Human Centred Design for Long Distance Relationships

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In this modern world, one thing that is happening quite often whether willingly or unwillingly is geographical separation. This thesis focuses on geographical separation which involves people in long distance relationships. I was interested to find out how best technology can be used to support people in long distance relationships by focusing on what they really needed.

People in relationships normally face some challenges with communication and intimacy when the distance barrier sets in. Technology has made it possible for such people to communicate. Communication with people we cherish are sometimes deeper than everyday normal communication. In order to understand the challenges and special needs of these people, interviews were conducted with people who are in long distance relationships or have been in it before.

Through a brainstorming session and analysis of the unique needs of these people, I came up with ideas on how the design of an interactive platform for them would be like. This design aims to help people in long distance relationships connect easily and social presence.

Keywords
User-Centered Design, Social Presence, Human Computer Interaction

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1 Introduction

Keeping in touch and sharing various aspects of our life with the ones we cherish, and love is an important part of any human relationship. In our world today, people are faced with geographic separations in pursuit of work, school or other reasons. This creates problems with communication and level of bond especially from time differences and conflicting work schedules. Walking together, holding each other's hands and smelling each other creates that form of social presence which most of the time people in long distance relationships do not get. Distance therefore has the ability to break bonds, trust and push people away not just physically but emotionally and add whole form of complexity to long distance relationships.

Due to technology, people involved in long distance relationships can communicate and stay in touch with various communication resources available. One thing is that, communication with our loved once goes deep beyond texting and calling. Communication with our loved ones involves going out together, making physical connection and touch, and gifting and writing something by hand (Winter-Hebert 2018). There is the need to feel that sense of togetherness and bond.

This thesis explores the design of an interactive communication platform that creates a sense of social presence for long distance relationships in order to strengthen the level of bond and togetherness. The main area of focus of this thesis is based on three research questions.

1. How do people in long distance relationships communicate and keep in touch using the current technologies that are available?

2. How satisfied are people in long distance relationships regarding the use of communication technologies available?

3. What factors are there to be considered when designing an interactive and communication platform intended for long distance relationships?

This thesis comprises 6 chapters including this chapter being the introductory chapter of the thesis.

Chapter 2 of the thesis throws more light into existing studies and reviews that has been made in Long distance relationships, the general numbers available, the current trend in Human Computer Interaction (HCI) and social presence. Chapter 2 also talks about vari-

ous devices that HCI researchers have discovered to bridge communication gap and increase social presence for long distance relationships.

Chapter 3 sets to talk about the what the research will be about and what approach will be used for the research. This chapter gives an introduction of how the research will be carried and the aim we set to achieve with the research methods used.

Chapter 4 gives a broad insight about the research and analysis of the results. It finds out the various communication technologies used by people in long distance relationships and finds out the reason why they use that. It also finds how satisfied people are using those communication platforms. It as well presents the key findings which will also form a basics of the proposed design of the communication platform for long distance relationships.

 Chapter 5 makes use of the key findings from our previous chapter and present a proposed design of a communication platform for long distance relationships. It also gives insight as to why the proposed design is selected.

Chapter 6 is the concluding chapter of this thesis and gives a summary of all the key findings and the way to go forward.

2 Theoretical background

2.1 Long distance relationship

This thesis focuses on knowing the plight people in long distance relationships go through and finds ways to support them through the design of interactive communication platform. Therefore, I would like to discuss about what is known about long distance relationships.

Long distance relationship is a relationship that the people involved are separated from each other geographically and are unable to visit each other physically without some form of travel expenses (Peterson 2014, 2). The common reasons for this separation are job commitments, studies and military deployments. Statistics have it that, an estimate of 14 million couples define themselves as in long distance relationships out of which 32.5 percent are college relationships (Long Distance Relationship Statistics 2018). Statistics also have it that 40 percent of all long distance relationships end with a break up (Long Distance Relationship Statistics 2018). The general belief of long distance relationships being stressful and problematic can therefore not be overruled (Waterman & Wesche 2017,2).

Some people are of the view that long distance relationships are not so problematic, and the stress and displeasure involved are exaggerated (Stafford 2005). They argue that although long distance relationships suffer less face to face interaction, intimacy can be created from using communication technologies. The problem, however, arises when people involved in this long distance relationships are located totally in different time zones. With video calls especially, the struggle is always with availability and willingness of the other partner to talk (Neustaedter & Greenberg 2011, 2).

Having talked about long distance relationships, we would dive in Social presence and how we will use this idea to support long distance relationships.

2.2 Social Presence

Social presence is the state of being there between two communicators using a communication medium (Lowenthal 2009, 4). Social presence shows how certain acts of communication could create an impression about the person we are talking with. Therefore, social presence plays a role in determining the quality of interaction people have. Certain media are known to create high sense of social presence than the other. The media that create the sense of social presence is what is seen as warm and personal to people (Lowenthal 2009, 4).

People in long distance relationships are interested in new ways of using technology to help their relationships by taking away the distance barrier (Silina & Haddadi 2015). An interactive communication platform or technology can build up long distance relationships by bring a person who is physically absent to mind (Gooch & Watts 2014). Incorporating the idea of social presence into communication medias and devices help create this sense of togetherness.

In communication, the most important thing is hearing what isn't said (Drucker). In the experiment called the Distant heart experiment, couples were given a computational jewellery around their neck to check the receive heartbeat signals from their partner. The fact that the couples were sending and receiving heartbeats signals from their partners on the device created that social presence and they felt connected. Results from the Distant heart experiment showed that couples felt direct intimacy even though there was no language involved (Silina & Haddadi 2015).

Recent technology might help close the distance barrier between long distance relationships. The problem is phone calls and texting alone just create a surface connection when it comes to long distance relationships. HCI researchers have done and are always researching various ways technology can be used to help long distance relationships. Most of the studies done are on how to invoke social presence in communication devices. Majority of the research done is mainly with technologies in the lab or business space. We would look at some technological devices that HCI researchers have found to support social presence for long distance relationships.

2.3   Technological Devices to Support Social Presence

HCI researchers have come out with some devices that are known to support social presence. Some of the devices will be much practical done others in our case for long distance relationship. We discuss these devices and find out what features they possess that increase social presence.

2.3.1   Awareness Systems

Awareness systems in a general view are made to help people maintain equal level of awareness of status and activities even when they are geographically separated (Markopoulos, Ruyter & Mackay 2007). Mostly, awareness systems convey messages that are emotional and lightweight to help create this sense of awareness of each other's activities.

Awareness systems vary from each other in many ways. The method of gathering, communicating and displaying information may differ according to the purpose of the awareness system. Some awareness systems are designed to be mild and demand less attention. They only stay in background and when user feels like communicating, then they come into use (Ijsselsteijn, Baren & Lanen 2003). Others use audio and video approach to provide a face to face type of communication. Some awareness systems are always on even when the other party is not communicating (asynchronous communication). Some convey messages of ambiguity which users will have to find meanings to.

Currently, consumer electronics that are available for use are be been fed with some form of awareness. For example, mobile phones can provide awareness cues to people who are online like sharing of weather information. Also, people having video or audio calls alone create that sense of awareness. As technology evolves, awareness systems possess huge potential for innovation. The reported challenged from using some awareness system is the synchronous nature of communication (Ijsselsteijn, Baren & Lanen 2003). The communication might not be practical for all at the same time. Therefore, an important factor to consider in an awareness system design is how to present the information to the users to fit their activities, context and intentions (Markopoulos, Ruyter & Mackay 2007,3).

2.3.2   Augmented Artefact Communication System

Artefacts are been used by humans now as an extension to support the processing of information. Artefacts used for this technology must be cognitive. Therefore, a cognitive artefact is a physical object that can be modified to help and expand reasoning (Eichenberg 2012, 251). These artefacts are connected such that there is a possibility for feedback. Without having the ability of feeling or touching these augmented artefacts, there will never be a realistic environment (Sziebig 2009, 460). These artefacts can feedback force, pressure, vibration or even heat which is detected by the body by feeling or touching them. Some everyday objects have been augmented with sensors for different purposes. An example of an artefact that has been augmented to form a communication system for long distance relationships is the Hug Over a Distance Technology.

Hug Over a Distance is a technology that makes use of jackets. It is an approach into wearable computing and smart clothes where partners who are geographically separated can exchange hugs (Vetere 2005). In this technology, one partner can initiate a hug which causes the other partner to be notified of a hug. The hug can either be accepted, rejected

or even reciprocated. In this technology, two Personal Digital Assistance (PDA) devices are connected via WiFi or mobile phone using Bluetooth. One PDA device is inserted into the jacket and the other in the hand of the partner which could be used to control hugs. Once that PDA in the hand receives and accepts a hug, the PDA inserted in the jacket gets pumped with air and the air gets released slowly creating some pressure and warmth feeling that is likened to a hug. It then sends a thank you message to the sender.

2.4   Limitations

As discussed above, a lot of work has been put into designing interactive technologies to create intimacy between people and bridge the distance barrier. The work ranges from mobile phone and goes to mimicking certain human behaviours like hugging and holding hands. Nevertheless, there are some drawback to these devices which are above mentioned.

A major drawback will be the provocativeness of some of the devices ((Vetere 2005). This happens because in most of the devices, a person is left to determine the meaning of an act that the device portrays. If that meaning is missed, the whole communication or message will turn to be provocative. Also, if the device is always working and needs responses all the time, it would be frustrating.

3 Methodology

The main focus of this thesis is to find out the challenges people in long distance relationships face and find appropriate design structure to help solve these problems. So far, the theoretical background has discussed the general numbers of people are being separated geographically from their loved one. It also has discussed about some devices which HCI researchers have research to solve intimacy problem for people in long distance relationships. The questions that could be raised about these devices are their practicality, provocativeness and availability for everyone.

Before the research started, I did a study on the general knowledge and problems people in long distance relationships face, so I could have some broad idea about the various challenges. I summarized these challenges into two main headings. These headings are emotional suffering and lack of togetherness. Emotional suffering comes as result of partners feeling disconnected, lonely and empty. The reasons that bring about this problem are time differences, different schedules and feeling of being left out due to lack of physical intimacy (Quara 2018). Also, lack of togetherness is caused by less communication time, misinterpretation of communication and less quality time (Quora 2018). Figure 3.1 and Figure 3.2 summarizes these challenges.
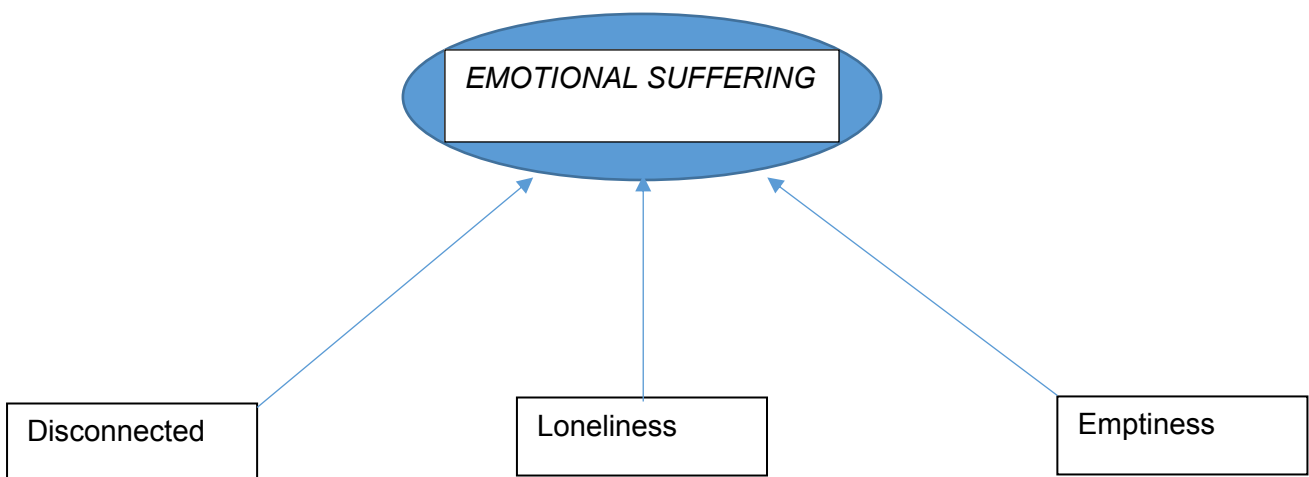

Figure 3.1 Emotional suffering in Long Distance Relationships (Quora 2018)
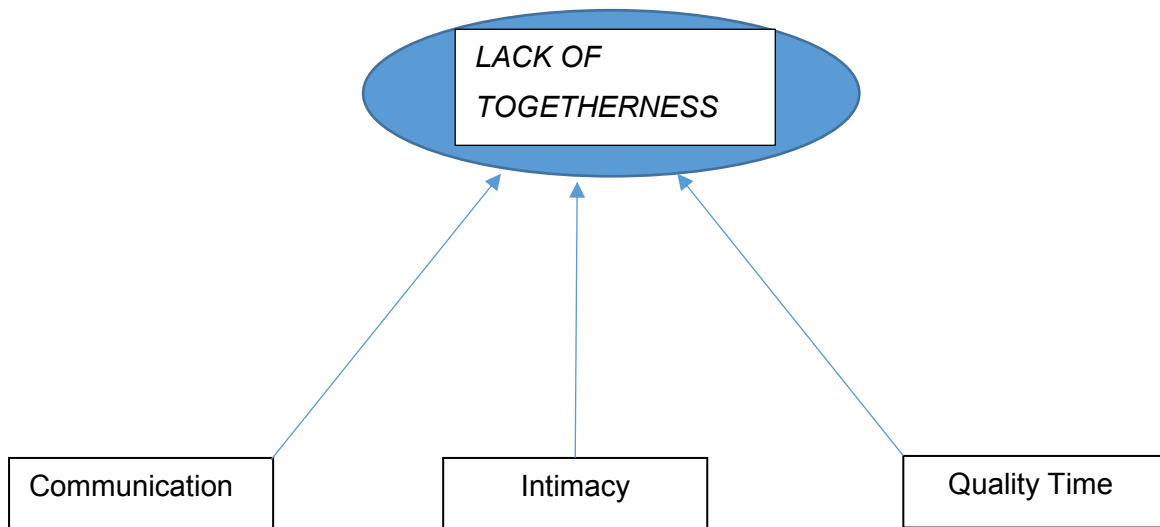
LACK OF
TOGETHERNESS

Communication   Intimacy   Quality Time

Figure 3.2   Lack of togetherness in Long Distance Relationships (Quora 2018)

3.1   Explorative Research

First of all, a comprehensive interview was conducted to find varying level of depth of the topic. This interview was held between people mainly students in Finland who have been or are involved in long distance relationships. I found out about the communication tools they used, and the difficulties involved throughout the separation period. The interview was face to face which started with broad and open-ended questions on the communication medium they used and how they felt using them. This was done to understand how they felt using these media in order to find the best ways to support them. This was then followed by a narrative session and finally a concluding session.

3.2   Generative research

From my findings on the research done, a short group brainstorming session was then done to help focus on a deeper understanding of the concerns raised from the interview in order to know how best to design an interactive platform for people in long distance relationships. A brainstorming session was done with two of the participants who are involved in long distance relationships. The main goal of this brainstorming session was to find various opportunities to innovate in order to help solve the problems people in long distance relationships go through during the period of separation. Also, during the brain-

storming, attention was paid also on whether there was a possibility to improve or update existing ideas to help people in long distance relationships.

4   Research and Analysis

As introduced earlier, various research methods were applied in this thesis in order to find the various challenges that people in long distance relationships face. The first round of interview was a face to face interview. This was followed by a narrative session and the concluding session. All this was done in order to find a design opportunity to solve challenges people in long distance relationships face.

4.1   Qualitative Interview

4.1.1   Approach

Getting the information needed, 10 groups of interviews were conducted. All participants were either currently in long distance relationships or have been in it at some point in time. The age range for the participants was 19 – 32 years. Most of the participants are international students studying in a university in Finland or have graduated from a university in Finland.

4.1.2   User Profile Table

User	Age	Status
Participant 1	24	Relationship
Participant 2	26	Relationship
Participant 3	32	Married
Participant 4	23	Single
Participant 5	28	Single
Participant 6	29	Relationship
Participant 7	28	Married
Participant 8	19	Single
Participant 9	21	Single
Participant 10	25	Relationship

Table 4.1 User Profile Table

4.1.3 Interview Layout

All interview was face-to-face and the duration for each interview was 20 – 30 minutes depending on the narrative section. Some interviews were held at Haaga-Helia UAS pasila campus and also some at the participants residence. Answers from the interview was recorded on a paper for further analysis.

The first part of the interview was focused on getting the background of the participants. The list of questions that were asked the participants are as follows

- How long have you in long distance relationships?

- What is the distance between you and your partner?

- What is your current relationship status?

The second sets of questions in the first part of the interview was focused on knowing the technologies used by the participants in their intimate relationships. This part as well was focused on gathering the level of satisfaction while using these technologies. The list of questions that were asked the participants are as follows

- What technologies or communication tools do you use in your daily or weekly communication?

- What type of direct and indirect communication do you have?

- What is the level of intimacy, happiness and overall satisfaction from using these technologies in your long-distance relationships? Give this answer on a scale of ten.

The next part of the interview was the narrative section. This was in a form of storytelling. In doing narrative research, we are always able to see hidden layers of meaning to the subject (Squire, Andrews & Tamboukou 2013). Storytelling is always a great method to communicate ideas. The questions were also directed at acquiring various design opportunities based on the stories told by the participants. The questions that were asked the participants are as follows

- Tell about your latest communication with your partner. The tool used and in what situation. Just talk about the whole process

- Tell about an experience or anything that will always remind you about your other partner.

The last part of the face-to-face interview was a photo study. Photographs are best when studying interactions and emotions (Kobayashi & Fisher 2008). The photo study was done to find the visual representation of the world of the participants in order to inspire the design. In the photo study, participants were asked

- Snap photographs of what experiences or places that reminds them of their partners because of the good memories it brings.

- Snap photographs of whatever that it is that reminded them of their other partner.

4.1.4   Selected Groups

Seven participants from the user profile table were selected based on a strong common theme and their contribution to the research. Three participants were dropped as the distance from their partner was close and amounted to nearly daily visits. The results were represented visually for a clearer understanding.

Group 1

Group 1 was a participant who have been in a relationship for 2 years out of which 1.5 years have been long distance. The partner lived in a different city in Finland and therefore they saw themselves once or twice in a month. They used phone calls mostly to communicate and sometimes text messaging. Once in a while, they would communicate via Facebook and email. Group 1 was fairly satisfied with the communication tools they used.
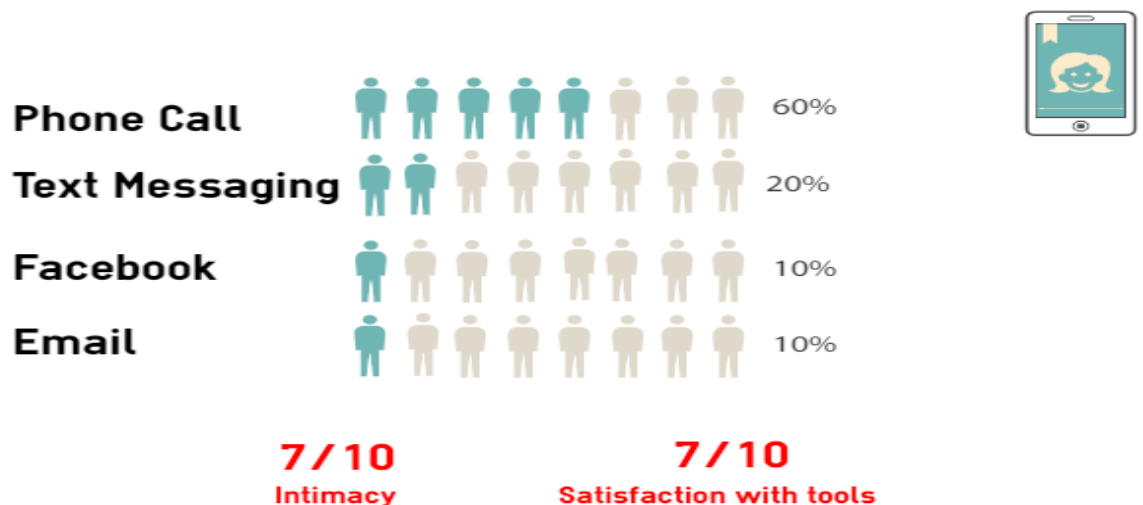

Figure 4.1 Group 1

Group 2

Group 2 have been in a relationship for 4 years out of which 2 years have been a long distance one. They lived in different cities in Finland and met 2-3 times in a month. The primary source of communication was phone calls. They used WhatsApp as well sometimes. Group 2 reported having problems with trust when the long distance relationship started and therefore reported an overall bad satisfaction with long distance relationships.

Phone Call   70%

WhatsApp   30%

7/10
Intimacy

6/10
Satisfaction with tools

Figure 4.2 Group 2

Group 3
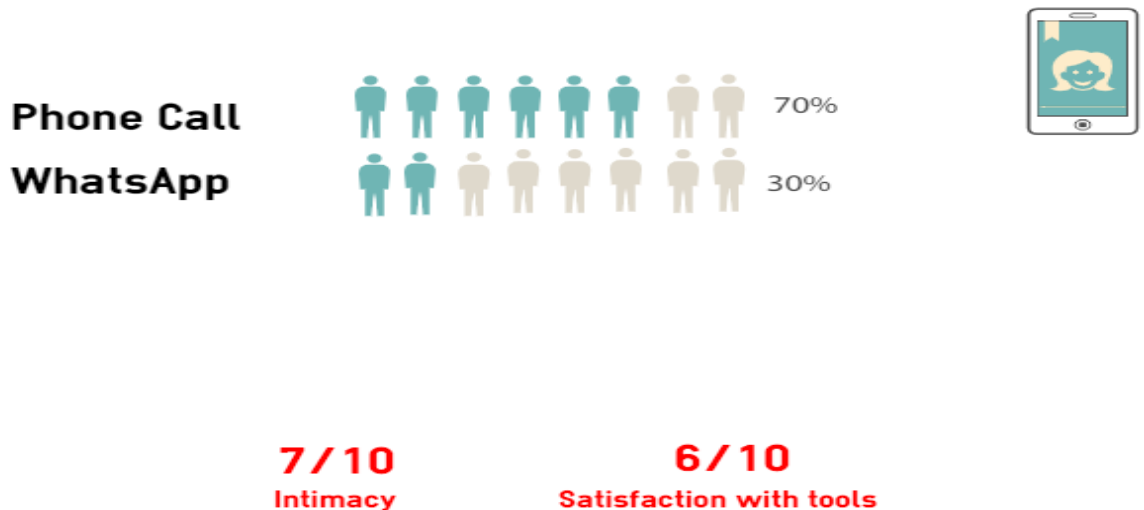
Group 3 is a couple who have been married for 5 years with the last two years been a long distance one. They live in different countries with 3 hours' time difference between them due to job commitments. They met each other once or twice in every three months. Their primary source of communication was texting on WhatsApp. They used FaceTime as well. Group 3 was satisfied with the tools used.

Whatsapp	60%
Facetime	40%

9/10
Intimacy

8/10
Satisfaction with tools

Figure 4.3 Group 3

Group 4

Group 4 has been dating for 3 years and have been in a long distance one for close to a year. They live in different countries with 9 hours' time difference. They used mostly online platforms as their primary source of communication. Group 4 reported quite low intimacy as the long-distance relationship started.

Whatsapp	30%
Facetime	30%
Facebook	20%
Skype	20%

5/10
Intimacy

6/10
Satisfaction with tools

Figure 4.4   Group 4

Group 5

Group 5 has been dating for 2.5 years out of which two years is a long distance one. They live as well in different countries with 7 hours difference in their times. Group 5 reported to

use Skype almost all the time for video calls. Couple 5 was not so happy with the long-distance relationship.

Skype

WhatsApp

90%

10%

6/10
Intimacy

6/10
Satisfaction with tools

Figure 4.5

Group 6

Group 6 have been together for 2 years with 14 months been a long distance one. They lived in different countries with 10 hours difference in time. Their primary source of communication was texting on WhatsApp. They used Skype and facetime rarely due to their tight schedule and huge time difference. Group 6 used Skype and Facetime to mainly to cook or show each other's room. Group 6 was satisfied with the level of intimacy although they had less voice calls. Group 6 also recorded sending letters and postcards once in a while.

WhatsApp

Skype

Facetime

80%

10%

10%

9/10
Intimacy

9/10
Satisfaction with tools

Figure 4.6 Group 6

Group 7

Group 7 has been married for 8 years and with the past two years a long distance one. They met once in every year for this two-year period. They lived in different countries with 5 hours difference. They relied on WhatsApp for both video, audio and messaging because they thought WhatsApp serves the purpose of other communication channels. Group 7 recorded overall lack of satisfaction in the long-distance relationship

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WhatsApp ♟ ♟ ♟ ♟ ♟ ♟ ♟ 100%

6/10   5/10
Intimacy   Satisfaction with tools

Figure 4.7

4.2   Qualitative Analysis Technique

Qualitative analysis is used to understand data that is difficult to quantify especially in this case that it has to do with what is feels like to experience a situation. After the face-to-face interview, I read the responses of the participants a number of times and made my notes. The notes were mostly on the experience and observations I made during the interview session. I made short phrases from the responses which were made by the participants. In qualitative analysis, it is a good practice to transform notes into emergent themes (Pietkiewicz & Smith 2012). I grouped these short phrases and looked for connections between them. Similar ones were combined as one.

4.3   Key Findings

From analysis of the of the responses from the participants, I came up with some themes that were common and accounted for certain responses by the participants. Coming up with these themes, I had the design of our interactive platform in mind. Such that these themes should be considered in our design.

The first theme was time and effort. This was very common with most of the participants especially those with huge time difference. It is very important to understand the daily activities of your partner so that they might not be disrupted by phone calls or whatever. There is an instance where a participant said, "It is very irritating after a bad day or a fight and all you want is to be left alone and your partner keeps calling and texting you". Also, with this time factor, some participants recalled that sometimes they feel pressurized to return a phone call or respond to a message. Some participants were very much satisfied with a simple text from their partners to show that they had them in mind. With the issue of effort, some participants thought just sending a text message demanded very less effort and would prefer postcards once in a while. Some also said that effort by their partners in gifting also reduced as they were in long distance relationship.

The second theme was responsiveness. Different communication media have different response rate, and some have different times of receipt. Some communication tools don't allow communication at a point especially phone calls when one phone is off. Also, with text messages when you don't know when message has been received or not.

The last theme was personal connection. Some communication tools like video calls were recorded to improve personal connection especially when the subject was of interest to both partners. One participant said he had video calls with his partner when watching movie and cooking, so they could watch the movie together or cook together. Although this did not frequently, they felt very satisfied and felt the sense of togetherness.

Theme	Example responses
Time and effort	"We cannot do anything fun together because of the big time difference" Xie 24.
	"My boyfriend didn't like both phone and video calls so much and there weren't any other ways to communicate except these, so our intimacy level reduced "Barbara 23.
	"I don't mind deleting some messages from my phone to save my phone from running too slow, but letters and postcards received were kept with high priority, the effort just makes it attractive and brings me excitement" 32 Kayo.

Responsiveness	"Sometimes if it takes too much time for me to get response, I begin to worry if there is some problem with her "Louis 29.
	"The fact that I always have to wait for him to answer before we have phone calls and video calls makes it inconvenient, it makes it seem that you can't do anything fun together when both are not fully free at the same time" Xie 24.
Personal connection	"We use video call when cooking sometimes and it makes me feel we are in the same room" Frank 28.

4.3.1 Common Situations

From our narrative section, there were some activities and memories that were shared by many participants to be of key value. Some of these activities were their best memories with their partners, some reminded them of their partners and some brought intimacy to them.

Among all these, sharing was the most common situation. Sharing included sharing of activities and location sharing. The second thing was most shared in the narrative section was gifting. Gifting included surprises, postcards and written letters.

Event	Number of Responses (out of 7)	Percentage
Sharing	4	57%
Gifting	3	43%
Travelling	2	29%

Table 2.. Response from narrative session

Figure 4.8 Common Activities from Narrative session

Posted cards and Letters

During the narrative section, people gave account of how a posted card from their part-
ners brought so much memory. Phone call and text messages were used frequently but
people actually valued the handwritten letters and postcard sent them. Also, from re-
search analysis, the number of letters exchanged by people in long distance relationships
had effects on their level of intimacy and overall satisfaction (Guldner 2013).

One participant reported that she deleted messages received from her partner from time
to time when her memory was full in order to have enough memory, but letters or postcard
was always kept.

Location sharing

Sharing of location was as well common to most of the participants. Most people thought
that their partner sharing locations with them made them feel closer to their partner. Most

people used it when traveling to see their partner to avoid asking for update of their whereabout all the time. Although some people thought it was good, others raised issues about privacy invasion associated with location sharing.

4.3.2 Picture result

Participants showed pictures of what brought them memories of their partner or reminded them of their partners. The pictures that was shown were mostly gifts and souvenirs. All these pictures carried meanings that were meaningful to the participants. Some participants showed pictures of jewellery scented with perfume of their partner. Other showed pictures of items they got on special days in their lives. Some also showed pictures of things they both like doing together.

4.4 Characters

Different personas were drawn from the participants who took part in the interview. Generating personas is functional way of putting data into commercially useful form and gives an idea about how a typical person using a product or service would be like (DiMarco 2017, 97.). Different profiles were built from the interview to clearly understand the pain they go through.

4.4.1 Traveller

Traveller character refers to participants who have huge geographic difference between them. They live mostly in different countries and even continents and rarely see each other. There is normally huge or some form of time difference between. Their major frustrations are

- Sometimes due to huge time difference, it makes communication harder. This eventually might lower the level of bond. Free time for one might be the sleeping or working time for the other. It becomes difficult to always keep track of what the other partner is doing in order to do things you like doing together.

- Hard to communicate on interesting topics or do interesting things together.

4.4.2 Commuter

Commuter character refers to partners who live in different cities in the same country and see each other quite often. These people normally travel to see each other by train, bus or drive by themselves. The major frustrations that most people face are;

- Calling each other all the time makes it a little bit frustration. For example, at a point when one is lonely and feels to call the other partner whiles the other partner is also hanging out with some friends.

- Travelling frequently just to keep up sometimes stresses them.

4.5 Design Focus

From the various parts of the interview and the responses that I got, the broad ideas that came out that could solve major problems among people in long distance relationships are sharing, syncing and gifting.

The design therefore will focus on enhancing social presence where both people in long distance relationships can do something they love together to create the sense of togetherness. The design will also focus on making sharing between people in long distance relationships easy and convenient. Lastly, the design will find ways to make sending and receiving of gifts like postcard easy in a digital way.

5 Ideation

Based on the results from the research and the summed-up picture story I made, I had a brainstorming session with two other participants to come up with an ideal solution to help people in long distance relationship.

5.1 Brainstorming session

To begin the brainstorming session, I presented to the participants the results of the research and the major findings from this research. The duration for this brainstorming session was about 45 mins to an hour. The purpose was to come up with ideas to support people in long distance relationships based on their problems and the concerns raised from the research.

During this session, I made each of us to come up with ideas based of the findings presented. We came up with different ideas and finally grouped them into 3 major themes which were sharing, gifting and syncing.

5.1.1 Sharing

Many ideas came up under this broad topic of sharing. The ideas that came up were sharing location, sharing of meal, sharing of daily activities, working out together, watching movies together, sharing of media and easily browsing daily activities of partner.

5.1.2 Gifting

The idea of gifting was also raised with the idea of surprising your partner with a gift. The gift could be in a form an already paid gift or souvenir that could be picked up by the other partner or a digital gift with some notes attached.

5.1.3 Syncing

The points that were raised in this section was mainly focused on syncing local time zones and temperatures of partners together. Also, syncing calendar with events and schedules of partners together. With syncing, it will help partners who when is right to talk and when not right to talk.

5.2 First round of ideas

Barbara who was a participant from the interview lives in Finland and her boyfriend lived in Mexico which is eight hours' late from Finland. Barbara studies and work. Her boyfriend only works. There is barely a time in a day that their various schedule meet except on Saturday afternoons. They have video calls on Saturday afternoons. If something comes up and they can't have the video call, they go weeks without talking because Barbara thinks texting is not fun and doesn't increase their intimacy. Barbara thinks her effort can't change much since there is nothing fun they can do together in their relationship due to the distance. How can technology help someone like Barbara?

After the brainstorming session with two other participants, I polished these ideas to our first model of features our interactive app should have.

5.2.1 Syncing Media

Syncing of Media is a feature that the long distance relationship application should have. The application should have the ability to stream music, movies and videos online. With this feature, both partners can register and watch same movies or videos at the same time with both partners having keys to control the media playing. Both partners can choose to pause, stop or play the media that is playing. There should also be a comment section below the media where partners can communicate there. Partners can choose either to switch their cameras on to see each other while watching whatever is that is being played (Figure 5.1).
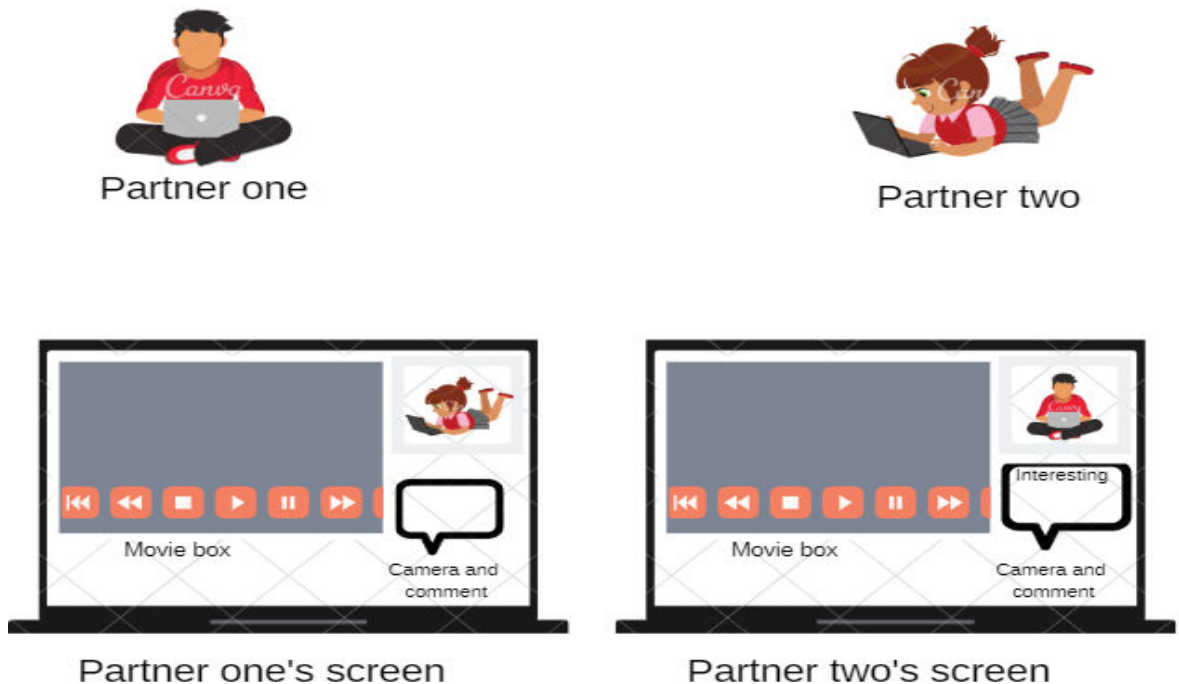

Figure 5.1 Syncing media

With this syncing of media, the needs that will be addressed include

- Allowing partner to do what they love doing together like watching movies, music and videos together. This is much easier than switching phone camera on a screen to watch whatever is being played.

- With the controls on both sides, regulating whatever is being played becomes easier for both partners.

- For partners who wouldn't like to switch on videos, the comment section makes it easier to talk while enjoying your movies together.

5.2.2 Gifting Service

With the gifting service, both partners could have an account that they could use to place an order for each other. Order could be anything from paid meals to souvenirs. The placed order could be sent as a surprise from partner 1 to partner 2 with details of the pick-up point. It is only when the partner 2 has picked the order that he or she will know what partner 1 sent (Figure 5.2).

Partner 2 receives an order from partner 1

Partner 2 goes to the pickup point with the details

Partner 2 picks up the order and finds out what it is
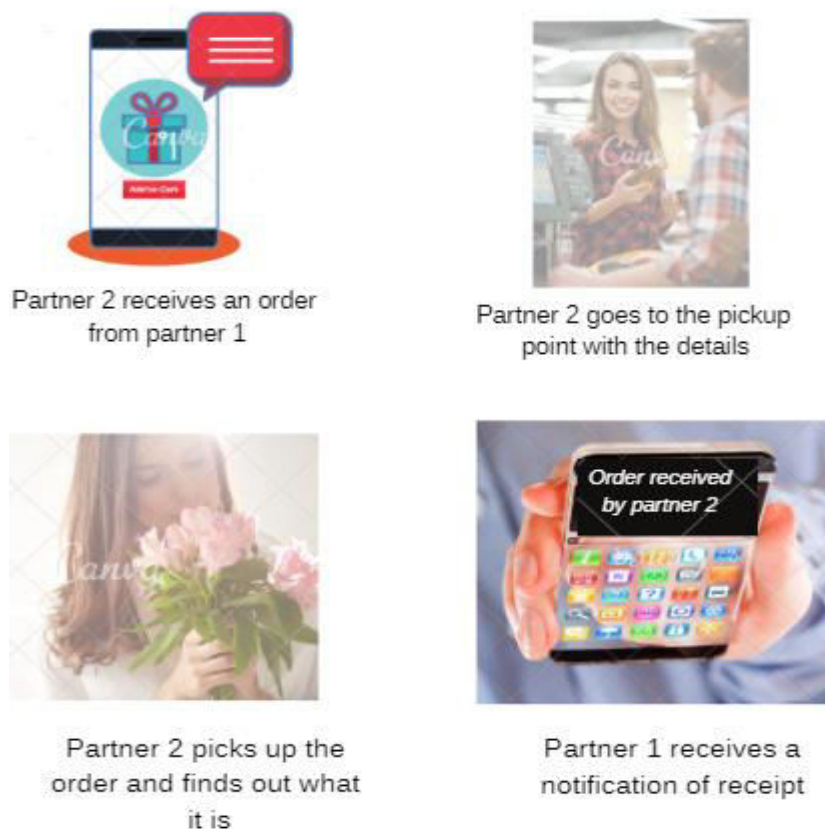
Partner 1 receives a notification of receipt

Figure 5.2 Gifting service

With this service, it is going to create the sense of effort in maintaining the relationship. Also, partners will get to know how well their partners know them by sending them specific gifts at specific period of time. The suspense of not knowing the gift adds some form of excitement and eagerness to claim the gift.

5.2.3   Calendar and Messages

The calendar and messages feature fuses together messages that has been exchanged between partners and the calendar. This would make it possible for partners to search for messages that were exchanged on a specific date. This feature will also allow partners to search for keywords and will generate conversations based on the specific keywork. With this, partners will find it easy searching for past conversations and also some topics that have been discussed.

5.3   Prototype Evaluation

After the first round of ideas, I did a quick prototype evaluation with some participants to find out what they thought about the design. Most participants fell the design was ok. The concern that was raised by a participant was that communication shouldn't involve heavy input. Communication should be such that it wouldn't require both partners to always be there and active before it could happen. He thought that communication that involves such heavy input all the time overburdens the partners and does not occur naturally.

5.4   Final round of ideas

After my first round of ideas, I compared it with the key findings of the research and also the feedback from the quick prototype evaluation. The main goal here was to find how best I could improve upon the first round of ideas. After some comparison, analysis and reading, I came up with the final three features that our interactive app for long distance relationships should have.

5.4.1   Media Syncing

With the final round of design for media syncing, I put into consideration people who have huge time differences between them and their partners. In such a situation while one is asleep, one is awake. As such, a comment section was added such that when one partner

is playing a media, he or she can leave a comment. When the other partner is playing the media later, he or she can read the comment posted at that specific time (Figure 5.3).
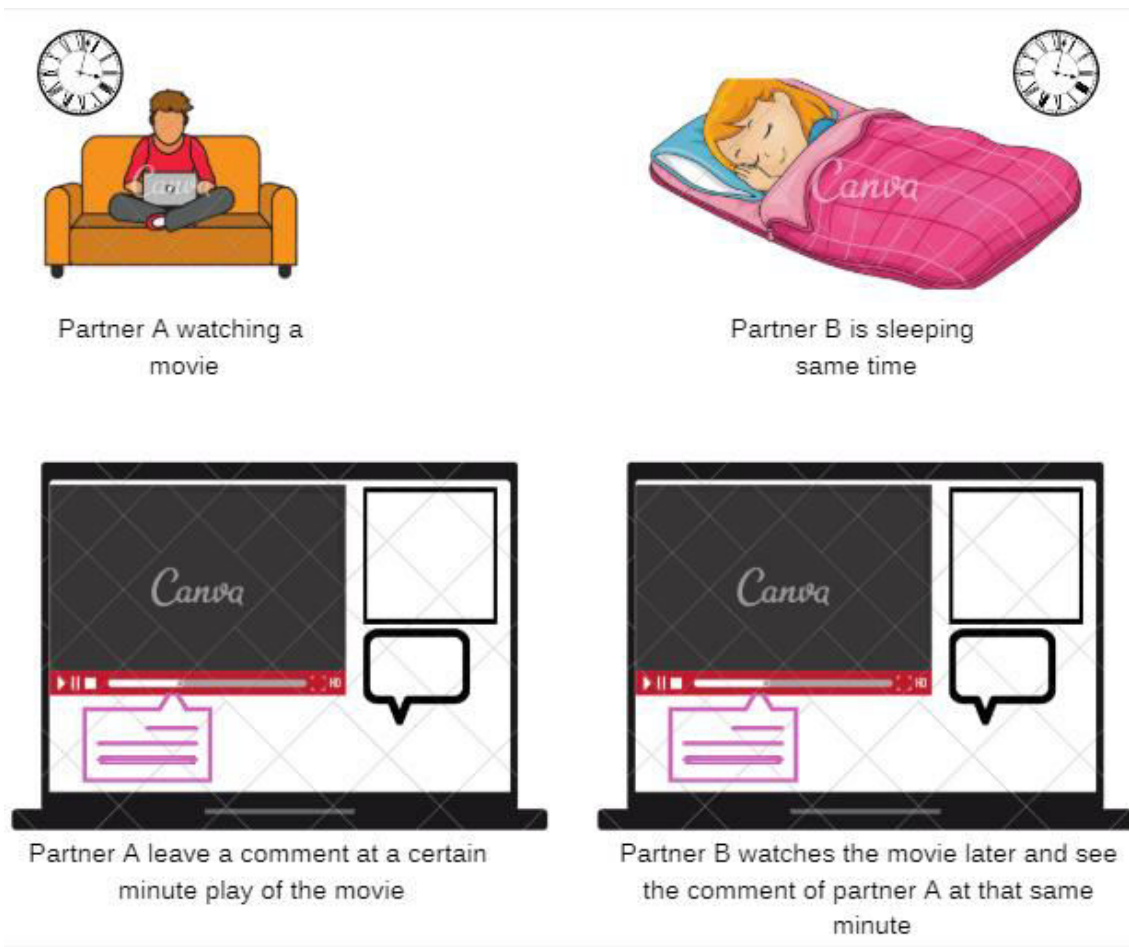

Figure 5.3 Media Synching

5.4.2   Gifting Service

With the gifting service, the refined design will include location service to make it function better. Partners can register as a couple. Once partner A logs in, he will see a list of stores or businesses that sell meal, drinks, flowers or whatsoever gift within the same location as partner B. partner A can just make an order for partner B and send it as a surprise to partner B. Also partner A can choose to add a message to the ordered item. This doesn't really send location details to partners but with the fusion of the location feature, it will make it easier for orders to be picked up conveniently for partners. The fact that the sent gift is not known by the partner makes it adventurous and keeps it fun.
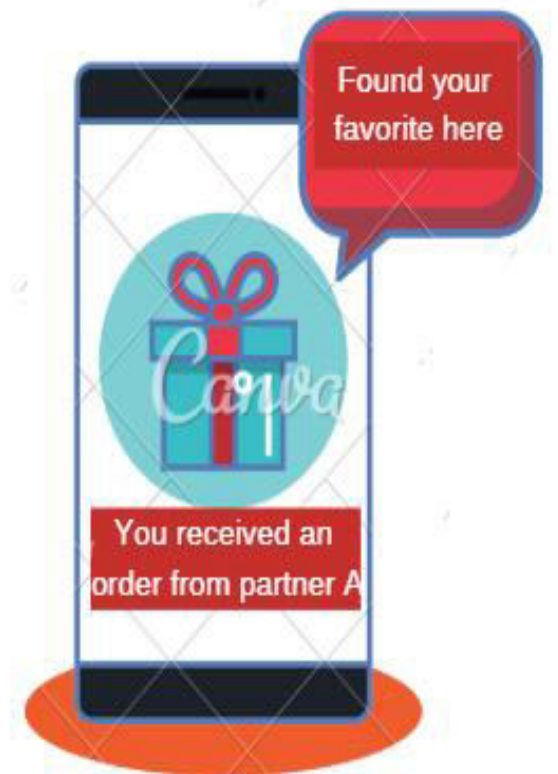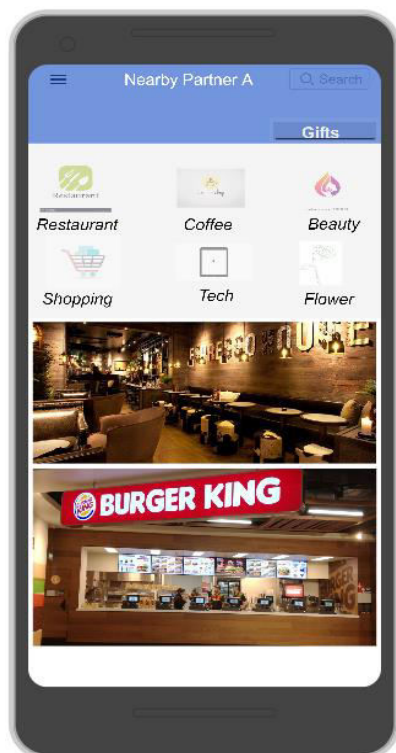
Figure 5.4 Gifting service

5.4.3 Calendar and Messages

The calendar and messages feature displays the time and temperature of one's partner on the screen. This feature allows partner to sync and share each other's calendar with daily events easily. Also, it should include feature that allows partners to search for conversations easily by date and keywords.

6 Conclusion

Long distance relationships now constitute a significant portion of young adult and mostly college students. This thesis was focused on finding how best technology could be used to support and maintain long distance relationships. Both the qualitative research method in the form of interview and the generative research method in the form of brainstorming helped in understanding and concerns and needs of people in long distance relationships.

The results that was got from different interview methods helped in getting different angles of the subject and also our final design. Coming up with the final design, I considered the needs and the challenges and made sure the design fits most of the core challenges raised during the interview. Long distance relationships can be a bit challenging but with an interactive application that allows partners to do more interesting stuffs together and communicate in a natural and relaxed way, it will become much interesting.

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