ANDROID VS. IOS. WHICH ONE DO THE USERS LIKE MORE?

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EXECUTIVE SUMMARY

A focus group interview regarding Android phones was conducted with three participants. The interview was conducted on September 7, 2013 at the researcher's house. The main objective of this focus group interview was to understand what the users like about the Android smart-phones they use and what they do not like. The interview was recorded, transcribed, and a thematic analysis was conducted. On the positive side, the participants really liked the personalization made possible by the Android OS, the lack of upfront fees for application development, and the flexibility to host their Android applications with multiple software providers. The main problems reported were poor user experience and problems with running applications smoothly (e.g. applications not responding, slow response times). Some concern was also expressed regarding the security of the applications available on Android system and their quality because of lack of strict regulations.

INTRODUCTION

There have been many new technological advances to make life more and more convenient for humans. The advent of smart-phones is one such phenomenon. Alexander Graham Bell made it possible to communicate through a telephone apparatus over distance in 1876. Since then there have been impressive advances in the modes of communication. Earlier the phone was just a mode to communicate with other person but now in the era of smart-phone, humans have delegated many of their mundane tasks to their phones making life comfortable.

The advent of technology has also made it inexpensive to produce these gadgets and have made them affordable for people. People who buy or intend to buy a smart-phone are often faced with the choice of myriad brands. The two main operating systems in the market are iOS by Apple and the Android OS by Google. There are advocates and critics of both these operating systems.

Going by the market share, Android phones have outperformed iOS based phones in sales from 2012 through 2013, not only in US but also worldwide (McCracken, 2013). But since there is new technological advance every other day, it is very likely that Android may be outperformed by iOS in a competitive marketplace. It seems important to study what works for Android, what does not, and what can be improved to boost the sales of Android all the more.

METHOD & ANALYSIS

The method of focus group interview was chosen to gather data from the Android smart-phone users for this study. A focus group method was chosen as it was deemed that having a group discussion around Android smart-phones might result in richer data rather than individual interviews or a questionnaire or a survey method. The focus group consisted of three participants. The focus group interview was conducted in English. The participant's consent was asked before recording the audio of the focus group interview for later transcription and analysis. The focus group interview was conducted using the 17 questions listed in the focus group interview schedule (See Appendices). The facilitator stuck to the schedule most of the times; she included a few probes based on the participants' responses and asked for specific examples regularly. The responses were transcribed and then analyzed thematically.

After the focus group discussion, demographic information was collected from the participants and recorded.

RESULTS & DISCUSSION

DEMOGRAPHICS

The ages of the participants ranged between 30-40 years. All the participants were Indians who were residing in United States for more than 10 years. The demographic characteristics of the participants are summarized in Table 1 below. Since all the participants had an Engineering background, they discussed the Android phones in technological terms most of the time.

Table 1: Demographic characteristics of participants.

	Age	***Gender***	***Duration of owning a smart-phone***	***Smart-phone Brand***	***Professional Background***	***Average daily usage of smart-phone***	***Number of Applications on smart-phone***
Participant 1	35-40 years	Male	< 2 years	Samsung	Management	4-5 hours	~ 30
Participant 2	35-40 years	Female	~ 10 months	Samsung	Software	~ 1 hour	~ 30
Participant 3	30-35 years	Male	< 2 years	Motorola	Software	4 hours	~190

MAIN FINDINGS

The participants pointed out some pros and cons of the Android system. Some of the main findings are summarized in Table 2 below. The main themes that surfaced in the discussion are discussed later.

Table 2: List of study findings and recommendations.

Study Findings	***Recommendations***	***Responsible Department***
Phone often freezes while using	Improve the integration between the hardware and the operating system.	The engineering department at the smart-phone manufacturer.
Crashes experienced in applications and applications not responding	Improve the integration between the hardware and the operating system	The engineering department at the smart-phone manufacturer.
	Thorough testing of applications with the currently available Smart-phones in the market	Application developers.
Poor user experience	Control the number of workflows possible	User Experience and Engineering departments at the smart-phone manufacturer.
	Improve the integration between the hardware and the operating system.	The engineering department at the smart-phone manufacturer

Questionable security of the applications and poor quality of applications	Having quality control with respect to acceptance of developed applications	Application developers and App Store
	Development of some seals specifically for applications to beef up the security for data entered in applications	Third party security organization that provides compliance certificates for applications on devices.
Form factor being poor and small screen size not supporting reading	Design and test with different forms and screen sizes	Design team at the smart-phone manufacturer
Material used for smart-phone not strong enough to withstand falls and rough use	Experiment and test with different materials for smart-phone body	Design team at the smart-phone manufacturer.

USING A SMART-PHONE VS. A NON-SMART-PHONE

For participant 2 and 3, the current smart-phone was their first smart-phone. Both of the participants reported that the current smart-phone gave them constant access to the Internet, which they did not have with a simple cell-phone. Both of them reported that it made life more convenient for them. On the flip side they suggested that having a smart-phone has made them very dependent on it and the phone prevents them from using their mental capacities more fully. Participant 2 gave an example of how earlier she used to spend time in reading maps and navigating while travelling but now she relies on the navigation application on her smart-phone. Participant 3 also reported that the battery life of smart-phone is really poor as it drains out quickly based on the number of applications running on one's smart-phone.

It seems that participants appreciated the convenience of using the smart-phone but were concerned about too much dependency on the smart-phone.

WHY CHOOSE AN ANDROID?

Participant 1 reported that he owned an iOS based smart-phone before and was frustrated with the problems regarding the breakdown of Google Maps Application, change in the charger, and poor battery life. He also reported that his current Smart-phone was the best available alternative in the market then, so he bought it. He pointed out that the operating system did not play a role in his buying decision but he really liked the personalization provided by Android smart-phones. Participant 2 reported that she bought an Android phone based on the bad experience of her husband with an iOS based phone. Additionally, she also thought that iOS based phone was heavier while the Android phone that she has, is easier to carry. Participant 3 reported that he got an Android phone to explore what he can do with it in terms of software development. Software Development Kit (SDK) is free for Android while one has to spend $200 upfront to get it for iOS.

The operating system did not play a major role in the buying decision for participants 1 & 2, while participant 3 chose an Android phone deliberately to explore the software development kit accompanying the Android OS.

QUALITY OF USER-EXPERIENCE

The main problem with the Android operating system as reported by the participants was that they often experienced freezing of the phone and crashes of

running applications or no response at all. All the three participants had some experience of using devices based on iOS and reported that they never experienced such issues when using same applications or any other applications on iOS devices. Participant 2 added that she often observed that the response times for iOS devices are faster than Android. Since the participants had technological background they also reported that Android being an open source operating system, inadequate optimization by different hardware manufacturers with the software was the root cause for crashes and lack of responses or slow response times. This seemed like a plausible explanation.

Comparing User Experience of Android vs. iOS

Since all the participants had some experience of using iOS based devices, they were asked to compare the experience of using devices based on these two distinct operating systems. Participant 1 and 2 pointed out that often devices based on iOS are very intuitive and easy to use and even 2 and 3-year old children start using these devices without any training. Participant 3 noted that since iOS is a closed system, it allows only certain number of workflows possible and thus make those devices very easy to use and the overall user experience is very streamlined.

All the participants reported of poor user experience with Android phones when compared to iOS devices. The participants cited the lack of optimization as a reason again.

Security

Participant 2 pointed out that she is often concerned about the security of her personal information and any information that an application asks for and fears that it may be misused. This seems like a very valid concern. The smart-phone and application developer community should come up with some tools to beef up the security or at least put some indicators of security of the user's personal data.

Participant 3 also expressed concern specifically regarding the applications available on Android system. He reported that since the Android is an open-source system with almost no monitoring and control over who can post applications, it is pretty easy for someone to write a malicious application, which may compromise the security of a user's smart-phone. A need was expressed for some form of monitoring and quality check for the applications developed and deployed on an Android system.

Applications & Applications Market

The number of applications on each participants' smart-phone are reported in Table 1. Participant 1 and 2 reported that they use 5-6 applications frequently while participant 3 reported that he uses around 12-15 applications frequently. Participants reported of using the applications related to email, maps, weather, social networking (Twitter, Facebook), news, financial, utility and productivity related applications.

Regarding the application markets related to Android and iOS, participant 1 took a vendor perspective and noted that it is easier to build for Android as one need not pay the $200 up front for developing an application. He also pointed out that in case of iOS, one has to always go through the Apple App Store to download and use an application, while Android applications can be hosted by any software provider such as Amazon in addition to the Google Play Store.

Participant 3 noted that though there are no fees for software development, this affects the quality of applications to a great extent. On account of the fees for

software development for iOS, only serious developers develop apps for iOS while anyone can develop a mediocre application and deploy it on Android system, as it is an open-source system.

Participant 2 reported that she had a bad experience of downloading an update for one of the entertainment applications, and when she attempted to download an update, her phone froze and she had to reboot it. From this experience, she inferred that the applications might not be well tested for Android system and thus face download and deployment issues. Participant 3 added that he observed that applications that are free on Android and paid on iOS, differ in quality with the applications developed for iOS being of better quality.

PROBLEMS WITH ANDROID

From the technological perspective, the participants noted that most of the problems they experienced with an Android system like sub-standard user experience and applications crashing and not responding stemmed from the lack of optimization between the myriad hardware platforms and a fragmented open-source operating system. Participants also expressed concern about security generally as well as specifically regarding Android operating system.

Some other pain points unrelated to the operating system were also reported like - the small screen size, which did not support reading. Moreover, Participant 2 reported that she would like her smart-phone to be made of a stronger material so it can withstand rough use and falls and would not require a protective case.

CONCLUSION

The current group was highly knowledgeable about the technological underpinnings of Android OS and iOS; the same focus group discussion with average users may paint a very different picture of what users like and dislike about Android. This current study may not have discovered all the problems that a typical average user of an Android smart-phone user may experience.

Rather it sheds light on not only what technologically advanced early adopters think about Android OS, but also what potential application developers think about Android OS. The participants vocalized concern regarding lack of optimization between the hardware and software, how every brand comes up with a slightly different version of the Android based smart-phone leading to an inconsistent and poor user experience.

These participants as potential application developers and vendors appreciated the innovation fostered by Android and lack of upfront fees for software development but as users they complained about the poor experience and expressed security and quality concerns on account of the open source system.

REFERENCES

McCracken, H (2013, April 16). Who's winning, iOS or Android? All the numbers all in one place. *Time.* Retrieved from http://techland.time.com/2013/04/16/ios-vs-android/

APPENDICES

Demographic Questionnaire

1. Age
2. Gender
3. Nationality
4. Profession
5. Which brand of phone do you use?
6. How long do you use the phone daily?
7. What's the operating system of the phone?

Focus Group Questionnaire

1. How many cell phones have you owned till now?
2. What types?
3. Which ones you liked the most and why?
4. Have you ever used an iOS? What device? What you liked and disliked about iOS?
5. Why did you choose an Android-based cell phone?
6. Tell me about features that you use frequently of your Android-based phone. The ones that you hardly use or care less for
7. Compare your current phone with earlier phone and tell me what you like and dislike.
8. What types apps do you use most frequently and download the most?
9. What features do you find most important?
10. How useful do you find the buttons on the cell-phone?
11. Tell me about camera, speaker, microphone, call quality, attending calls etc on your current phone
12. How is the experience different than iOS based devices?
13. Any problems they find in using specific apps with your phones? What might be the cause of this problem?

14. How can you improve this phone? What features would you like?
15. Which features frustrate you the most?
16. To what extent your life would be affected if this phone is removed from your life?
17. Any other comments?