Ethnography on Skype

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Abstract – This report presents the findings gathered from ethnography studies conducted on six Skype users. After evaluating the data gathered from our observations, we were able to identify the general Skype work practices, issues and problems related to the application, and we were able to suggest improvements for redesigning of the application. The participants belonged to different countries and had a different level of understanding when using Skype. The Ethnography was conducted in The University of Nottingham and participants were observed taking field-notes, recoding video and snapshots which is a part of observation process conducted.

Index Term – Connectivity, Photographs, Recording, Skype, Research Questions,

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1 Introduction

A Survey is a quantitative evaluation process we also needed a qualitative method as well. After conducting the evaluation of Skype using the survey method, the ethnographic method of evaluation was also done. The main purpose of doing a different process was to check if both the results match. From doing the two methods we can also find which process helps more in doing micro evaluation of different parts.

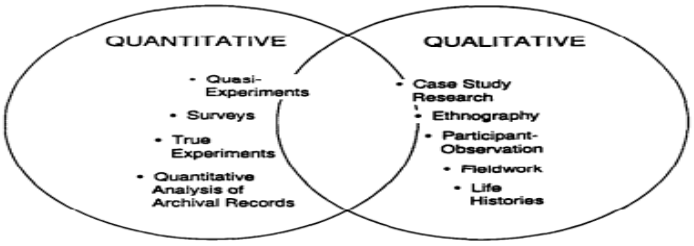

Figure 1.1 Evaluation methods [1]

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1 1.1 Method used and how it was administered

The method used for evaluation was ethnography. Each of the group members did ethnographic observation on an individual. Some members did this process for a week while others did the process for a one hour session. Videos were recorded for a later analysis. A post interview session was done to collect more information. Responses from 6 individuals were collected and the observations compared and compiled.

1.2 Key results

The ethnography results for six individuals presented us with varied user behavior and good opportunity for analysis. After thorough study, Skype usage was broadly generalized into six steps. The process starts with the user starting the device on which to use Skype, followed by a sign in. Once the user is online, the user searches for contacts and makes a conversation. At the end of the conversation, the user can use other conversations/interactions, or quit Skype – marking the end of the process.

The analysis showed that voice and video calls are the most commonly used features of Skype, while screen and file sharing were the least used features. The study suggests that users are overall impressed with Skype, with the exception of connectivity issues. The study covered users using Skype on desktop and mobile devices; 3G networks and Wi-Fi networks, to get a clear and generalized opinion on Skype and its services.

1.3 Recommendations for Redesign

After analyzing the data gathered from our observations, we identified three major issues users face in interacting with Skype application; connectivity issues during video calling, slow file transfer speeds, and defects in the Skype mobile applications. Under section 5, "Implications for Design" we have suggest ways to improve the software and address all of these issues.

2. Fieldwork and Ethnography

"The general enquiry goals and methods of anthropological, ethnography and naturalistic qualitative enquiry in evaluation have much in common. The terms of ethnographic, naturalistic and qualitative have come to be used among evaluators as interchangeable, generic labels for fieldwork techniques. In ethnography, anthropological theories and concepts link the goals of the enquiry with the fieldwork method, contributing to reality control and thus to quality control." [2]

2.1 Why and when to use a qualitative method of evaluation

1. Cannot be done experimentally of for practical or ethical reasons.

2. Drills in depth into complexities and processes.

3. Deals with unknown societies or innovative systems.

4. Deals with real as opposed to stated organizational goals.

5. Involves variables that have yet to be identified.

6. Seeks to explore where and why policy and practice have not worked.

2.2 Why we prefer Ethnography over other Qualitative Methods?

1. Participant observation:

We wanted a naturalistic research testing with the participant and understand the issues.

2. Long-term contact:

Some of the observations were done in a period of a week to get a complete and precise analysis. This allows the researcher to experience the regular patterns and routines of the community/organization of study, as well as seeing how it responds to novel situations.

3. The researcher as learner:

The researcher assumes a role where they know very little and are in the research setting to learn. This contrasts with the conventional quantitative paradigm where the researcher is often presented as an 'expert' in a particular area at the outset.

4. First-hand information:

The Information is gathered directly from the respondent. This helps us to understand the structural complexities better.

5. Reflexive:

Fieldwork involves a dynamic form of data collection that evolves and is self- correcting. Initial interviews and observations are used to fine-tune the research instruments or redirect the research process. New knowledge and information are used not only for understanding and explaining the research object but also for adjusting the approach, design, and methods so that the research topic can be studied more effectively.

6. Comparative:

It helps us to compare the results from different researcher. Comparison can be made on respondents from different cultures, sex and age group.

2.3 Process of Ethnography

1. Looking (Observation):

This refers to the process of observing the respondent using the software in our case. This can be done by taking notes during the observation process or a video can be recorded to do the same. It's important that the respondent feels comfortable while you are observing him/her. The researcher becomes a learner here, the only duty of the researcher being to observe the respondent and try to understand the methodology he/she follows. Researcher is not supposed to ask any question or give suggestion during this observation process.

2. 2. Asking (Unstructured Interviewing):

The second part is asking question to gather more information. The researcher can also give suggestion if he/she thinks it might help the respondent. This interviewing process is not a structured one the researcher asks question based on the previous observation. The answers can be descriptive or precise.

3. 3. Analysis of Data

☐Data reduction: Is the process of reduces the 'rich' data into key aspaspects of the issue in question. It is done to focus data further collection, sampling and methods. What this actually involves is

the careful reading of the recorded material to identify the main themes.

☐ Data Organization:
Is where information about certain themes and points are collated. This information is categorized in more specific form.

☐ Data Interpretation:
This is the step where decisions are made and conclusions are drawn. Patterns and regularities are identified, and explanations offered.

This explains why, how and what we did in the process of ethnography. Ethnography gave us both the quantitative and qualitative analysis.

3 Practicalities of Fieldwork

The study of Ethnography observes user behavior in field-work based projects. The observation spans from observing the user, to taking field notes and recording his activities on video and photographs. We focus on the process of discussing common ethical question with the user in association with the fieldwork. The Ethnography study was conducted on users who uses Skype for video calling with friends and families, the objective of the research was to collect the data we observed from the participants in the field-work. Each member of the group observed the participants according to their level of understanding the user behavior by drawing judgment and conclusion. The objective of the research was done on the basis of following methodologies:

1. Understanding how the participants use the Skype software – finding out how familiar he/she is with Skype.

2. Understanding how the software (Skype) has been part of their life. – understanding how participants incorporated Skype as part of everyday communication more than just for special occasions.

3. Plotting down the tasks that were observed – taking field-notes, recoding video and snapshots of the user is a part of observation process conducted.

4. Observing the process of work flow of each participant during specified activities.
– pointing out general activities and actions performed during the whole process.

5. Specific Questionnaires were asked during the process –

☐ How do you find Skype useful?

☐ Do you use Skype very often?

☐ Can you please tell what activity are you now performing?

☐ How useful is the screen sharing feature to you?

The Goal of the research as an Ethnographer understands the user behavior while he uses Skype to communicate with his friends and families. More study on the user is done to judge his reaction and emotional and comfort level while he is using Skype. All the participants elected belong from different countries. The participants are currently studying at the University of Nottingham and all of them are students and some of them
Are doing their master's degree. The detailed list of participants is given below:

No.	Participant Name	Gender	Occupation	Nationality	Age
1	Siddharth Dodhala	Male	SW Engineer	Indian	24
2	Aun Mohammed	Male	Student	Pakistani	18
3	Mohommad Rafeel Akhtar	Male	Student	Pakistani	18
4	Bassel Roumani	Male	Student	Syrian	24
5	J. Vaishnavi	Female	Student	Indian	20
6	Kasra Babaei	Male	Student	Iranian	25

Figure 2.1 Participant details

All the participants mentioned above belong from different ethnic origin and educational backgrounds. The elected participants were all from the same Universities and it helped to maintain the comfort level factor as they were used to adopt the mixed culture relationship.

Information consent was addressed by having each participants complete a signed [Ethnographer Signature] printed format of the Consent Form. After reading through all the agreement and understanding the terminologies the participant signed the form confirming that they are of eligible age limit and understand all the terms and condition.

.The consent form was an agreement made in favour of the participant that their images
And videos won't be revealed and will be kept strictly confidential in terms of public use.
The signed consent form has been attached to this report.

The research was conducted on the basis of mutual convenient time of the researcher and the participant. The approximate estimation of time for each individual research patterns are as follows:

1. Participant 1: Approximate 5 hours at ethnographer's residence
2. Participant 2: 1 hour and 30 minutes at participant's residence
3. Participant 3: 1 hour and 30 minutes at participant's residence
4. Participant 4: 1 hour at the University of Nottingham
5. Participant 5: 3 hours and 30 minutes at participant's residence
6. Participant 6: 1 hour and 15 minutes at the University of Nottingham

The research was conducted at different location as some participants preferred the research to be conducted at home and some at the university. Keeping in mind the comfort level of the Participants the location decided by the participants were not altered.

The data were gathered on the basis of following manner.

1. Video Recordings
2. Field Notes
3. Screenshots
4. Photographs
5. Recordings

Data gathered was on continuous occasion during the entire process of research. The collection of data was ensured in an effective manner. All the data observation gathered were used for further analysis to observe the body language ,stress level , activities and other relevant factor

4. Results

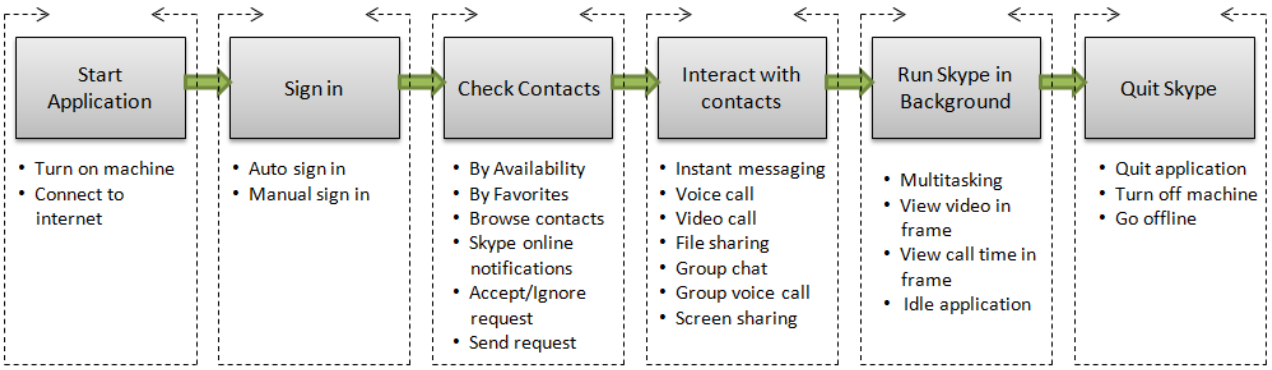

Figure 4.1 Map of activities

4.1 Start application

Before starting Skype application, all the participants had to switch on their laptop computers. After login in to their operating system, the users established a connection to Internet. This was done either by connecting the 3G USB modems to the laptop or by connecting to a Wi-Fi Network. To start the Skype application, users double-clicked the Skype icon on their desktops or clicked on the Skype application in the start menus. Once this action was performed, the Skype application started and the login screen to enter the Skype username and password was shown. For

users who enabled the option to start Skype when the system starts, the application automatically started and appeared in the notification area of the task bar right after login into the operating system. The icon in the notification area was White to indicate that it is not signed in.

In the case of mobile devices, the application automatically started when the mobile phone was switched on. It remained inactive as one of the background processes. The mobile users had to use 3G mobile network or Wi-Fi network to connect to the Internet.

4.2 Sign in

Our observations revealed that after starting Skype application, there were two methods to sign in to Skype user account. One method was manual sign in where the user had to key in the user name and Password in the Skype login screen shown in the application interface. If the user had used the application to login to his account before, the username will be saved and shown during this stage. Therefore, users only had to key in the password in order to sign in.

The other method used was the automatic sign in. For users who had activated this feature, Skype application remained idle in the background and once connection to Internet was established, the application automatically signed into the user account by using previously saved user credentials. The sign in process in mobile phones was similar where the application automatically started and signed in to the user account when an Internet connection was established. The icon in the notification area turned from White to Green indicate that it has successfully signed in to the user account

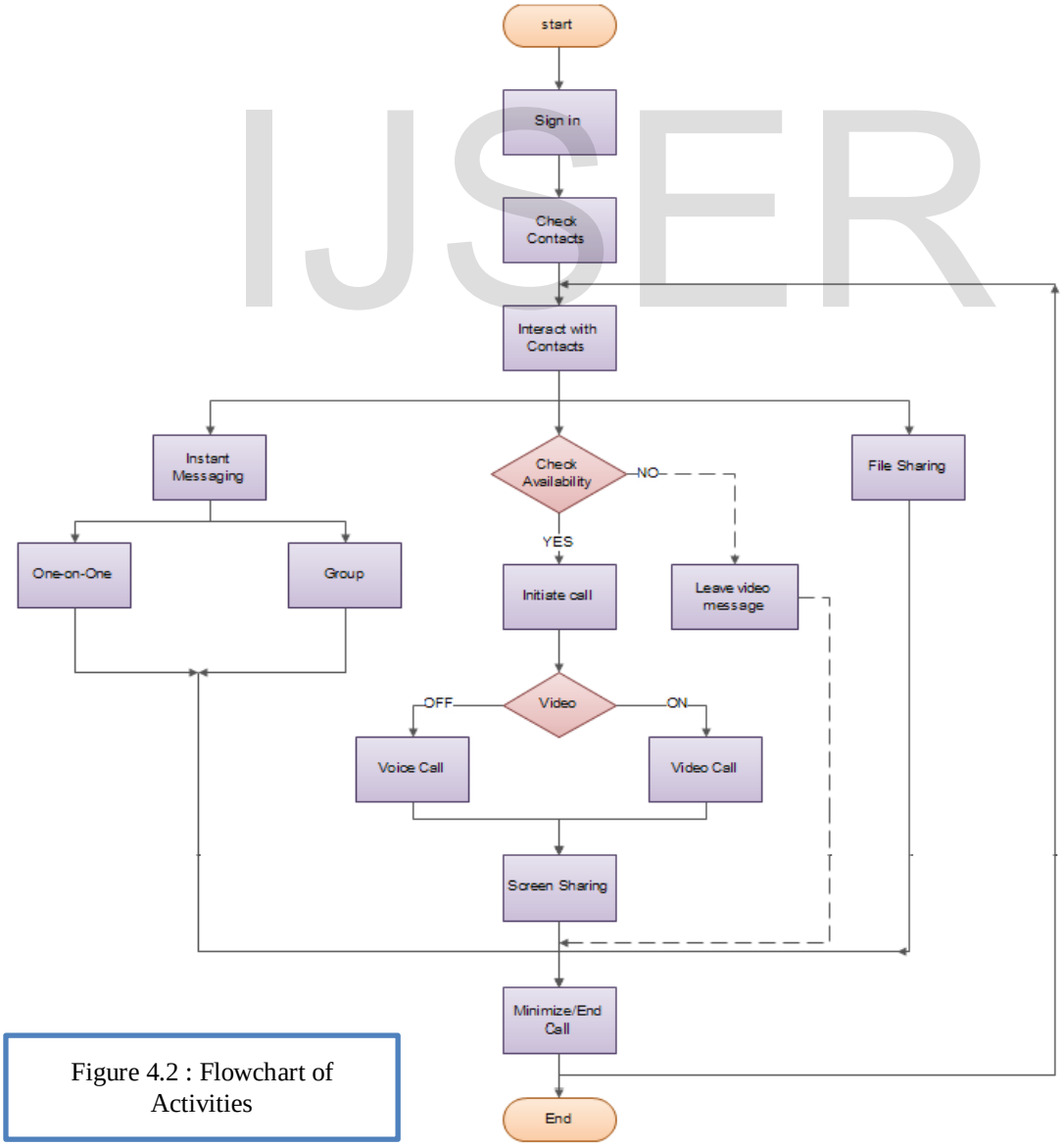

Figure 4.2 : Flowchart of Activities

4.3 Checking Contacts

The third activity observed after signing in was for the users to check the contacts. The observations for users varied greatly on how they choose to do the activity. The main categories are listed in the figure. Skype allows the user to filter the contacts by availability – all users, only Skype users, only Facebook users, only online users. It was observed that when a user opens Skype randomly, the user browses the contacts or filters the contacts by online users only.

Another feature Skype offers is the "Favorites" Menu. It allows the user to add contacts that he/she converses frequently with, to a different menu for quick access. When a user signs-in on Skype, he/she is shown the friend requests. One of our ethnography subjects had friend requests from unknown people as well. The user can either choose to accept/reject the requests. Also, the user can send a friend request by Searching with the contact's Skype user name (quickest way to find any contact). Recently, Skype has expanded the search to search with first name, last name or any wild card of the name (see Figure 3.3). This probably leads to unknown friend requests, which are not very welcome by the users we observed.

In few observations, especially when the user is signed in all through the day on laptop or mobile devices, the Skype notifications are an added advantage. Skype notifies the user if any of the contacts go online / offline. In cases where Skype is always run in the background, when a user online notification arrives, the users switch to Skype and initiate interaction with the user.

During our observations, when a user finds any of the Favorites contacts online or if Skype notifies that their friends are online, the user sends an instant message to see if the contact is free to talk. If there is a positive reply, they proceed to make a video or voice call.

4.4 Interact with Contacts

This forms the main activity of Skype, regardless of the version of Skype used or the device used. After checking for contacts, the user proceeds to interact with contacts. The interaction could be any form – sending an instant message, making a call, or sharing files or the screen.

As mentioned in the previous section, the users tend to use Skype IM to establish a contact before making a call. One of the users used other chatting software to confirm the call and did not use Skype IM feature. However, it is important to note that the user was not using the auto sign-in feature. Hence, he made the confirmation before signing in and signed in only to make the call. The Instant messaging feature was used by many of the users while on a voice call or video call. The animated smiley was used by almost all users and they are much interested in using the smiley feature to explain human emotions,

Video and voice calls are the most widely used features of Skype. Skype allows a one – to – one video call; one-to-one voice calls and group voice calls with the free edition. To make a group video call, the user must be a Premium user. It was observed across all users that they had connectivity problems while making calls through Skype. On an average, for a video call, the call duration without any issues was as low as 20 minutes, far lower than the voice call duration which lasted for almost an hour without any issues.

Generally, if the call got disconnected, Skype shows a message that the application is trying to reconnect the call. However, all of the users we observed disconnected the call and redialed again. The reason- as they note is that the calls never get reconnected and it is faster to disconnect and redial the call. Another feature during calls is that when the connection gets worse, Skype shows a message that the connection is slow and the user can turn off the video. We noted that while a few users continued with the call, some users opted to turn off video for better connectivity. While few users requested the other party to turn off video as well – making it a voice call, the others preferred to turn off only their video stream and continued watching the other contact's video stream.

Though the group chat feature is not very popular in the users we observed, one of them had a group already created. The user had a group for all close friends and they use the group chat option to converse between themselves. Once a group is created, it is possible for the users to make a group voice call as well. We requested the user to make a group voice call for observation.

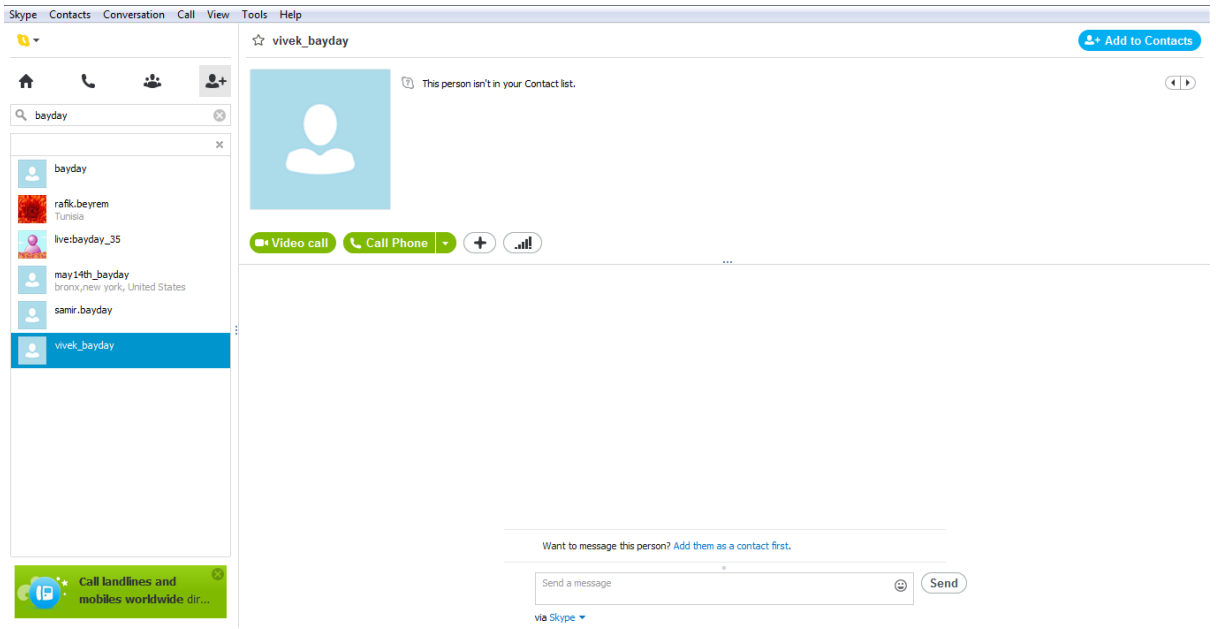

Figure 4.3 Search with a wildcard

The connectivity was overall good, with a few disturbances now and then, which could be attributed to slow internet connections or microphone noise. One of the contacts ended her conversation to start another call, and the others continued with their calls.

File sharing option was used very little as compared to the other features. It was commonly observed that the users use file sharing on Skype when they are on a call with a contact, and they have to share some file related to the conversation. One example is when a user was talking to a friend about a trip he recently went on, and sent one of the photos taken during the trip. The file sharing takes a long time, but the users did not seem to take notice of that since they were talking to each other. Another user was on a call with his office colleague and they were working on a bug to be fixed. Once it was done, he used mail application to send the file, since Skype takes a lot of time for file transfer, and he is not confident of the security settings of

Screen Sharing is one of the least used features. The users mentioned they preferred screen sharing software like Team Viewer for screen sharing. One user did use the screen sharing while she was on the call with her friends. They were conversing on online shopping and the contact shared her screen to show the product they were looking for (see figure 3.3). Apart from this single instance, screen sharing was not used by any of the users in the study.

4.6 Quit Application

On closing Skype window, by default it stays in the system tray running in background. The users use the option of 'Quit Skype' from the menu bar to exit the application. While observing users, for most users, the idle state is the final stage of the process, since the application is always signed in. If the user doesn't exit the application, then the ending of process could be through either switching off the mobile or laptop device, or disconnecting the internet connection (#G or Wi-Fi) – by which the user goes offline. None of the users signed out of the application manually to exit the application. When asked for the reason, they cite that if they manually sign out, every time during sign-in they need to enter the password, and hence they avoid it.

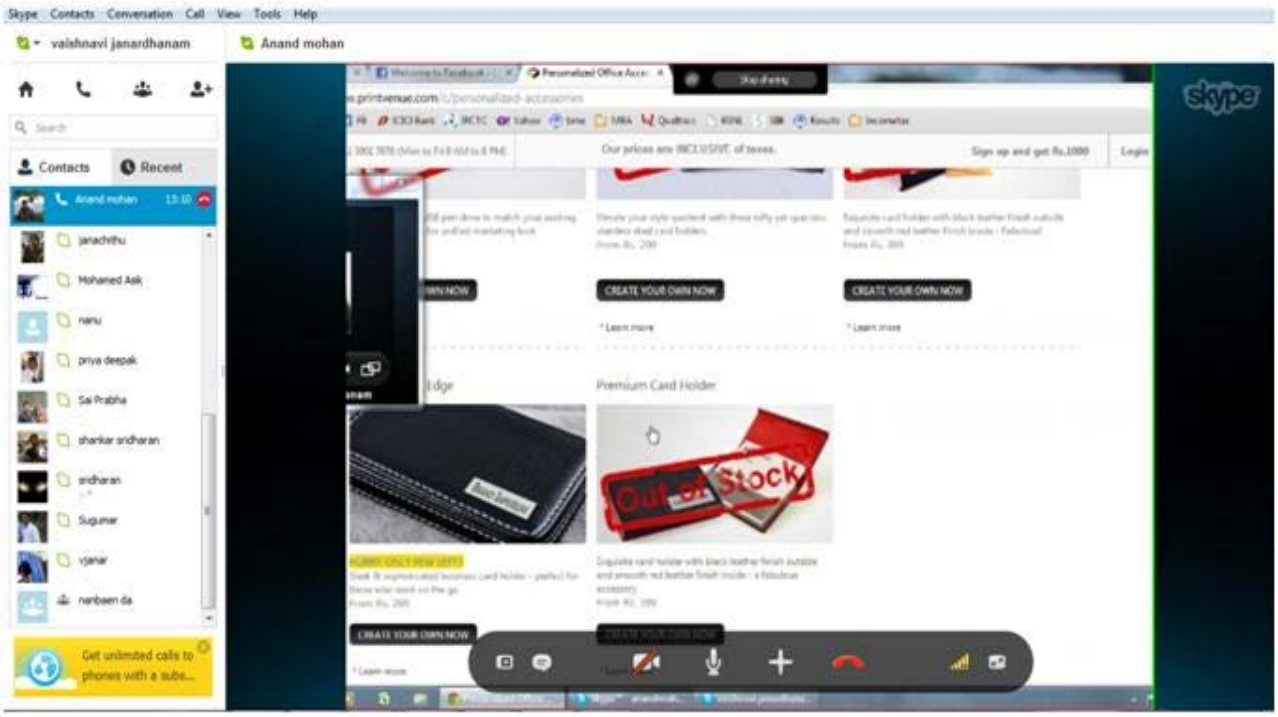

Figure 4.4 Skype Screen Sharing

5. Implications for Design

With the observations and results we gathered, we were able to recognize three main areas that must be considered during redesign for this class of application.

The major common problem faced by Skype users is the connectivity issue that occurs during video Calling. Users experienced the same issue during voice calling but it was
Less frequent. The minimum requirement given by Skype for a video call is a bandwidth of 400Kbps to 500Kbps. All the participants used Internet connections with bandwidths greater than 1Mbps yet still all of them experienced problems when using the video call feature. This issue is causing so much inconveniences that some users even took their laptops near the Wi-Fi router in order to get a better Wi-Fi signal. Others even went to the extent of closing all other applications in their laptops that might use up band before initiating a video call. Another user who's video call kept on disconnecting every 15 minutes expressed her disappointment by

Saying "… this is the only part which I am not satisfied with." Other unfavorable experiences that occur due to poor call connectivity are lagging in audio, showing no indication that the call is lost, and not being able to establish a connection with auto reconnect function. After analyzing all These scenarios and user feedback, it is clear that Skype needs to enhance its video calling function. One method we suggest is to allow the user to transmit video at a lower quality level if the user's Internet connection appears to be slow or unstable. Skype must also try to improve the function to use less bandwidth when transmitting video. This will help to reduce the inconveniences the users are currently facing.

The second problem that we observed is the slow file transfer speeds. All of the users were aware of the slow file transfer speeds of Skype and this made them not use the feature for important file sharing, or worse; not use the feature at all. Some participants even went through the trouble of logging into email, attaching the file to an email, and sending the email to the contact that was talking to him via Skype. This was done just to avoid the slow transfer rates of the application. From our evaluation, the file transfer function is mostly used to share photos with contacts while interacting via voice or video call on Skype. Therefore, we see it as an important function that enriches the user experience and a function that desperately needs to be improved during

redesign. One suggestion to improve the function is by adding a photo sharing feature similar to the one in Yahoo Messenger where contacts are shown a preview of the shared image. For example, if you are trying to share a 3264 x 1968 resolution image and if the application can show an 800 x 600 preview of the image on the application screen, it would take less bandwidth than actually downloading the image before viewing. This also promotes a better user experience since both sender and receiver can look at the same image and comment on it through the voice or video call. Other than that, Skype must try to use a higher compression technique and transfer files faster.

The third problem that we uncovered from our study is that Skype has not effectively covered mobile devices. With the technological advances we gain each day, people are starting to use more and more mobile devices and soon laptops will be completely replaced by mobile devices just as how laptops have replaced the desktop computer. However, we feel that the Skype representation given in mobile devices are not competitive enough according to current standards. For example, one of the participants tried to activate the idle Skype application on his Android mobile phone and it resulted in the entire application not responding. As the participant explained, it is a common problem in Skype Android version and to resolve the problem, he either needs to forcefully restart the application or restart the entire mobile phone. One of the iPhone users openly expressed his dissatisfaction about the Skype interface. Some of the other participants were not even interested in using Skype on their mobile devices since they prefer to use other applications such as Viber and Whatapp that offer some of the features available on Skype. Therefore, we recommend that Skype mobile applications need to be improved to capture a wider mobile audience. The application must be well designed not to experience functional issues on Android devices such as application hanging. For iPhone devices, the application interface must be enhanced to compete with the interactive and user-friendly nature of all other iPhone applications.

Conclusion:

Base on the observation and questions asked, Skype is a communication medium used by people of all ages and it is easy to install. It is more convenient than phone calls because it is free and the video feature makes communication better. Features like file sharing are still not very clear to users and not very good at the moment and connection is okay with a fast Internet and even with the slow one with the elimination of video calling. This participant preferred the use of mobile device than laptop for the mobility reasons. Finally even though the interface "sucks" generally Skype is a good and very convenient way to communicate with loved ones anywhere, in real time so long there is an Internet connection.

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