happen.

Interviewee 9: Yes, I would like to own it virtually. Capturing other buildings, yes, I'm a traveler by heart. I go around the cities anyway, so it there's something else I can do while exploring, I would like that.

If there's a nice structured history of the places I visited and owned structures, I would definitely use the app. Anything extra is just secondary to me.

As I am architect, I would love to see if I can personalize my monuments like I want it. Although it is not that necessary for me. I would probably not waste a lot of time

doing it. For me, travelling is important and having something like a memory from my visits is more important to me.

Definitely I will use the app.

Interviewee 10: There must be some kind of competition involved which could give the app a gaming experience instead of just rendering it as a digital tool

The owning of facades is a great idea but I would also like to have some kind of experience level associated with the capturing of facades wherein for a certain facade one needs to have a certain level of experience from before.

I would suggest to incorporate some kind of emotional element to the whole theme as the emotional aspect usually tends to appeal users more than anything else

There could be some kind of ranking of facades based on the number of visits made on that particular building or by the reviews the user.

Interviewee 11: The concept of AR is pretty hostile to me, but I do know how the technology works.

I'm not really a technological person but could suggest that the interface part of the application could be something that could be decisive to make it popular among the users.

I prefer minimum use of notifications from the app so if the features could be made more abstract and less interactive where in the user doesn't have to address a lot of activity over the application then that would be nice.

Appendix D: Pillar 1 Validation

Survey and Summary

Summary:

For validating our concept, we conducted an online survey with 16 questions related directly to our concept and we included some basic personal questions (gender, age, occupation, etc) to get some insight about the users attending the survey. We received 48 responses in total, in which 62% of the responders are male and 35% of them are female. The responders are mostly students aging between 23 to 27 years of old. 70% of the responders' leisure activity is travelling which is very important to us to know as this application's one of the main focuses is to attract travellers.

More than half of the responders said that they would like to see their ranking on both local and global leader-boards with the possibility of sharing it with their contacts on social media. People also responded that there should be a constraint of certain experience level in order to claim or conquer certain popular buildings that they will own and retain by competing with other users or just by paying a certain cost in GCoins, according to the majority of the responders. Most people agree that in order to extend the ownership, users will have to pay in GCoins or physically going near and capturing again. Virtual avatar for protecting the buildings for the users was strongly agreed by more than 50% of the responders, although some of them made a remark that in such case, the visual experience must be unforgettable.

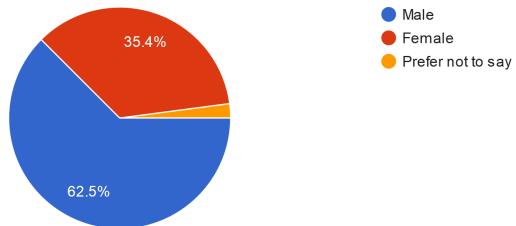
The idea of forming armies to overtake the owned buildings seems to be a great idea according to the users as majority of them responded positively in addition to the idea of gaining exp points whereas the initiator claims the building.

Furthermore, people showed positive responses towards the idea of the virtual map where they can keep track of different aspects such as, expiration of ownership, previously owned buildings, currently owned buildings, nearby unconquered buildings and the activities of other users regarding the landmarks. The responders has different point of views regarding the integration of this application with existing social media applications. 40% of the responders want this as a standalone application, 30% of them want it to be integrated whereas about 30% people are neutral.

The detailed analytics are shown below in addition to some useful remarks made by the responders.

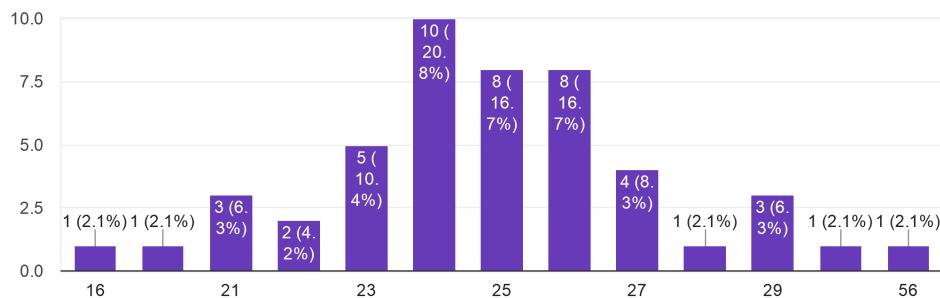
Gender

48 responses



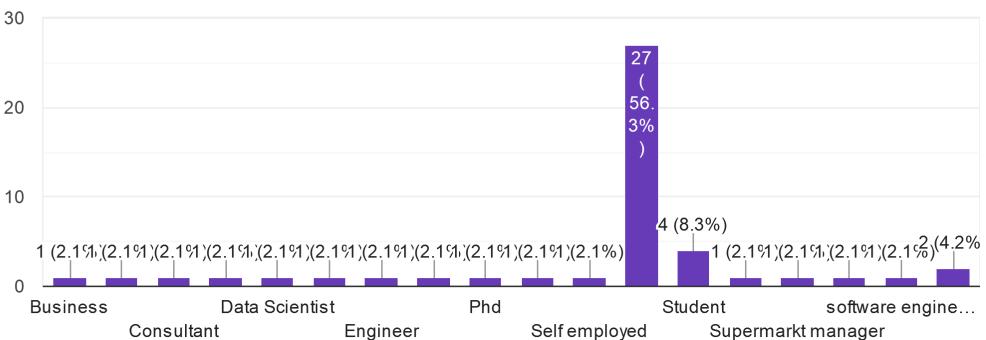
Age

48 responses



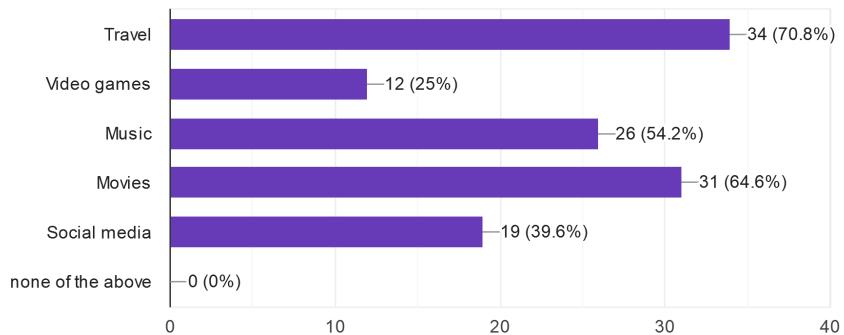
Occupation

48 responses



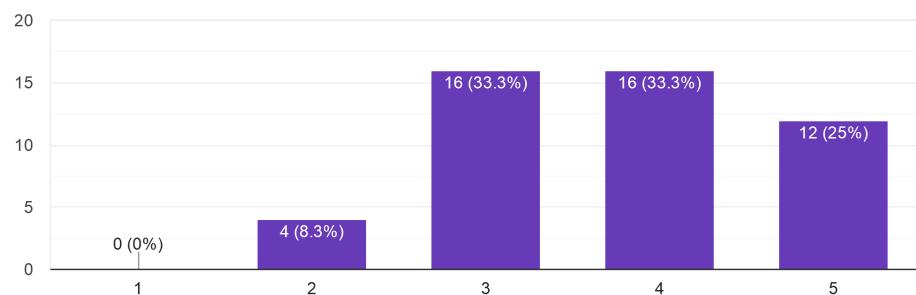
Leisure time activity

48 responses



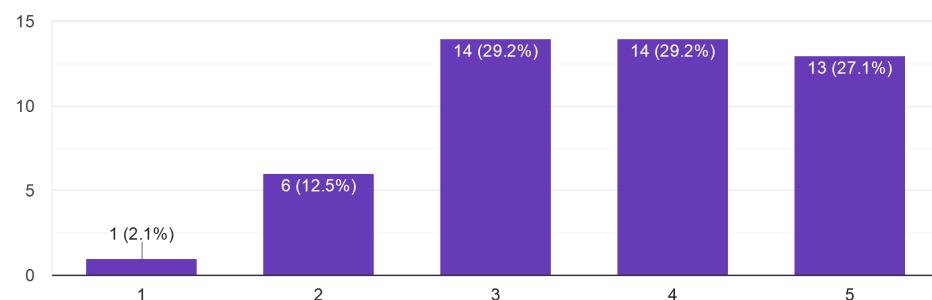
I would like to see my ranking on a local leader-board.

48 responses



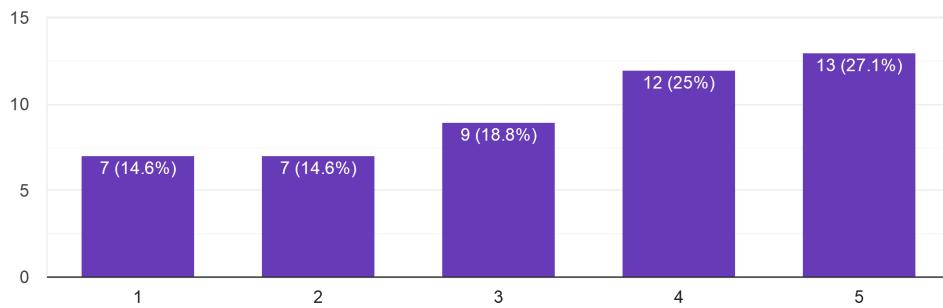
I would like to see my ranking on a global leader-board.

48 responses



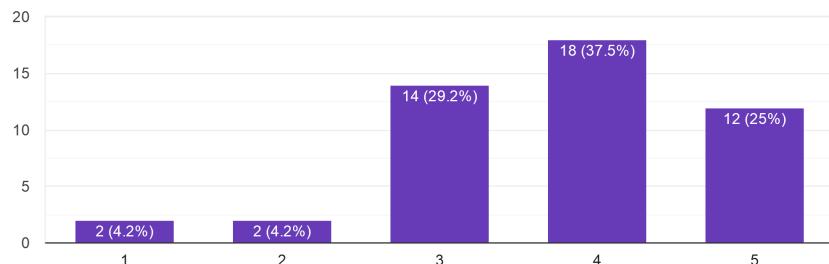
I would like to see my ranking on a social media leader-board to be able to share it with my contacts.

48 responses



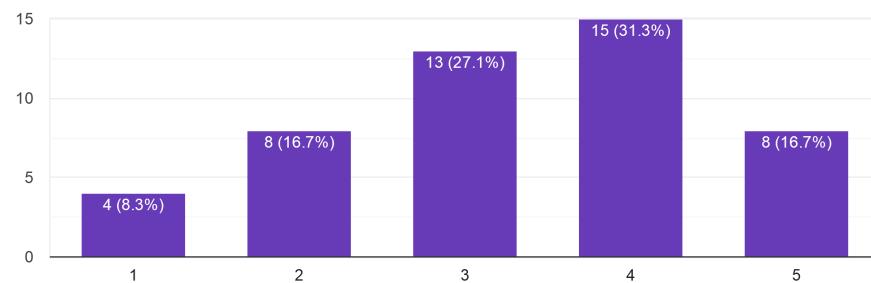
I'd prefer users to have a certain level of experience on the app to be able to capture a certain building with a certain popularity rating.

48 responses



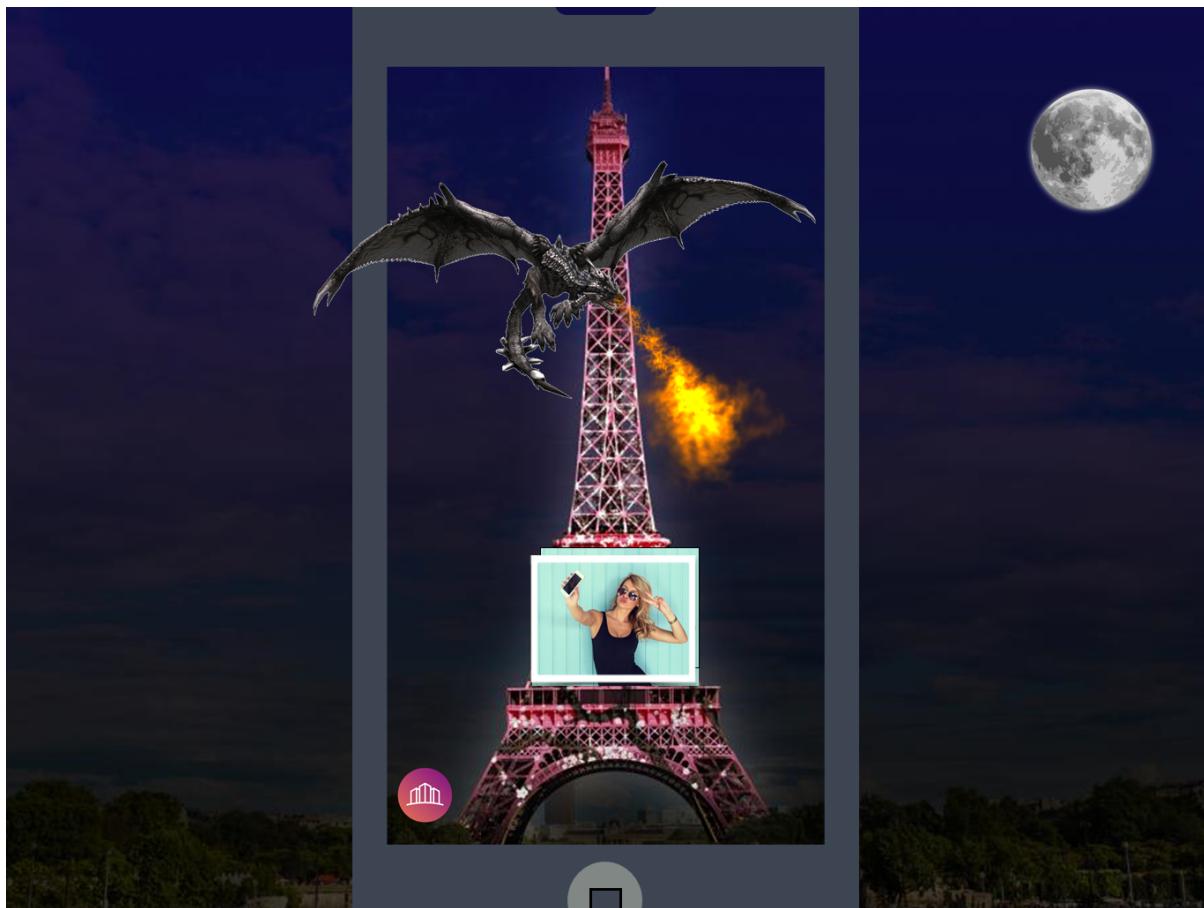
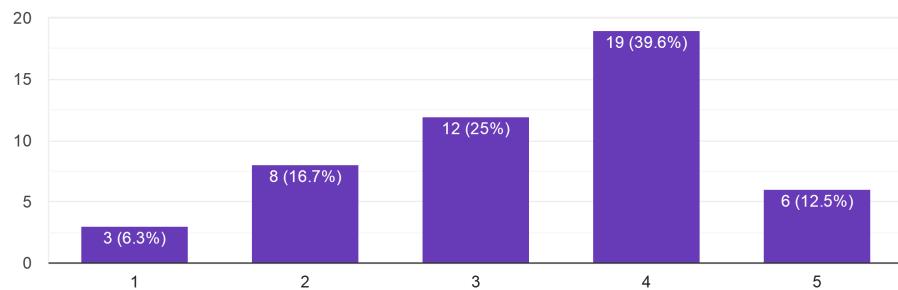
I would like to own a building for a day and then retain it either by competing with other user armies or at the cost of certain GCoins.

48 responses



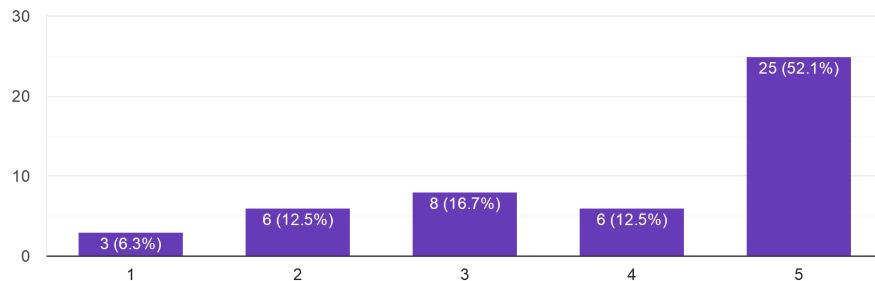
I would like to renew my ownership, first from days to weeks and then to months using GCoins or by physically going near the building to capture it.

48 responses



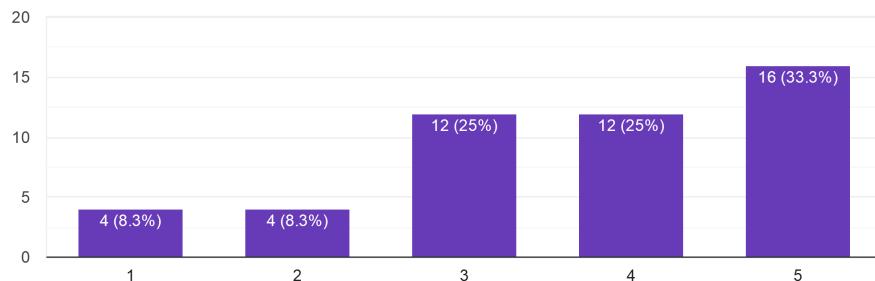
I would like to buy a dragon or any such virtual avatar that would protect my building.

48 responses



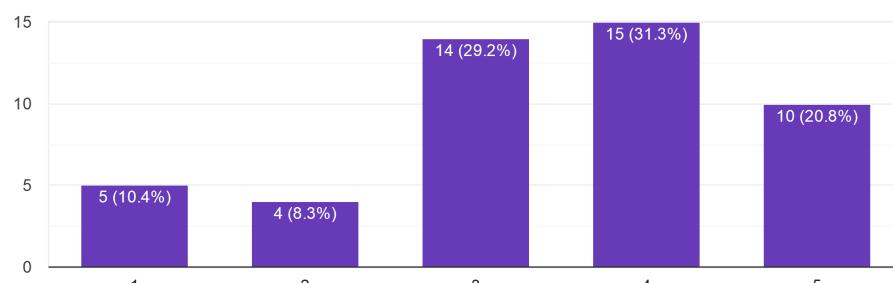
I would like to form an army to overtake the ownership of a building from a certain user.

48 responses



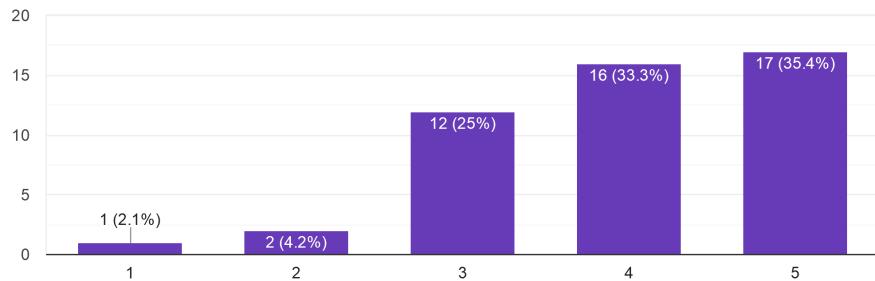
I would join a virtual army to gain experience points, knowing that the initiator of the army gets to capture the building after being overtaken.

48 responses



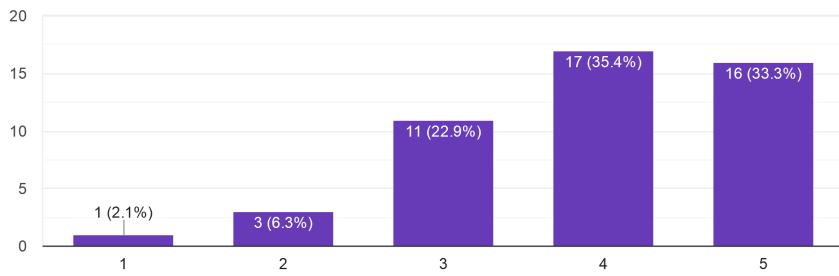
I would like to see the expiration date of buildings near me, in advance, so that I can form armies with other users to overtake it.

48 responses



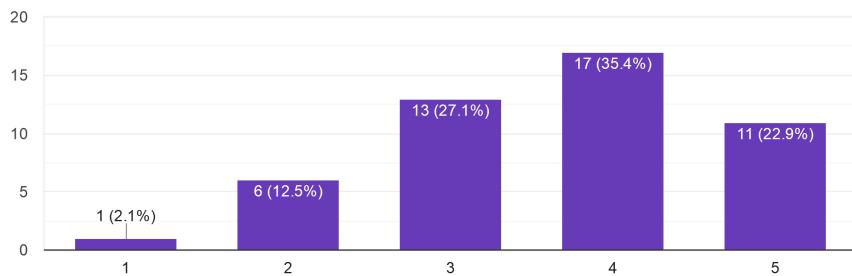
I would like to see an option on the virtual map that displays the expiration time of the ownership of buildings.

48 responses



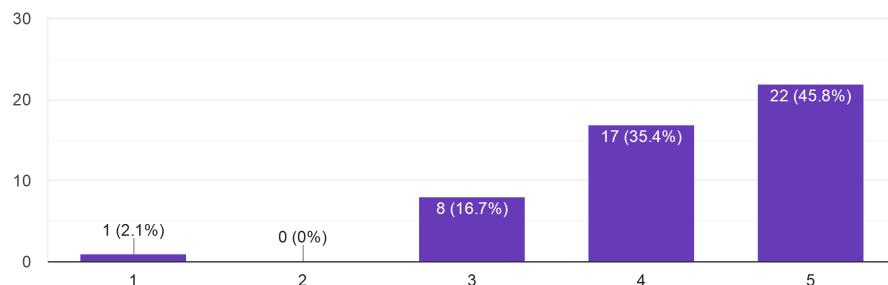
I would like to see an option on the virtual map that shows the buildings that I have previously owned.

48 responses



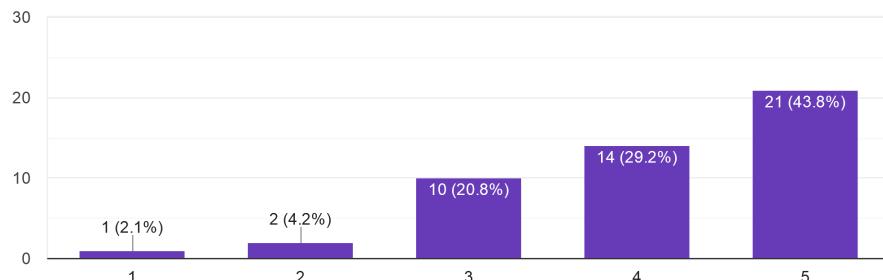
I would like to see an option on the virtual map that shows the buildings that I currently own.

48 responses



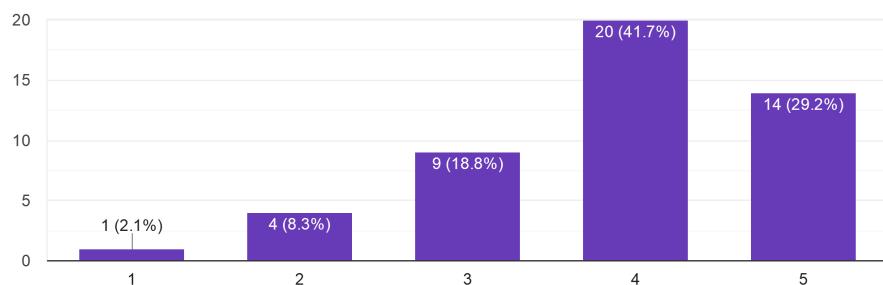
I would like to see a virtual map that displays which buildings are unconquered.

48 responses



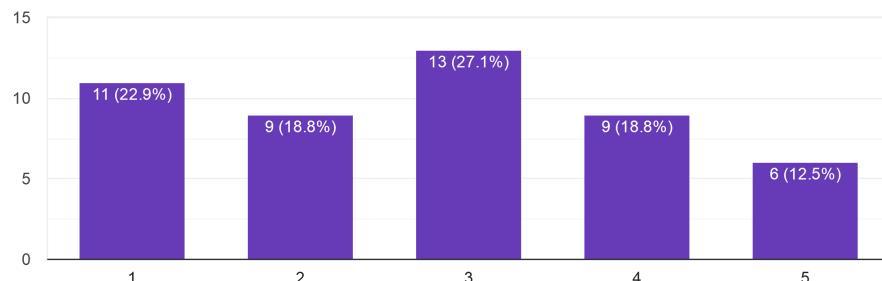
I would like to be able to scroll across a virtual map that shows where are armies, if any, being formed to overtake...ship of any user on a certain building.

48 responses



I want this as an integrated part of existing social media (e.g Facebook, Instagram) as opposed to a standalone application.

48 responses



Additional Remarks:

1. This form is annoyingly long
2. Thats a awesome idea for entertainment. I really loved it..
3. Good luck!
4. I would like to add the formation of guilds, and make at the end of each month a battle royale between the top guilds
5. I would not use this app, questions about what I would like to have in the app I answered pretending I would use the app.
6. The video was very vague and ambiguous. Did not help in consolidating the idea about the project. Survey jumps right into game specific questions when the idea is not still not very clear.
7. If this game comes out. It might create a revolution like Pokemon Go. But the graphics and animation must be as real as possible.
8. I'm not really a game enthusiast, so I don't know whether or not you can use my feedback - anyhow, good luck!
9. This app reminds me of Ingress, though I've never played that myself
10. The concept of armies is not clearly explained before the survey so that's a bit difficult to imagine. I don't like pay 2 win games, so maybe add that GCoins can passively be earned every 15 minutes by owning the building and keep the option buying vs physically near the building. Maybe add that expiration is gradually instead of suddenly. I don't like the part where the initiator of the army gets to keep the building. Maybe add that factions can play the game and that people can either join or create a faction, and then the faction owns the building. You can then work together with factions, where you'll both be owner and passive GCoins are

divided over every faction member. You can then have a faction treasure chest where everyone can donate gcoins to which can be used on buildings. You can also add that defences can be added. Maybe you'll earn new free defence abilities when you level up (and the longer / more buildings you own, the more xp you get). I like the idea, felt inspired, sounds a lot like ingress (although I've never played that). Good luck.

11. Interesting!

12. besides just "owning" buildings it might be nice to have a "checked" factor of all the buildings I've seen. Would be a nice thing for travelers competing for who saw the most landmarks and sights anywhere in the world, and have rankings for that

Appendix E: Pillar 1 Validation Interviews

1. Scoring/ ranking - local leaderboard, global leaderboard, social media leaderboard
2. Experience levels - unlock buildings to be captured
3. Ownership period - day, week, month (action or payment), after it is done it is up for grabs (you can also let a building go, you gain gcoins)
4. Competition - buy protection (e.g. dragon) at cost of gcoins, form army to overthrow building, initiator of attack earns facade, rest of army earn experience points
5. Show expiration time of buildings
6. Virtual map - see buildings you own/Previously owned and which buildings are up for grabs/ where armies are formed

Interviewee 1: This interviewee does not play many video games and is worried that such a game might be “too addicting”. He thinks having a ranking in place is handy, but he does not care much for it: if he were to play the game, he would play it for himself. He thinks adding the experience levels is absolutely necessary to make the game realistic: playing the game for a longer time should be paired with a reward of some sort, which would in this case be a higher experience level and the ability to capture more buildings. A game needs a degree of build-up and he thinks adding the experience levels would do just that.

Ownership should never be related to a time slot: he says it should be just like war games where you own a building depending on your strategy to defend or attack it. He added two interesting points: you could have a set limit for buildings you own, meaning you would more likely give up ‘lesser’ buildings for coins and that there are enough buildings for everyone to capture. Also, he said that once you have reached a certain experience level, you cannot capture buildings of dry low levels in order to allow new players to capture buildings as well.

He likes the idea of the gamification using dragons. He would not show the war and we could possibly think of an alternative defend/attack game that has a slightly more positive idea. For showing the expiration time, he does not like that it would work as a kind of lottery when the building is released: he would like to have some

influence on the fact if he will capture the building or not instead of all clicking at the same time and one will be most lucky. He likes the idea of having a virtual map, as long as people can have sufficient options in their privacy settings: for example, if you want your friends to be able to see you, etc.

Interviewee 2: This interviewee plays a lot of games herself and she loves the idea of the ranking system. She would like to see all the of them: she does not care if she knows the people on the leaderboard she just wants to see how she scores amongst them. Sometimes, it is nice to see people from social media and their ranking, but only within the application itself: she does not want people who do not play the game to see her progress. And she prefers to just see nicknames: in the end, the person behind the player does not matter, just the competition and their ranking does.

She does like the experience levels and seems the added value of it for the attacks: if you want to get more experience, you can join someone's attack. This is a good incentive: they need you to join them to capture the building and you need the experience level to advance in the game. She had doubts about the ownership: what would it do with the rest of the players? Perhaps this can be more thoroughly thought out. (e.g. ownership unless attacked and perhaps having a limited amount of buildings you can have will have people let the buildings go willingly).

She likes the idea of having something to defend the building with. But, there needs to be a balance: if people can still easily overthrow it all the time, it might not be useful and she might not be interested in the long run to capture difficult buildings. Maybe, if you buy a dragon, the building cannot be attacked for one hour and after that the protection can decrease. This way, you have a certainty of owning the building for at least an hour. She likes the virtual maps and would use it to show off her progress (and to feel good about her progress if she is doing well).

Interviewee 3: This interviewee plays games regularly, but does not stick to one game easily. She does like the ranking system, because it adds some competition to the game. Just as the previous interviewee, she does not care about the person behind the ranking: she wants to see how she scores in comparison to others, but the person does not matter. Therefore, she prefers the local ranking and global ranking over the social media ranking. Moreover, you should always see your position on the list, even if you are #451: raising her rank by one would give her an amazing feeling and need to climb the rank even further.

She likes the idea of experience levels and she feels that there should be multiple actions that contribute to a higher experience level: capturing, helping in an attack and perhaps additional things so the user does not rely on one method to gain more experience. She likes the idea of ownership gradually increasing: especially if the

building is not that relevant to others, she would like to keep it more easily for a longer time.

She likes the idea of having to defend the building and having a way to attack it. However, the theme of dragons and armies was not something she had expected, so perhaps it could be in a more modern jacket. She likes the idea of having a virtual map: she also sees no point in not having one. Especially being able to view your history of owning buildings is something she really likes, since it also shows where she has been. This way, it could work as a travel log at the same time. Perhaps you can even attach your own photos to this so you see the location, the building and what you have posted there.

Interviewee 4: Leaderboard: I love the idea of using the leaderboard. But the type of it depends on the reach of the game, if I can interact with buildings and people from other cities or countries, I would love to have a Global one, otherwise local one would be more than enough.

Experience Level: Well I like the idea, many people come to these popular spots, so it's fair for the regular users of Graffter to actually have an upperhand in front of the new users. You earn the ownership.

Ownership: I like that you took my suggestion, i said that because that's usually a commonly seen trend in games and its fun. Makes you want to fight, makes it more of an interesting game.

Dragons and Armies: This just took the app into a total transformation to a proper game. I think this idea is cool if you are planning to make this as a game app.

Virtual map: This is definitely something that could pop up when opening the app and then help me find the best spot in the city to go to capture or fight or other things. So yes, instead of going physically to the place to check if there are any free buildings, it would be more convenient to see them inside a map with details.

Interviewee 5: Leaderboard: Global leaderboard sounds cool. Even the social media one. Maybe the user can choose the option? That would be nice.

Experience Level: I like it, but could be a little bit annoying if it takes a lot of points and game to reach there.

Ownership: I don't mind fighting for it, but paying is a bit tough. What if its my first building and that itself I need to fight for and I don't have any money and I may not be interested to invest money in the app yet. So there should be another alternative for people who are not interesting in paying.

Dragons and Armies: This is just so cool! I would just use them and ask my friends to fight against me. Or with me if I have to form an army. Sounds pretty awesome idea.

Virtual map: I don't know. Maybe. Visually it may be very helpful, but I feel there may be too much information in a single page. I am not very sure about this one.

Interviewee 6: Leaderboard: I would like the ranking and scoring to be done based on the social media leaderboard. That makes it more fun and will keep me more active in the game, I can interact with my followers in a very different perspective.

Experience Level: Well, it makes sense that you need experience level to make it more attractive, but that fighting and struggling and all are not my interest. I would totally lose interest if it is not that easy and is a bit complex.

Ownership: Fighting, not of much interest to me. I don't mind paying, if the app lives up to the expectation and i receive incentives out of it as well.

Dragons and Armies: I don't know, your visuals look cool, but maybe I won't use that in this app.

Virtual map: This could be very handy while using this app and moving around the city. All the important things can be shown together in one particular page of the app and then navigate from there. I would use this feature of the app for sure.

Interviewee 7: Some kind of scoring system is a must in my opinion or else there wouldn't be any incentive to keep coming to the application. On the other hand, before the ranking system comes to play, it is really necessary that the game is absolutely fun to play and there are cool features as well.

I agree with the fact that experience level is necessary in this context. A person who just joined the game should not be able to own a highly popular building just like that. There should be some kind of constraints attached to it. On the other hand everyone should be able to view and do other things apart from owning it.

I agree that a building should not be owned by someone forever. If someone needs to retain ownership, he/she must do something for that. Could be paying in game currency or something that involves the user make it worth it. But paying money contradicts with the idea of ownership. So I think there should be some activity involved in such cases

Competition incorporated with stunning visual effects will be a strong positive feature in my opinion. In that way people would feel more engaged to the platform. Like a battle in game of thrones!

Expiration period shown would be a nice feature, then other users will get to know how long they have until they can go for a chance to own a specific building.

Would love to have a virtual map of my own that shows my progress, the places I've visited, the landmarks I have owned previously, my wish- list etc.

Interviewee 8: It would be cool to see my standing in a leaderboard, getting to see how and where I stand among my friends would be very nice to have. Because that gives the bragging right with other friends who are also in the game

Experience level limits the users in the sense of interacting with the buildings or the application itself. I think everyone should be able to try out for owning something. Everyone should get the fair chance.

Ownership period should be limited by something. It does not make sense for someone to own something without any expiration. That would make other users demotivated to visit and use the application in specific areas.

I am not a mobile game lover, I play casual games, not lifestyle games. But for a lifestyle mobile gamer, some form of competition would be a plus.

Expiration time should be in some way visible to the other users.

It would be super cool to have a virtual map. To me, it is kind of another bragging right as I love travelling and would like to have a cool way to see my visited places and to share it with my fellow friends to see.

Appendix F: Pillar 2 Market Research Interviews

Personal

Show demo of application (or show a video): so, this is what you can do with the technology. What if you can display ANYTHING on the facade of a building:

1. What would you like to display on the facade of a building? Go crazy, what would you want other to see?
2. What are the interests or causes that you would like to promote or you care about?
3. What type of media? (photo, video, GIF, etc.)
4. Do you want to create specific content inside of the application or would you like to create content outside of the application? (Real-time or past or both)?
5. Are you worried about privacy? Should it be seen by everyone or just some people or just for yourself? (Audience based)
6. Should the content be exclusive at the location or also shared on other social media? (Unlock content based on location)

**Business / City / Other segments...*

7. Imagine you own a company and you can show content on facades of buildings. You can think of any product or service you would like to sell, the world is your oyster!
8. Can you think of a business campaign for which this could be used for?
9. What type of business do you think this is perfect for?
10. Do you think location matters? Or does the person viewing the content matter more?

Interviewee 1: The first interviewee is a musician and he likes the potential of marketing his music or performance on buildings for people to see. He would take a photo of himself behind his piano: it is a great way to get yourself on a billboard. For him, it would be a competition to get his face on the tallest building. He would not share any personal photos or political statements, but he usually does not on any of

his other social media channels either. It would be a possibility to give extra points to people who post a photo they have made at the building in order to create some exclusivity, but it should be possible to also post older things (or things you have dated together prior to going to the building, such as promotional posters).

He would mostly post about his company, share YouTube videos and possible share live performances. The shorter the message, the better: since people will most likely be walking by and stop quickly, he would just use photos and GIF's so people can obtain all the information without having to spend too much time there. Privacy should be something the user has control over: there should be settings that allow people to share with everyone, just friends, etc.

Having to be in the city to see the content does add exclusivity, but a post can be more popular if you can also share it on Facebook. Especially if it is used for marketing, this is important. For example, he would like to promote a performance on the building where the performance will be held. It would be great to also share this in other places. Moreover, he sees some perspective here from the business side: if the Concert Hall can own its own building (and pays a fee for it), they can promote all their performances there. However, this building should then not be allowed to be captured by the public. There could be a balance between buildings that are permanently owned and buildings that can be captured by the public.

Interviewee 2: This interviewee does not want to promote themselves, but sees this as an opportunity to share a message to mankind in the form of a picture or quote. She says the world is getting harsher and this is a nice way to share good thoughts. Although, she is not sure if this should be put on buildings, but she does put these quotes and messages on her other social media channels. This would then be in the form of a static image with text. However, she also likes the idea of leaving video messages to others. She sees tons of possibilities with the type of media that can be posted.

She is very worried about the ethics behind the concept, since it is very hard to control what people actually post on the buildings: what if people use it to share words of hatred? How do you make sure that people do not actually abuse this power of posting content for larger audiences to see? In order to prevent this, she does see possibilities in having to take the picture directly there, but she feels like it would be a shame if you cannot share things you have already made before.

She understands that social media is not just for friends and she keeps this in mind whenever she posts: in that sense, she is not worried about privacy. She does like the idea of having privacy settings, like the ones present on Facebook. More importantly, she thinks that only users should be able to share any content they have

put on buildings. The application itself should not be allowed to use the content and share it at some other place, that would feel like an invasion of privacy to her.

She thinks this application is more interesting to companies than to her when it comes to content: she thinks especially small regional companies could benefit a lot from this type of marketing. She likes the idea of having companies dedicated to marketing and companies dedicated to personal posts: that way, you will come across the advertisements but you will also see personal content of others. She understands that having just commercials does not make it interesting for users to actually look at the content. Therefore, some companies should only be conquered and owned by users, whereas others should be bought by companies (they can bid against each other for owning buildings). It is good for companies to promote near their location, but more importantly is that there are enough people in the neighbourhood to view the advertisement. Show a pop-up of the buildings asking if you want to see the content when users try to take a photo of it: how many people take a picture of the Eiffel Tower everyday?

Interviewee 3: this person travels to many destinations and, she has to admit, she does like to boast about it on her social media. She would love to leave her greetings at famous landmarks and she would love to be able to post this (both the building and her advertisement) on other social media platforms. She would also love to post 'tbt (throwback Thursday) pictures on the building if she has been there before. However, as with Facebook, she only wants to share this content with her friends on the social media platform and not with everyone.

She also loves photography and does see the potential of showing some pictures she has made on buildings in order to get media attention. She does not really want to pursue it as a career, but if it could get her recognised and perhaps she could get an assignment or two, she would love that! Mostly, she would just post pictures on the building. She would prefer if both location-based and real-time photos were an option: what if you own the Eiffel Tower for a short while but you cannot make a nice photo there? The building would feel wasted.

If she were to see her photography as a company, she would love to show her photos on the buildings. On most social media platforms, followers and attention means more popularity and an actual chance to earn money with your social media account. She would also spend some money to be able to do this, if enough people would use the application. She thinks most businesses could profit from these advertisements, especially because billboards are really expensive and these virtual advertisements could cost less. Moreover, virtual billboards would not interfere with the beauty of a city: you can still visit the city in all its glory and only see the

advertisements through the app. However, she does feel that there would need to be an incentive to go around the city looking for advertisements.

Interviewee 4: Display on Facade: Maybe the status of my Graffter game? My graffter score and my conquered buildings, my overall performance in the app. Reviews for the building and maybe the things happening inside the building. My personalised opinion or experience in the building.

Interests: Game, so anything related to the graffter game would be interesting to me. And I would definitely be intrigued by the reviews of people I know for sure have been inside that particular building.

Type of media: 3D, 360, Pics, Videos, Live streamings, Music

Content creation RealTime/Not: RealTime would be like an extra motivation to use the Graffter app. But at times, I would like to use some other old media too. So maybe the option for both.

Privacy: It should definitely be my choice if it's my content.

Location-based content/Social Media: Location-based, that I feel is the main crux/ USP of this app, being physically present at the location to access things.

Business Campaign: Advertisements

Type of business: Game shops, Coffee shops, Restaurants, etc.

Location/View: Localised

Interviewee 5: Display on Facade: Pass on socially relevant issues on it (create awareness, spreading them especially at these huge attraction buildings for bigger impact). If I need something, I would use it like an enquiry forum, where people can comment and leave their opinion or suggestions.

Interests: Create awareness and Ads (Personal and Business)

Type of media: Text, Picture and Videos

Content creation RealTime/Not: I don't prefer to use Real time camera, I prefer using an already existing picture or post from my camera. There is a huge problem of quality of such in-built app cameras.

Privacy: Privacy totally depend on the contents. If I am putting a very personal pictures of mine, I would definitely don't want other than my friend circle to see. Should be more of a customized privacy setting, the control should be mine.

Location-based content/Social Media: I mean if it is localised, then that would make me use this app more, because if i need to post content on a global platform, I would use all the other existing social media platforms.

Business Campaign: I would like to publish my ad, if I am an artist, I want to publish my work, I can use this. Charity events, for any good cause, events can be held inside the facade and users who participate gets an incentive. Promote movie promo videos or songs.

Type of business: Film Business, NGOs, Concerts, Sales oriented, retails (books, clothes), Sports industry promoting health awareness.

Location/View: Definitely localised, advertisements or any type of campaigns are most effective when it's for a niched audience or particular target groups and in that the proximity does matter a lot.

Interviewee 6: Display on Facade: Maybe my social media posts, my promotion ads, cool quotes (like thought for the day), funny videos or images, inside visual of the building

Interests: My Blog and my promotional ads, my posts

Type of media: all types, I mean the 3D visual is also cool.

Content creation RealTime/Not: I would say both, I mean, I may like to use my old pics or I would like to edit the pics I made at that place also. So if you have editing option available, then realtime is also fine. But I prefer more if I have the option for both.

Privacy: I am not worried about privacy that much, I am willingly posting the content up there for everyone. But of course there are people who doesn't prefer that. So maybe the option of making it public or friends similar to FB could be used here?

Location-based content/Social Media: I would love to share my content in the social media for sure and let my friends and followers see it too.

Business Campaign: Ads, Local shop exhibitions, social events

Type of business: I personally love when apps or any entity support local business people. So it would be perfect if you support them.

Location/View: Well it depends on the campaign, if it is location sensitive, then of course the location does matter the most. In other cases, it's just the matter of likes and share and comments, so location doesn't matter much. I don't know, sorry.

Interviewee 7: Would like to see upcoming events happening locally over the facades with previews of past events by the artist or band. Also if there could be sharing of open source codes over the facades between developers with certain access codes.

Would like to share the campaigns of the non profit organisations he is linked to as well as other social causes that he relates to viz. Animal welfare, climate change etc.

Would like to have all sorts of media available to be displayed, including videos, live streams/broadcasts etc.

Would like to have both sorts of contents, should be able to develop content using the mobile terminal as well real time content, for instance, live snippets of a concert outside the facade of the building where the event is happening to attract customers, or live feed of sports etc

Isn't worried about the privacy as such but would be interested to have an audience filter. But would also like to keep the content mostly public to promote personal interests like photography.

The content should be able to be relayed between different platforms as well as between different locations to increase the social interaction among users of different places making the content global and open to all.

Interviewee 8: Would like to post content about sharing or renting stuff to promote the sharing economy virtually, also song covers/compositions over the facades like a virtual YouTube. It'd be great to be able to create events for group trekking or hiking where people can subscribe and share information regarding the time, venue, weather forecasts etc.

Music concerts, pop culture, personality development conferences/ seminars

All kinds of media are good for him but thinks video streaming would be the most effective especially when it comes to music related content.

Would prefer real time content streaming than just photos or videos from the past. Trekking/ hiking trails demonstrated virtually(virtual maps) for a particular location that could be used for navigation instead of maps.

Privacy is an issue so filtered audience would be a nice idea. Would want to control how my content is being viewed or managed by others.

Would like it to be embedded with my instagram profile. He would like to share his travel photography on different local facades. Also if he could share my travel blogs of a location at a different location with similar demographics to be used as recommendations, that'd be cool.

Interviewee 9: I would like to display my paintings and sketches and I think it would be very nice platform for the casual artists to showcase their work in a very innovative way. Kind of like an art exhibition. I would not share my personal day to day photos on this because for that I have other applications

As an art enthusiast, the first thing that comes is to see others' works that relates some sort of art. Could be music as well. Further, I would like to see promotion of the things that I support, such as going green and organic way of living. Promotions for movies and products are already in the other apps, this could be something different.

Type of media: Nothing specific, could be anything, photo, video , panoramas

For me, since I will not be sharing my personal day to day activities and will only share my works, I don't care about privacy here. I want people to see my art and it should not be restricted. My own digital art exhibition

Would like that if it gets shared on other social media. In that way, more people can see the content.

If thinking as a business, the content to show could be based on personal preferences. For example, I will like to see campaigns that are related to me (art and design) as opposed to someone who is sports lover.

Could be great for any business as far as they can identify what to show and to whom. I think the location matters. Because for business campaigns, something that is popular in one place, might not be a thing in another country.

Interviewee 10: I would like to show photos and videos that I find funny throughout the day. But not in a boring still picture but if possible, in a new way like the Instagram boomerang or something like that.

I am a football lover. I will share and promote my team Juventus and the amazing goals Cristiano Ronaldo scores. Also I love playing video games, I would probably like to see more of video game promotion and gameplay videos. But then again, we have youtube and twitch for that.

Type of media: Anything but still pictures, the video looks cool, so something that is animated and has really great visuals. Could be 3D media as well.

I would like both the options to create the content in the app or import from other media. Would be nice to have some freedom in this

I don't mind sharing it to anyone who passes the location and sees it. I don't think I will post sensitive content here on this platform.

Exclusive to that location. No sharing in the social media

Businesses: Could be exploited in many ways, showing ads every once in a while. Like a green solution for advertisement. Instead of big ass billboards, virtual billboards for ads and promotions of products, events, movies etc. As I said. For ads, any business that runs ad can be a part of this

Location matters, the local brands and shops and businesses will be partnered up with the platform to run ads and campaigns.

Appendix G: Pillar 2 Validation

Survey and Summary

Summary:

In order to validate our assumptions that we formulated during the brainstorm session and interview sessions with potential users for pillar 2 (in-app features and contents), we conducted an online survey similar to the previous pillar validation. This time, there were 8 questions excluding the general questions(i.e. Gender, Age, Occupation). These eight questions were divided into three main parts - i) Content Creation, ii) Privacy and iii) Sharing on Social Media. During this online validation survey, we had 50 respondents, mostly students pursuing university degrees and aging between 21 to 28 years of old. The distribution of male and female respondents was equal.

As for content creation is concerned, most participants responded in neutrally when asked about content creation at the location whereas, 16% of them strongly agrees to create contents at the location and 22% strongly disagrees to that. Moreover, more than 75% of the respondents agree that the content can be any media from their devices meaning that the content is not necessarily created at the location of the facade. The majority participants also agree that if the content is created in real-time, that is, created at the location of the building/landmark, they should be rewarded more than that of the opposite.

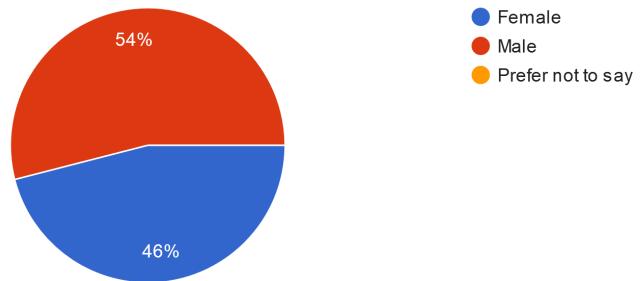
As per privacy, more than 60% respondents agree that the user should be in total control of who is viewing his/her contents on the facade. On the other hand, about 50% people agree that everyone should be able to see the contents on the facades. Some additional remarks stated that the facades are public platforms for people to share the contents that they want to share to the public. Furthermore, about 80% of the respondents answered that they should be able to share their contents on other social media platforms with majority agreeing that they should be able to share only the visuals of the content that is displayed on the facade on other social media platforms.

Finally, integration with other social media applications is still a grey area as respondents are not concentrated on either of the positive or negative side. Some respondents want the integration while a large number of them are either neutral or disagree with the integration.

The detailed analytics are shown below:

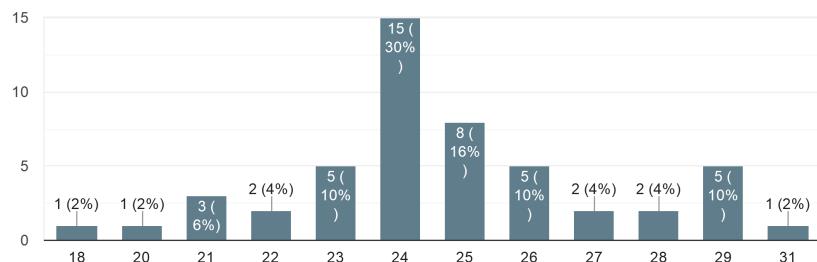
Gender

50 responses



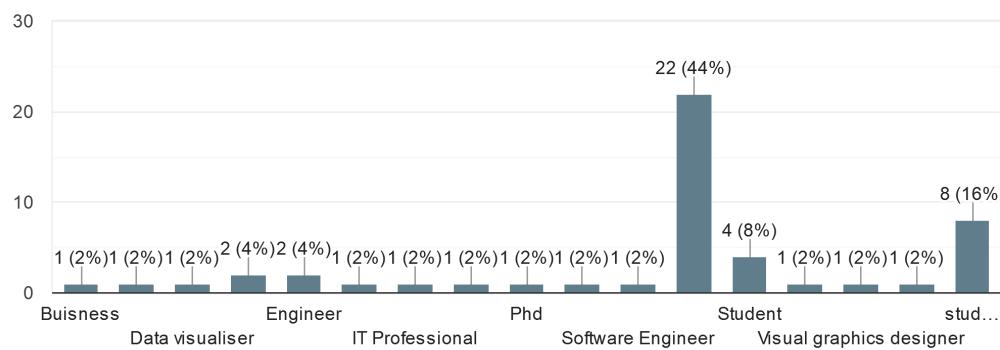
Age

50 responses



Occupation

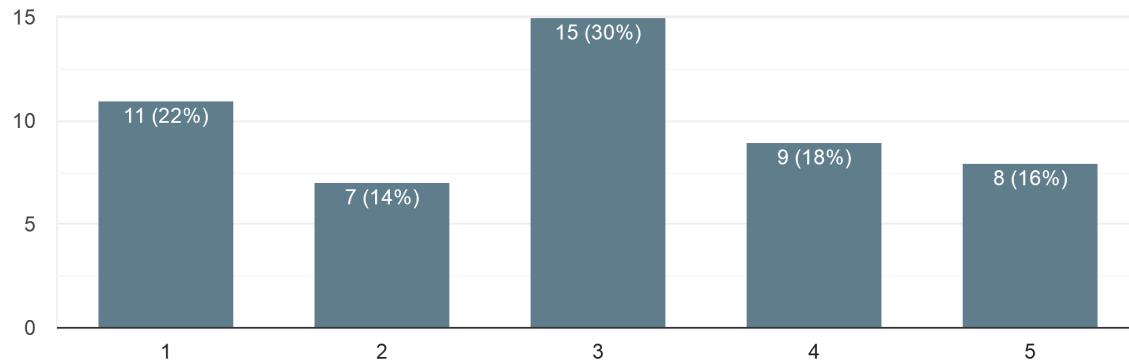
50 responses



Content creation at location:

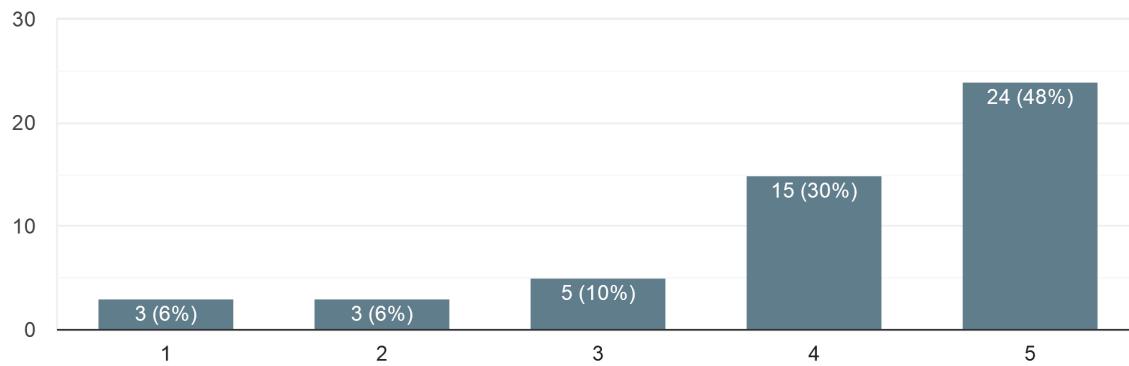
The content that I upload to the facade has to be created at the location of the building

50 responses



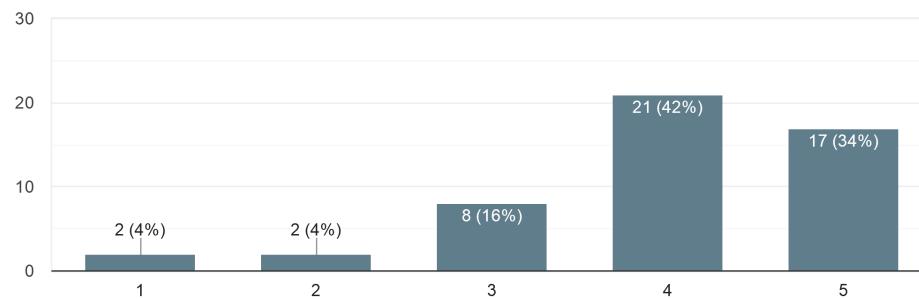
The content that I upload to the facade can be any content (e.g. from my photo gallery, from internet, etc.) and, ...e created at the location of the building

50 responses



The content that I upload does not need to be created at the location of the building, but I do get extra experience points within the game when I do.

50 responses



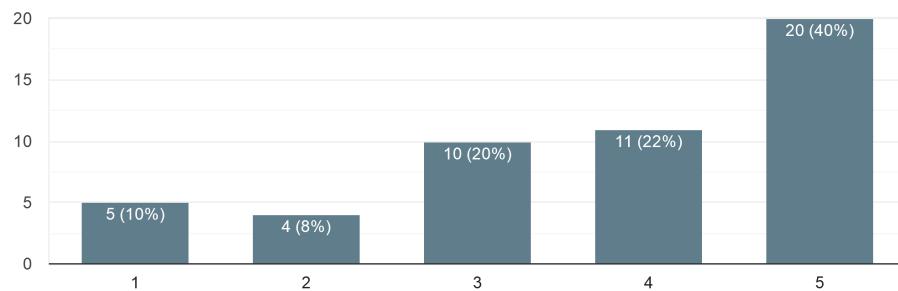
Optional: Do you have any remarks about content creation at location?

1. In the evening it's dark so this limits ones options for content creation
2. Would work best with some artists or so, I wouldn't want to sit there and make something for a while before 'posting'
3. This would be device specific, since not everyone owns a mobile device with advanced features to able to create visual content as shown in examples.
4. It creates a beautiful experience
5. The content should match with the surroundings and atmosphere. If you create it at the location, looking at the building, may be you will get more creative ideas. I think you can do your best then. Say, you can recreate some famous scenario or some famous talents in the local place. That would be cool.

Privacy:

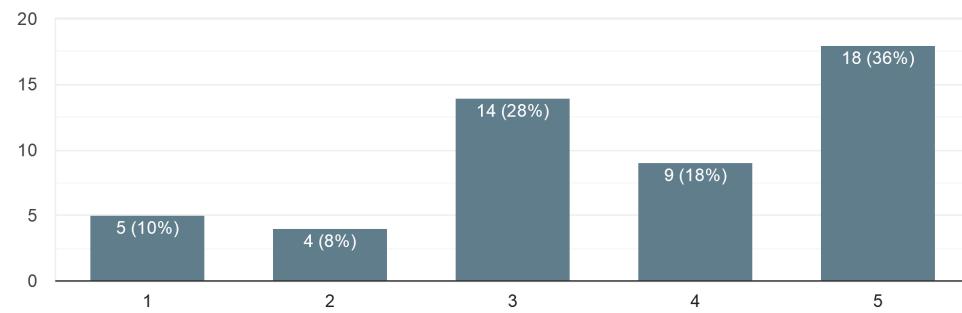
The user should control who can see the content he/she has uploaded

50 responses



Everyone should be able to see the content that has been uploaded to the facades

50 responses



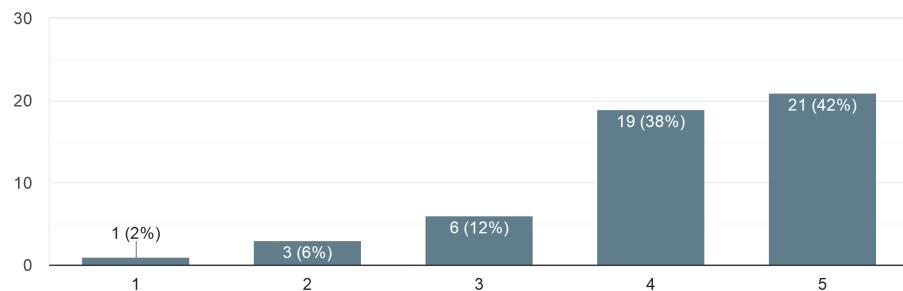
Optional: Do you have any remarks about privacy?

1. Facades are not private places
2. A building exterior is a public sight, I would consider it public information in terms of privacy
3. There should be some kind of content segregation.
4. It's projected on a building... so there's no way to control who sees it...
5. I'm not sure I understood right; I expected that the content would be projected on the facade so that anyone walking by could see it....is this more of an AR type situation?
6. It should be reachable for everyone but it should be reviewed or censored before granting the permission to the user.

Sharing Uploaded Content on other Social Media:

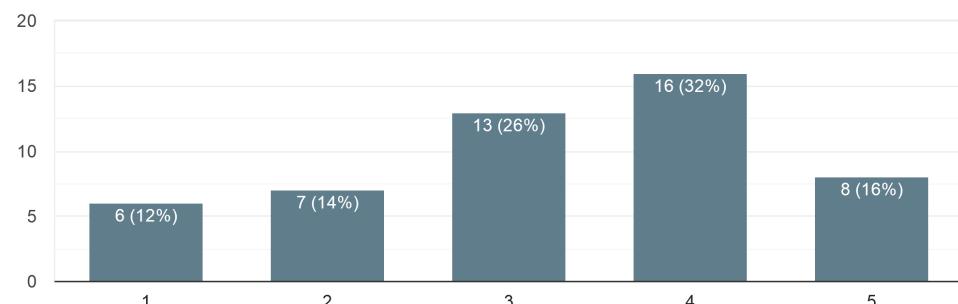
I should be able to share my uploaded content to other social media platforms.

50 responses



I can only share a visual of the content displayed on the facade to other social media platforms

50 responses



Optional: Do you have any remarks about sharing uploaded content?

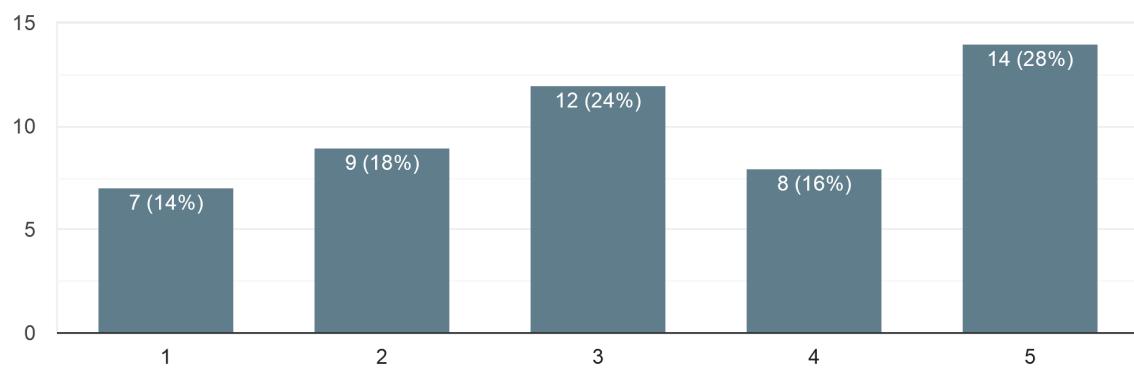
1. It's about the facade, not the internet. Unless it's a feature of Instagram, then they integrate it (see General Question)
2. I would consider the raw data, eg the original uploaded content, not resharrable but pictures of the building with my content should be freely shareable p
3. This should have a customised option as well where in the user can decide if or not the content goes on social media

4. It's a unique idea and the uniqueness is it's best feature. Sharing it to social media will only kill it. It will become just like many other shared videos or images which drown in the unnoticed talents in social media.

Integration with other social media app:

I want this as an integrated part of existing social media (e.g Facebook, Instagram) as opposed to a standalone application.

50 responses



Appendix H: Pillar 2 Validation Interviews

1. Should this content be created at the location of the building (and therefore be real time) or should the content be anything you want (and therefore include old content or something you share from internet that has been previously created)?
2. Can anyone and everyone view the content you post on buildings or can only certain people see the content you have created?
3. Is the content you have uploaded exclusive for the facade, or should you be able to also share your content (perhaps including the visual of having it displayed on the facade) to other social media platforms?
4. I want this as an integrated part of existing social media (e.g Facebook, Instagram) as opposed to a standalone application.

Interviewee 1: This interviewee had the opinion that it would be most fun if the content that would be displayed on the facade would be created at the location. He claimed that it would make the content less random, since all the content would be (most likely) selfies of people at that exact location. However, he acknowledges that this would only be interesting if the people creating the content would be tourists, since they will be the ones creating pictures at locations: it makes less sense when the facade is a less touristy building.

He thinks it is always good to be able to determine yourself who is allowed to see the content that is portrayed on the facade. However, he thinks the default setting should be that everyone is allowed to see the content, but the user is able to change this setting if they please (a feature social media platforms often offer, e.g. Facebook).

He does think that everyone should be able to share their uploaded content to other social media platforms. However, he does not want this application to be integrated with other social media applications, but he would prefer a stand-alone application. He does not like everything to be linked to Facebook and he personally never links anything to social media platform. It is stronger when the app is launched as a stand-alone application.

Interviewee 2: This interviewee does not believe content should be created at location: if she owns the building and she would like to display content on it, she

should also be able to upload the content from a distance. This is especially important if she would like to advertise something on the building: it is impossible, or at the least very time consuming, to always visit the building to change the advertisement. She also does not understand the added value of owning a building if everyone is allowed to put content on it, unless she receives something in return. However, she prefers if only the owners of the building can post their content.

She feels that, just like real posters on buildings, content should be visible to everyone. However, there has to be a strong set of rules of what is allowed to be posted and there needs to be some supervision in order to filter bad content. She would, moreover, want to share her content as well as her capturing a building: whenever she would capture a building, she would like to share a message to her social media content (e.g. "I captured the Eifel Tower!" *include picture attachment of her content on building).

She does not have a strong opinion on the integration of the application: if you integrate it with other social media platforms, you would already have a large and solid user base. Therefore, this option would be easier to integrate. She does think a stand-alone application would be quite nice, but it would be yet another application and yet another social media platform. Therefore, she would have a slight preference for integrating the application into an existing platform.

Interviewee 3: This interviewee thinks it would be nice to create a special reward for people who do make content at the location. If she would look at the content, she would prefer to see content that is related to the location. Therefore, by providing rewards, people might be more motivated to make content at the location. However, this can, through technology, always be manufactured and 'hacked' in a sense, so she does not know if it would actually be feasible.

She does like it if there would be privacy settings, but she thinks that many people would make use of it: would there still be enough nice content shared for everyone or do you need to be friends with many people again? She kind of likes the idea that all content should be visible to everyone, which would make it different from other social media platforms. Regarding sharing content, she would like to share her content to other platforms as well. It would be amazing to share her content displayed on the facade instead of only sharing the content on its own.

In her opinion, this should be a stand-alone application. She thinks the features of this application might be lost in other platforms. However, it depends on the features incorporated within the application: if all content is public, for example, it would make it different from other platforms and, therefore, it would require its own platform. If privacy settings could be changed, content can always be uploaded from everywhere, it could also be integrated.

Interviewee 4: Content creation: I don't prefer to create content at the location as it would be tedious and requires more effort. But the extra experience points is definitely a catch.

Privacy: This is very subjective because of the nature of uploaded contents. Advertisements, events, product/movie promotions should be visible to everyone. Whereas personal contents need privacy.

Sharing Uploaded Content on other Social Media: Cross platform sharing will extend the visibility of the content.

General (standalone/social media): Best and easy option is to have it as an integrated part of social media.

Interviewee 5: Content creation: I would always prefer if it's my choice, I may like to upload something I already have or at times I would like to put up something that is taken at that building, if it a very famous or popular building. But the extra points would be something that can motivate me to create content on the spot.

Privacy: I would say the same as before, my choice. It should be my decision as the content may vary. If it is something I want to share with my close friends alone, I need to have that option.

Sharing Uploaded Content on other Social Media: I would definitely like to share my content on the social media so that all my followers and friends can see.

General (standalone/social media): Standalone is fine for me as long as the content can be shared to the social media platforms.

Interviewee 6: Content creation: For creating these specific, cool contents, it will be better to have the content be created at the location, the extra experience points is a great initiator for that. It will push more people to use that option. And maybe if you make the accessibility of these cool 3D visuals and other fun contents only for contents created at the location, that can also be attractive for the people.

Privacy: Well, I am someone who doesn't care that much about the privacy. You are agreeing to put up the content on the building by yourself, then it should be accessible for all the users who come to that location.

Sharing Uploaded Content on other Social Media: Everyone likes showing off their posts online now, through multiple platforms. So it will be great to have easy sharing option on the app.

General (standalone/social media): Since this is a very rare concept from all the other social media platforms, standalone would be fine, but it will be more convenient in terms of using as well as for sharing.

Interviewee 7: Yes it is kind of special that the content is created at the location. I prefer real time content creation in this context that makes it more unique.

No, if contents are not real time, the application will lose its essence.

Yes the incentive of getting something extra will encourage me to create real time content, and same goes for all the users I believe.

It would be great to have the control on whoever is seeing my content. But maybe, only the premium users will have that privilege.

In my opinion, the contents of general users should be public for all users to see, and premium users can control their privacy.

Yeah I want to share my uploaded contents on other social media platforms as well.

The main essence of the content can only be experienced in the application itself, on social media, it can be posted as a sneak peak of what I'm doing in the façade.

It should be exclusive to the façade, but people should have the ability to see it. So that they get inspiration.

I think it should maintain its own environment not totally integrated with other social media platforms.

Interviewee 8: This constraint should not be there. I should be able to upload anything and not necessarily has to be created at the location.

I should have the freedom to choose whatever I want from my media, so, the content should not be only the content that was created at the location.

There should be a system to get more experience/reward if the content was made at the location, this could be a better incentive for the users.

I think the building facades is a public space for the app users, therefore, I think everyone should be able to see the contents and users should upload content accordingly

Everyone in the user base should be able to see the contents at specific locations

Sharing contents on social media is a good feature, I think

I think the app should have own unique way to present contents, so only the content should be shared on other social medias, not the unique visuals.

Integration: standalone unique experience.

Interviewee 9: He thinks it'd be great to use the digital space to forward the interests and hobbies of a user.

Also the digital space could be utilized as a platform to create and share information about various activities related to leisure and social life.

He'd prefer the video streaming over other types of media since he feels that, that is something which could involve the audience more as compared to other forms. Also if the videos could be interactive and immersive that'd be an added benefit

Location based content creation is an excellent idea to get the user to interact more with the application by having to visit the facade.

I would like to be able to share the content from the facades on my social media accounts so as to have a sense of community by sharing my content with my friends and getting them involved as well

Personally privacy is not an issue for him but thinks that the user should be given the flexibility to choose from the type of audience he or she wishes to have.

Interviewee 10: He prefers content to be open source and shareable amongst users making it more flexible and informative

He would like to share content that puts forward things that he associates himself with. It'd be great if others of similar interest could form small digital communities to share similar interests using content creation

He doesn't have a preference on the type of content created on the facades as long as it is something relevant and engrossing. Also the idea of localising the application use is a good idea according to him which gives the app its own USP.

Privacy isn't an issue for him as he thinks all content created on the facades should be somehow shareable, that's what would make the application a success coz access control is already something other platforms use.

He would like the integration of the application with other platforms to be able to share the content on them which he thinks is a positive step to increase the customer base of the application

Appendix I: Pillar 3 Market Research Interviews

1. Do you care about brand culture/ or are you passionate about certain brands over others?
2. How does advertisement content influence your likes or dislikes?
3. What are your thoughts about personalized ad campaign?
4. Do you prefer the generic approach of advertisement by the brands on your social media platform?
5. What kind of campaigns would you reach out to or make you open the application?
6. How do you want to pursue your fellow friends to join you in this app?
7. What would motivate you to make your friends to join you with the fun of grafting?! :P
8. What would keep your interest glued to the application after using it for the first time?
9. Can you think of fun ways to interact with (any type of) posted content? (brainstorm ideas out of the person!)
10. Optional: what would you do with this application (besides business or personal posts)?

Interviewee 1: The interviewee is not particularly passionate about certain brands over others, but she does acknowledge that having good experiences with a brand would make her consider more of their products. She does notice that other people sometimes care about brands in such a way that they only want it because others have it, but she is not sensitive to that. However, she does think that advertisements influence her: both really good and really bad commercials are memorable, making a product stay within her mind and making it more likely she will remember it and maybe even buy it. The same goes for hearing a brand or product many times over: it creates a sense that the product must be good.

She finds it a bit creepy that she receives advertisements for traveling after googling it on her computer, but she does acknowledge it comes in handy. Personalised advertisements are, therefore, something she enjoys more than general commercials, but she does feel that it could also become more of a tunnel vision.

She would not open the application to see the content, but she would consume it as part of the game. However, the gaming element is something that attracts her more to the application and it is also what will keep her interested. She would like to visit a building to see how many people she will need in her army to overtake it and she would watch commercials to earn points within the game or receive discounts within the real world. The element of owning, or possessing, buildings is something that would get her glued: once she owns something, she wants to keep it. This is, again, focused on the gaming element.

She would invite friends if she needs people to help her capture a building. She also suggested that maybe you don't capture an entire building, but rooms within a building so you could invite friends to occupy rooms within the building you currently own.

To interact with the building, she had two suggestions. The first is to be able to dress up the building and do something funny with it (give it a Christmas hat for example). Moreover, you could also put games on there such as an inverse escape room: solve the puzzle or riddles in order to see the content or in order to own the building. Have a game in a game element, as such.

She also saw this technology in an app for elderly users who could chat to other elderly users at locations and, therefore, it could fight loneliness. In that sense, you could have buildings represent interests and have physical locations for forums or online groups.

Interviewee 2: When he was a teenager, he says he was more sensitive to brands and needed to have clothing and shoes from very specific brands. However, as he has grown up and matured, he says he is less influenced by brands than before. As before, he also acknowledges that commercials work, even if you don't want them to: they really influence your brain without you sometimes being aware of it.

He thinks personalised campaigns are relevant and it is nice to see commercials you are interested in, but he does not want to feel that the system knows everywhere he has been. Therefore, preferences and likes are okay, but physical locations go too far in his opinion. He likes generic commercials also, but more due to the fact that he knows personalised campaigns know a lot about him. Moreover, he wants to be surprised with new products or things he does not know yet. After suggesting, he was fond of the idea of having personalised advertisements also based on collaborative filtering (e.g. likes of people similar to him), so he could still experience new things that are more likely interesting to him.

He would open or look at campaigns if it would help him progress in the game, such as gaining experience points. Therefore, you would have to watch content in order

to be able to protect your building (because you have to purchase protection for example). He would invite his friends if the game would be new and exciting, perhaps something funny. He thinks this would be a perfect app for teenagers or people in high school.

He would rather share the app through word of mouth than through technology, but otherwise he would like to gain experience points or have friends start with something extra, like experience points or a couple of buildings to start out with.

The only reason he would be glued to the app would be if the app was fun to use, looks nice and how much it would help him in certain matters: he can see this being handy for his company, but it should give you plenty of opportunities to actually become useful. As means of interaction, perhaps you could change the content that has been uploaded, but this should not be shared to anything else because people usually make content more ugly instead of beautiful, which could lead to bullying in some cases. He is, therefore, apprehensive of this option.

Interviewee 3: He is very passionate about brands when it comes to quality: since he takes many photos as a hobby, he will invest in having a well-known brand camera. However, he is not sensitive to other's opinions of which brand he should have. He generally likes commercials and likes to see what is new. He does not mind them. He does think it influences him, especially when he sees a repetition of the same commercial for it sticks in your mind.

He likes personalised advertisements, especially on social media: if advertisements need to be integrated, that is perfectly fine, but he does not want to waste time on things that are not relevant to him. However, he does prefer the personalisation to go as far as topics, likes and dislikes: he does not want the advertisement naming him or saying specifically what would be good for him, even though it might be accurate.

For him, he would like to receive discounts. He would not mind opening commercials if it would mean it would benefit him in real life. However, if it was part of a gaming environment, it would also be nice to progress within the game. He feels that the advertisement and the game should then be somehow linked.

If he would gain something from the app and he finds it useful (such as actual discounts), he would also share this with his friends for it would benefit them. He would tell them in person, but send a link to them through WhatsApp or allow them to scan a QR code on his phone. If the application gave him actual benefits, he would keep playing it.

He would love to see reviews of buildings and being able to review buildings yourself. Another domain he would love this technology in would be for job applications: you could easily find where jobs are available, which jobs are available

and be able to apply within the application. Something related to job hunting and searching based on location would be great, especially in larger cities. Maybe something can be done within that domain that could be useful.

Interviewee 4: Brand: I am a very loyal customer of brands I love. I try out different brands for my blogs and I give out reviews for my social media audience and once I love using a brand, I will keep on using them.

Advertisement: I would say half-half. If the ads look good and authentic (especially if it is done by any super famous actor or actress) and if the product is something that appeals me, I would try it out for sure.

Personalised Ad: Yes, this is what I meant earlier too. I love ads when they are things that are interesting to me. Totally agree with personalised ads. Saves lot of time.

Brand Approach in social media: Yes, I mean even I am part of these ad campaigns in my instagram page for my blog. So yes, I try to do ad work on my own at home as well, created videos with my family and posting them online. It actually works.

Campaign that force to use App: Sales, Local exhibitions and stuffs, if it have good reviews or good reputation brand and so on.

Pursue Friends: Well, if the app is good, I will definitely do a review and share it in my social media, so that's how i will personally promote this app.

Motivation: Well, if i like it, i don't need any other motivation. The app has to be good and worth it.

Interest after first use: Smooth easy use and also some fun element in the app. Incentives are a good catch, as mentioned in the other interviews. And personally, any discount for the promotional charges in social media would be a huge attraction for me.

Interact with content: Giving reviews inside grafter visuals, my own virtual canvas, where i can draw or write and that canvas will be available in all the facades, all over the world. So it's like I can start the painting (or any other things) in Paris and complete it in India. Something like that.

Interviewee 5: Brand: I am not someone who cares too much about brands. I look for price and quality. Brand names are overrated.

Advertisement: No, it actually doesn't affect me. I try out things and buy it if it is comfortable for me. Ads doesn't have any impact on that.

Personalised Ad: It's kind of creepy. Especially in social media when ads pop up according to your searches and other interaction with the internet. I don't think I would be positively affected by that.

Brand Approach in social media: I am someone who doesn't appreciate these pop-up ads in social medias.

Campaign that force to use App: Fun, Games are always interesting for me. I wouldn't like spending time to sit/stand and interact with the facade. It should be quick and easy whatever the interaction is needed.

Pursue Friends: I need some kind of gain if you need me to invite my friends. Like credits, discounts or extra points. Or even a famous facade I can capture for free.

Motivation: Incentives in any manner. The gamification and also the fact that my activity using the app has a huge impact on the scoring and experience points.

Interest after first use: Same as said above. Incentives and fun.

Interact with content: I don't know. I would just use it for posting personal things and also maybe see others content.

Interviewee 6: I don't care about the ads and branding in apps. But I watch it anyways in some apps that give me some reward (points). But to be honest I don't care.

There are sometimes I checked some ads out. But not in the app itself but I search it on other search engine or so.

Usually, I would prefer to see some relevant ads rather than random ads. So I think personalized ad campaigns are better than generalized ad campaigns.

Yes I think so. The generic approach of ads on social media eg FB are really better approach than flooding users with useless content.

Since it's an app that relies upon geolocation, I would like to see local campaigns from the brands.

I will only try to make my friends join this platform if there is a reward system for that. If I get something in return for inviting my friends to this app. Apart from that, I will show particular people who would be more or less interested in such an app and show how cool it is (if it is cool).

There should be an invite link (like in all the other apps) to send out to my contacts. But I think that won't be enough to get their attention. If there's a way to show them how the application works, like a small pre-rendered ad of the app.

If it gives me any kind of value to me, I will probably use it in my spare time. Like I said, a well defined reward system for using it, for me.

Post relevant content to the previous content posted. Like a sequence of posted content that are related to each other. When users are posting a fair number of

sequential contents it ends up to be a really beautiful outcome in the end. And it goes on..

Keep track of my travel records. I would feel awesome when I open my app and see the history of my owned building and see the posts that I made on them. Like a virtual footprint.

Interviewee 7: Yes and no. in the sense that, a known brand is always my choice and I know since it is a well-known brand, the product could not be bad. But on the other hand, I would also like to explore news things which are non-brand/ new brands in a sense.

I would say it influences me directly because I think ad campaign is a form of information where people get to know that it is out there. And for me, ads influence my like/dislike/interest in certain product or service

That's even better. If I can see what I want to see or what I am interested in, why see 10 other ads that do not interest me.

Yeah. If I *have* to watch ads, the generic approach of ads that I see every day while using let's say FB or Instagram, is preferable to me.

As a traveler myself, I would like to see ads (if I must) that are related to that specific part of the world, event promos, branding and marketing of local things because that will enable me to know more about that specific part of the geography and try those out. I would open the app and see the campaigns if those are related to a specific part of the geography.

I would be sharing my progress on social media for my friends to see. Also show my friends physically how much more fun it was with this app for example when I was traveling in Warsaw and Krakow. Given that I already love using it.

Fun that I experience while I'm traveling; but also the gaming experience when I'm not traveling. If there are fun activities to do while not travelling, I would be using it even when I am not traveling. Because I don't travel all the time.

I would like to see and interact with the people who are visiting the place after I visited or conquered. Also people can ask questions about that place or region since they know that I have already been there. So it is like if someone new conquer a landmark, he/she can be my friend(!) and share our experience of being at the same place in some way.

Since I'm a game enthusiast. Maybe this can be expanded to a full-fledged augmented reality game with all the other users in it. It might be something futuristic, but an MMO-RPG game based on augmented reality would be so cool.

Interviewee 8: I do prefer brands but it mostly depends on the type or category of thing I'm buying. Mostly if its about clothes, brands don't matter to me unless the quality is good but with things like electronics I prefer certain brands over others, even when it comes to food.

I like to follow certain advertisement campaigns and certain product releases if the product is of interest to me. As far as the influence is concerned I don't really like the ad pop ups in general but if it's an exclusive campaign of a certain product I might interest myself with it. Eg. New upgraded gadget, PS4 game releases etc.

I think personalized campaigning of ads is quite good. If I could use the ad campaigns to sell or share stuff and/or to promote my personalized interests like blogs from non-profit organisations I belong to or the causes I'm ventured into then that would be great.

As I already mentioned, the ad pops on videos and applications are more annoying than interesting but I don't mind following brand pages on social media to be updated on the brands that are of interest to me.

I like to attend concerts so anything with any music promotion is interesting to me. Also games and new movie releases are interesting.

Maybe sharing game level notifications or leaderboard ranking posts through social media. Also the shared content from the app can have link to registration with some bonus incentives on joining. Integrating this application framework with another media platforms could also be a way.

Getting extra experience points or getting extra currency or discounts through referrals. The ownership period of the facades could be increased by some percentage by inviting friends.

I might not use the application more often after a certain period of time but maybe daily login bonuses or any such luring incentives to make the user open the app could be interesting. Also having certain campaign notifications customized on my interests could be persuasive.

Forwarding it virtually to emails or social media to share certain interesting posts. Booking/Buying tickets virtually over the interface. Live karaoke via the virtual interface over the facade.

Conquer the world!

Interviewee 9: If it's something important like clothes and food I like to go with brands than buying of low quality. Although I like some brands more, but in general I don't follow them diligently. Cosmetics yes!

I don't usually get appealed by ads easily as I happen to stick to few chosen brands but if the advertisement is something I'm curious about I'd make sure to check it out.

I'd love if I could use advertisements personalised on my interests. I'm into art and crafts and if I could showcase my skills through campaigns that'd be great. Also if there could be customized messages to be featured for special occasions catered to a personal audience that'd also be cool.

I usually tend to check out online shopping ads on social media when I'm about to buy something. But mostly I'm not really into ad pop ups from social media. But I'd be interested in genuine promotions of products i'm interested in over mails.

As I already said, I'd be interested in promotional offers, online discounts and content related to arts and music. As I'm an Erasmus student it'd be interesting to have knowledge of such events around the city.

I think word of mouth is the most basic thing one could do following which if I could use referral links like in other promotional apps then that also is appealing. Regarding the app thing from before if there could be some benefit for me as a user to get my friends involved then that'd be interesting too, like my profile gets featured in some kind of timed spotlight so I gain followers or something like that.

I think since this app has some in app currency, it'd be kind of interesting if one could cash it into a bank account for a limited number of times. That'd could be one way to get attention of users. Also offers and discounts related to third party retailers or online stores on joining the platform, that'd be great.

I think if there could be some kind of learning involved in the app that'd be nice. Since I'm into arts , I could suggest there could be some graffiti or other sponsored tutorials that could come as an additional feature to the app besides the underlying theme

Maybe if the app allows the user to be more creative in terms of design and arts and stuff like that then that'd be interesting. Also like in case of a drumpad, if there could be a virtual drumpad or some manipulative view of some ongoing show or event that could be interesting.

Appendix J: Pillar 3 Validation

Survey and Summary

Summary:

For validating the concept that was generated using input from the users and by us, we conducted an online survey with 9 questions related directly to our concept and we included some basic personal questions (gender, age, occupation, etc) to get some insight about the users attending the survey. We received 58 responses in total, in which 67.2% of the responders were male, 31% of them were female and 1.7% did not want to reveal their gender. The responders are mostly students aging between 21 to 29 years of old. We also had responses from a higher age group of 59 year old as well.

A very large number of responders said that they prefer Quality over Brand strongly (91.4%), which shows how the brand culture is diminishing and people are looking for quality in all products and services. Even though more than half the people responded that they would be influenced by ads if their friends endorse it (56.9%), there is a huge amount of people who were a bit neutral about this question (31%). More than half the people responded strongly in disagreement when asked if they would be influenced if these ads were endorsed by a famous person (55.2%). Even here, few of the people (27.6%) were not sure about it, they had a neutral opinion. This is a very interesting aspect to experiment on.

When asked about their preference in general ads and personalised ads, more than half of the responders showed strong interest in personalised ads (58.7%), although some of them (31%) were still in the neutral opinion about it. Huge majority of people (72.4%) strongly agreed to the the question about ads that are location-based, even now some of them (20.7%) had a neutral opinion.

When asked about what is the thing that would motivate them in sharing the app with friends, there was a mixed opinion. More than half the people (69%) agreed that if the experience of using the app is good, they will definitely share it will their friends. The same number of people (69%) also said that they will share it with friends if there is a reward involved. This clearly shows that there is a thin line between this option and it is always best to incorporate both together.

When asked if they want to view and interact with the content that is uploaded in the building that are previously owned by themselves, there was a bit of confusion with the people. Nearly half of them (41.4%) gave a very neutral answer. But half of the

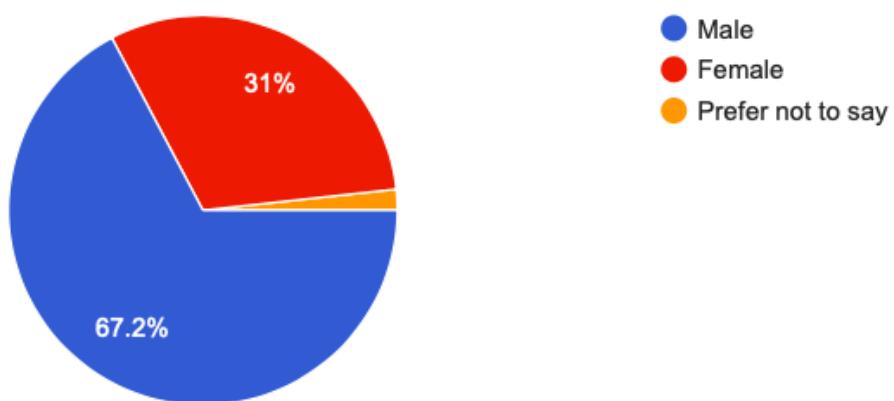
participants (50%) did agree that they should have access to the content even if they are not physically present at the location of their previously owned buildings.

The responders had different point of views regarding the integration of this application with existing social media applications. 32.8% of the responders want this as a standalone application, 39.7% of them want it to be integrated whereas about 27.6% people are neutral.

The detailed analytics are shown below in addition to some useful remarks made by the responders.

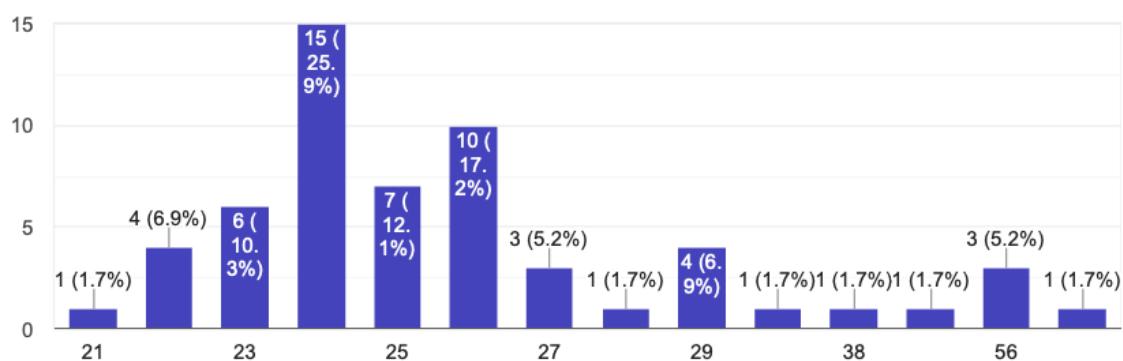
Gender

58 responses



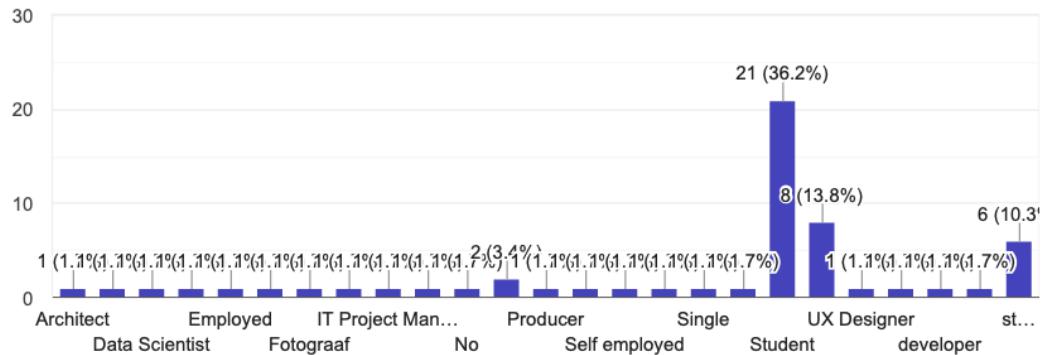
Age

58 responses



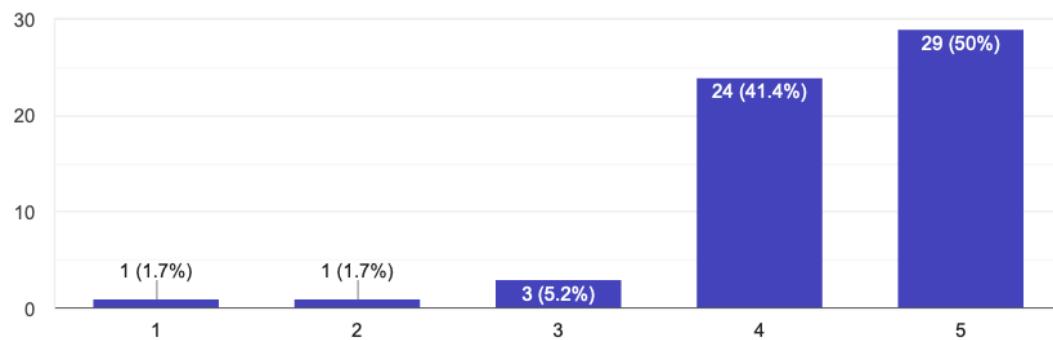
Occupation

58 responses



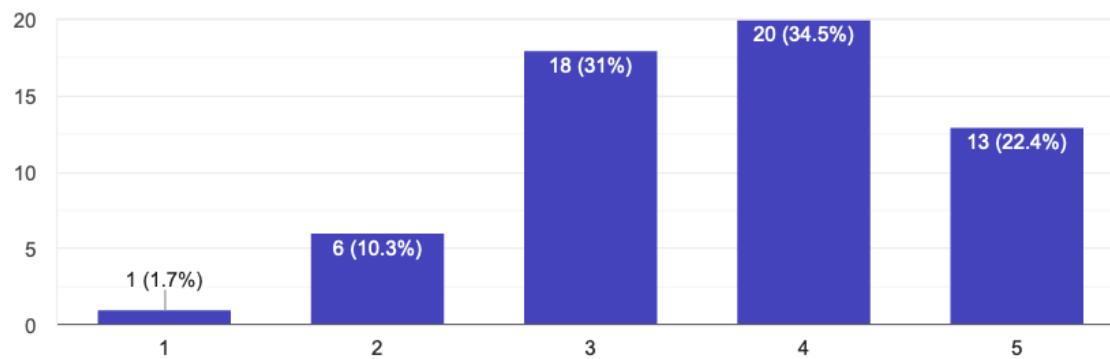
Quality is more important to me than brand.

58 responses



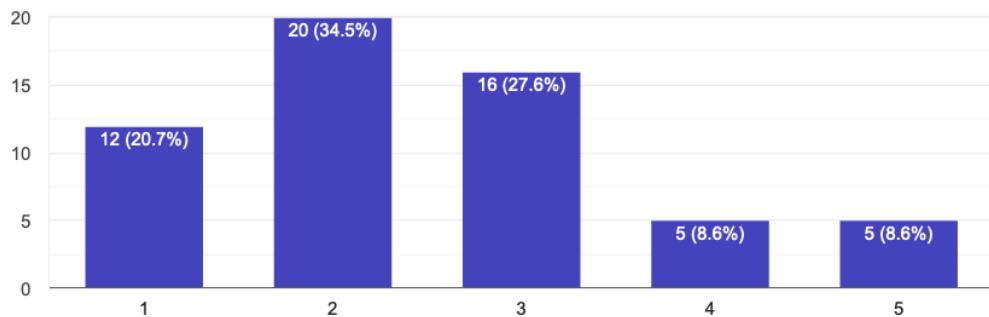
If my friends endorse an advertisement, I am more influenced by the advertisement.

58 responses



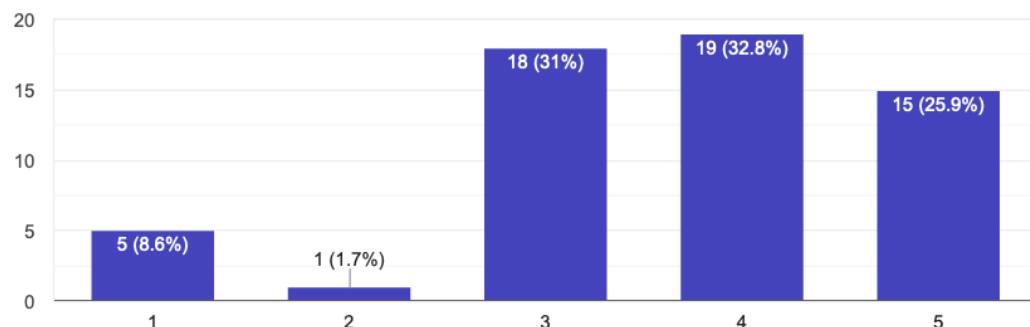
If a famous person endorses an advertisement, I am more influenced by the advertisement.

58 responses



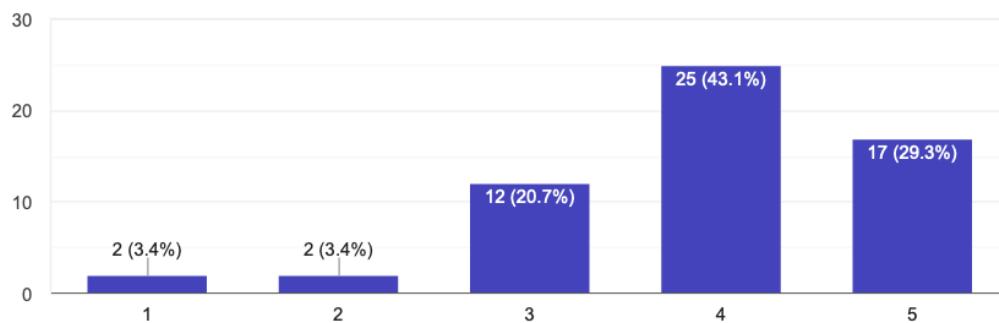
I prefer personalized ads (tailored to my interests) over general advertisements.

58 responses



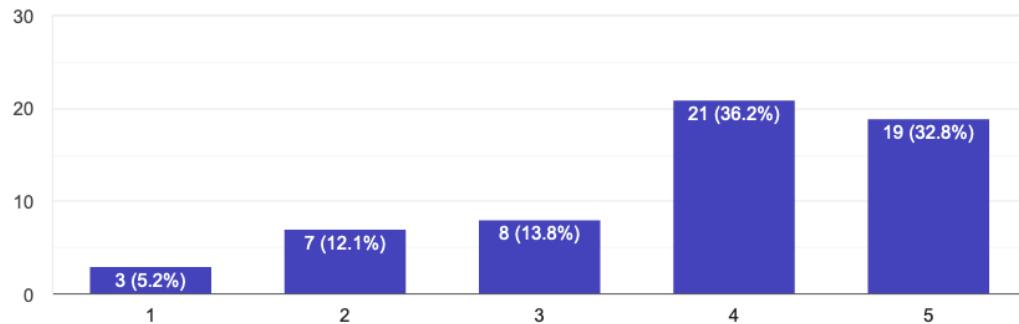
I would like to see advertisements related to my location (e.g. local restaurants)

58 responses



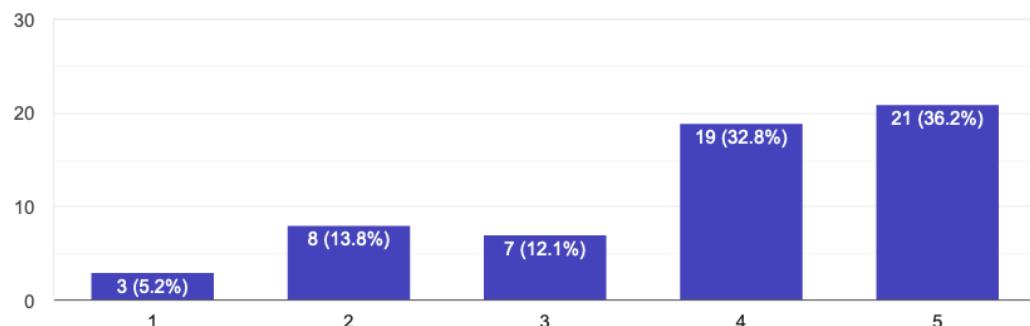
If I really enjoy this application, I will invite my friends to join.

58 responses



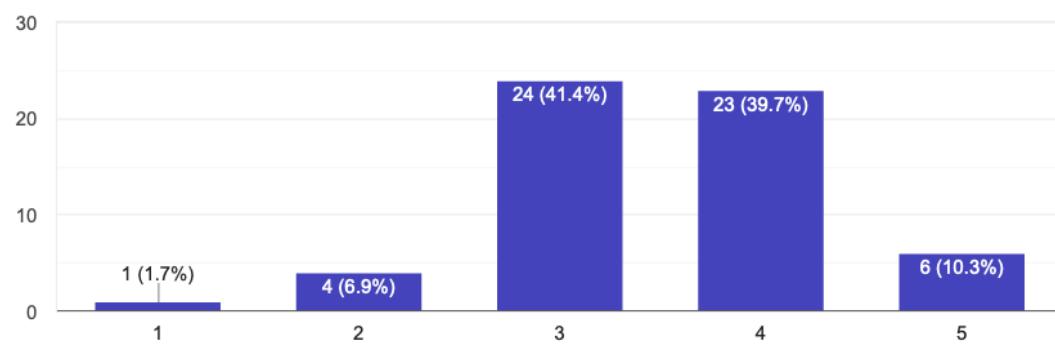
If I would receive a reward, I would invite my friends to join.

58 responses



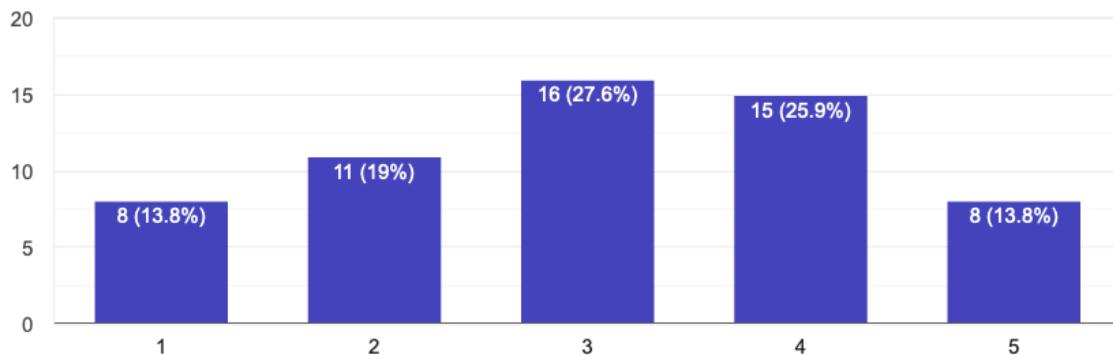
I should be able to view and interact with content of my (previously) owned buildings, even if I am not physically at the location.

58 responses



I want this as an integrated part of existing social media (e.g Facebook, Instagram) as opposed to a standalone application.

58 responses



Additional Remarks:

1. Pls consider the value-add.... rather than AI in this digitally transforming environment...
2. I don't fully understand what the survey is about. I don't understand the advertisement with this woman and her phone on the building.
3. None
4. Yes
5. True
6. I didn't understand the question: I should be able to view and interact with content of my (previously) owned buildings, even if I am not physically at the location.
7. Personalised and location based ads would be very nice if i would know exactly who has my data and what they do with it
8. Last questions were a bit vague as I wasn't informed about any app :)
9. Well done all! I liked the questions :)

Appendix K: Pillar 3 Validation Interviews

1. Quality is more important to me than brand.
2. If my friends endorse an advertisement, I am more influenced by the advertisement.
3. If a famous person endorses an advertisement, I am more influenced by the advertisement.
4. I prefer personalized ads (tailored to my interests) over general advertisements.
5. I would like to see advertisements related to my location (e.g. local restaurants)
6. If I really enjoy this application, I will invite my friends to join.
7. If I would receive a reward, I would invite my friends to join.
8. I should be able to view and interact with content of my (previously) owned buildings, even if I am not physically at the location.

Interviewee 1: The first interviewee believes that quality is a lot more important than brand. She does not really care about brands much. However, she acknowledges that she does want to buy famous brands since many people buy and use them, which gives her the indication that the quality of the product is good. If her friends endorse something, she is very influenced. This is less the case when a famous person advertises something: she understand that famous people are hired and are paid to endorse something, whereas her friends are not making any money when they give her recommendations.

She likes personalised ads: she is more inclined to read them since they seem to be about something she likes. If the advertisements are general, there is a large chance she has no interest in the product or subject at all, meaning she clicks it away immediately. She would like these advertisements to also be related to her location. For example, if she likes Vietnamese food, she would receive advertisements of good Vietnamese restaurants near her current location. Therefore, a combination of both would be ideal for her.

She is not the type of person who easily invites others to join games. Perhaps, if someone asks what she likes to play, she would recommend the game. She would not raise the subject herself. However, she is more inclined to get people to join if

she would receive a reward in return: she says, when you are addicted to a game, you want to gain more points, experience, coins, etc. She does not like inviting people through Facebook, because it feels like spamming. But, for a reward, she is more inclined to do it.

She thinks it is important that, even if you are not at the location, you can still view the content of the building: it keeps you connected to the game. It would make her even consider wanting to get the building back if she sees who owns it and how much support she will need to conquer it. It is important to consider that many people come home after work and want to do a game from their couch without having to go outside. If you have already conquered the building before, you should be able to interact with it from a distance.

Interviewee 2: Interviewee 2 likes to think that she cares about quality more than brand, but she is aware that her sense of quality is often determined through how many people use products of the specific brand. Moreover, she is loyal to some brands, such as Apple: all the devices are connected and she understands the operating system, making her loyal to buy new products from the brand. She loves recommendations made by her friends and she feels those recommendations are very genuine since they do not receive anything for it in return. If a famous person endorses something, she does not feel influenced much. However, she is also not a fan of someone in particular: if someone is a huge fan of a superstar, she can understand how an endorsement by that person could influence an opinion.

In general, she does not invite anyone to any applications. She plays games for her own pastime. She also never connects to Facebook to see how her friends are doing relative to her own progress: she finds games to be addictive already and feels that this sense of competition would ensure she would spend even more time playing the game. She does like personalised advertisements and would like to see location integrated: she claims companies gather the data anyways and if they don't personalise advertisements, they probably could anyways.

She loves the idea of being able to interact with the building over distance. Instead of having a friend list, you could have a building list which you could follow. Usually, groups will start to form that will post regularly on certain buildings. Maybe it would be nice to have themes for different buildings so all the content is interesting to follow. This would also allow for different groups of people to come together as it were.

Interviewee 3: Interviewee 3 prefers quality over brand in all cases. He used to care for brands, but now he has a limited budget and wants to get as much quality as his money will allow him to buy, no matter the brand. He trusts the opinion of his friends and he feels he is influenced when they endorse an advertisement. When a famous

person endorses an advertisement, he is weary: he understands the business model and he knows they are being paid to say what they say. In some cases, it can even have the result that he trusts the brand less than before.

He finds personalised advertisements difficult, since he never really knows how much privacy he loses by being tracked. Every time he receives a personalised advertisement, a little alarm goes off in his head that he is being watched. However, he does sometimes receive discounts on favourite products, which he finds very useful. He would rather have advertisements based on location. However, with the sidetone that the application should only receive his GPS location when he is actually using the application itself. Moreover, he thinks you should be able to turn off GPS location and it would be nice to be able to set a radius for the advertisements (e.g. advertisements for stores within a radius of 5 km).

If he would really enjoy the application, he would tell his friends in person about it. He might even send an invitation through WhatsApp if he really likes it. If he would receive a reward for inviting someone, he would send the invitation link to someone who does not care: he has a couple of friends who don't mind being "spammed" and, if he would get something for it, he would "waste" his invitation in that matter to receive the reward.

He really likes the idea of being able to interact with owned or previously owned buildings. In a way, the building becomes a sort of bulletin board where people can post advertisements or other content. This is specifically interesting for less touristy buildings within villages which friends and family more often visit: it becomes an update for the neighbourhood on all kinds of matters.

Interviewee 4: Quality/Brand: Quality always precedes over brand all the time, but most of the popular brands always keep their quality very high. So, I am someone who looks at both, but definitely quality if i have to choose between one.

Ad endorsed by friends/famous actors: I don't usually make choices seeing the ads, but definitely the word of mouth of my friends who have used the product/service is something I would consider more credible.

General/personalised ad: Personalised advertising, but not to the extent where it feels creepy.

Location based ad: It depends on the situation though, most of the time location based ads are more efficient/effective. But there are times when you might be interested in things that are not available at your current location, the chances of exploring or navigation should be there.

Invite friends based on app experience/incentives: As long as the experience with the app is great and I love using it, I will share and invite friends. Especially if there are things to do as a group (like the forming of armies and dethroning the person owning a building), I will then invite more of my friends. Incentive will be a definite push for making more people to join from my part.

Interact with content of owned buildings irrespective of location: It makes sense to interact. As long as you are the owner, till the validity date expires, or till they are out thrown, they must have the right to interact with the contents, irrespective of their location.

Standalone app/integrate with social media: Best and easy option is to have it as an integrated part of social media.

Interviewee 5: Ad endorsed by friends/famous actors: Friends for sure, it will have more value and I will trust them more. Actors do it for publicity and money, don't trust them at all.

General/personalised ad: As far as i am concerned, if i know very clearly how my data is being used, then I am fine with getting personalised recommendations. I should know about that and it should be my choice (i should sign-up for it).

Location based ad: If I have shared my location with the app, then i prefer location based ads.

Invite friends based on app experience/incentives: If I like the app, I would definitely talk about it with my friends, but it will be mostly limited to people who like these kind of games or apps. If there is an incentive, I will definitely try to share it with much more of my friends so that I also gain something more with the app.

Interact with content of owned buildings irrespective of location: It depends on how long I can own the building. Some of them could be for very short, which are available for interaction only when you are at the location, like main tourists spots and all. Other small less popular buildings can be up for much longer time period, where the interaction could be done at other location, like from the next city or a different place all together. Especially since the main attractive thing about this app is it's location based content creation or the interaction with the content.

Standalone app/integrate with social media: I prefer standalone game app for sure. I am not a huge fan of integrating with social media apps like facebook and instagram. I prefer building a friend circle inside the game and growing there and playing together with other players inside the app.

Interviewee 6: Quality/Brand: I love branded products, I will always chose brand.

Ad endorsed by friends/famous actors: If it is famous and very popular celebrities, I would trust it, if that person has been a loyal or regular face for the brand and so on. Nowadays social media has made us close to the celebrities, it is very easy to understand their personal choices and professional choices.

General/personalised ad: I prefer personalised advertisements, saves a lot of time which goes in searching and finding things in the big pile of advertisements in the digital platforms now.

Location based ad: More easy if it is location based.

Invite friends based on app experience/incentives: Based on incentive for sure. I will be motivated to do so if there is incentive.

Interact with content of owned buildings irrespective of location: Definitely interact with content, whichever location I am at, since it is my building and i own it.

Standalone app/integrate with social media: It will be more easy to use and easy to adapt of it is integrated with any of the already existing social media platform.

Interviewee 7: If a brand with quality, for sure over just quality, because I know it's a well-known brand.

Yes celebrities on ads influence me, but only the ones that I follow.

Friends are the best way to get reviews of products. Since they tried it before, I am super influenced.

Personalized ads are good for me, I am a slow buyer, the more suggestion I get about a product, better for me.

Location based ads are better, because I can verify in physically before buying a product.

Not broadcast t to my friends but tell my close friends, I don't want people to know I'm using.

If there's a reward system, of course I will probably broadcast it to everyone I know.

Yeah, it's kind of like a history for my travelling for me, so I would like to interact with the content

Integration: Standalone, other apps has their own purpose, this should have its own purpose and I think this has a unique value to the users

Interviewee 8: Quality is my first preference.

If I like the celebrity, I am a bit influenced, subconsciously for sure. Of course I will buy if my friends endorse, I actually do this in my real life every day.

I like personalized ads. They give website links for the products that I want that I didn't know before. Location based ad is not really important to me, generalized ads are okay for me.

I don't care. I generally do not tell my friends to use an app. If there's reward, I am encouraged fully to motivate my friends to join.

Yes I would like to interact with my contents on the buildings I previously owned, because what's the point if it is going to be removed, no motivation to put contents in the first place.

Integration: I would like to have this as a standalone app not integrated with others, maybe share things, but not totally integrated.

Interviewee 9: Quality for sure, all the way.

Not super influenced because I know they are doing it for the money, it is like a job to them. If I have similar interest with my friends, I know they are using it, so I'm influenced

Personalized ads: Not a fan of it; it is like invasion of my privacy, but on the other hand it is also handy, but should decrease the vibe of tracking me. Location based ads are very good only when I'm travelling not always.

Only among the friends who I think might be interested in the app. If there's a reward, I will send the invite to everyone personally.

Yes, I would like to have the chance to interact to see my previous contents that I uploaded in the buildings I previously visited.

Integration: I do not care as long as it preserves the major features.

Interviewee 10: For him quality is what matters. Although brands do tend to have an influence but when it comes value for money he prefers quality.

He likes to follow certain campaigns and brands over advertisements but getting influenced just by some promotion is not the case with him. He prefers brands or products that are tried and tested from before than to just blindly follow a commercial.

He is in favor of personalised ads and would like to forward his interests using them. Personalised digital content is the new way of customizing the ad economy he believes.

The advertisements pops and notifications are a big no to him but he would follow events and publications based on his interests but no something that is pushed up through unnecessary ads.

He would love to receive bonuses or benefits in exchange for inviting over friends to the platform and would like to have some kind of sharing flexibility for rankings and game status over other social media.

Would like to have some sort of daily login bonuses to keep the interest of using the app going. Notifications customised to his interests might also persuade him to use or at least visit the app more often

Interviewee 11: For her the choice of brand over quality depends on the type of product she wants to purchase.

Won't easily get influenced by campaigning or advertisements unless something very interesting is being promoted. Usually would prefer going with brands she has always been used to.

She is a staunch supporter of personalised content especially advertisements. Also if there could be some way to showcase the skills or interests she is excited about that would be great.

Doesn't really like the annoying ad pop ups for random products or promotions, would instead prefer genuine promotions from subscribed channels.

She would be interested in online promotions and offers that cater especially to students. But in general won't like to be bugged with ad campaigns that are irrelevant to her.

She prefers the word of mouth kind of marketing to others. But would be genuinely willing to invite friends if that means she receives some sort of recognition for her profile or some other benefits.

She would like to have some kind of encashing of the in ap currency for inviting over friends to the platform and/or if there could be discounts from third party retailers for doing the same.

She would like to see some kind of tutorial or educational interests being forwarded through the platform that could help the users learn some or the other kinds of skills.