CSCI 5708

Mobile Computing

Reading Pair - 01

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Martin Pielot, Karen Church, and Rodrigo de Oliveira. 2014. An in-situ study of mobile phone notifications. In Proceedings of the 16th international conference on Human-computer interaction with mobile devices & services (MobileHCI '14). Association for Computing Machinery, New York, NY, USA, 233–242. https://doi.org/10.1145/2628363.2628364

1) **What is the motivation behind the work ?**

Notifications on the mobile phones plays an important role in mobile users' life. They notify the user about new messages, activities, emails, social network updates and other things. The motivation behind the work is to study by the means of the survey that how different notifications affects people in their daily lives. This is achieved in the paper by considering different factors like whether the phone is silent or not, number of notifications that users must deal with, emotions of the users when the number of notifications is increasing.

2) **What is the author's methodology ?**

To study nature and effects of notifications on the lives of mobile phone users, authors conducted one week field study. The aim for this work is to get insights about mobile notifications in natural settings.

For the objective data, the authors collected and studied real world logs of all the notifications and the response time to those notifications by the user. For the subjective data, they conducted the online-dairy study where participants must reflect their perceptions on the notifications that they received each day. The online-dairy included a mix of total 9 questions which are open and close ended questions.

For the study, the participants have to install authors logging app , the Notification Monitor. They have grouped the notifications in four categories : Messengers (WhatsApp, SMS, Line), Emails, Social network updates (Twitter, Facebook, Google+) and other notifications (system messages, calendar reminders, updates). In total, they conducted the survey for 75 weekdays and 30 weekend days. They removed notifications from 64 applications as those applications are from system and considered 33 applications which were clustered into 4 categories mentioned above.

3) **What are the results ?**

Quantitative Results from Logs

Users received in total 6854 notifications. Therefore, each participants an average of 65.3 notifications per day. The below mentioned table shows the number of notifications users received by the users per category.

Category	Number of notifications	Top apps
Messenger	3340	WhatsApp, Google Talk, SMS
Email	2210	Gmail, K-9 Mail, Android Email
Social	269	TweakDeck, Facebook, Google Plus
Other	1035	Updates, Calendar, Pea Pod

Most(78.4%) of the notifications received by users were during a weekday and remaining 21.6% received during the weekend. Thus, number of notifications dropped during weekends. More than 70 percent of the users viewed notifications through drawer and the remaining approximately 28% users viewed notification by directly opening the app.
For effect of ringer mode on users, it showed that people frequently disable sound but rarely disable all the alerts.

Qualitative Results from Diary
Authors have collected 97 dairy entries over one week period with an average of diary entries per participant. All diary entries were manually analyzed by two authors in the iterative manner to extract emergent themes. The participants felt that the notifications received from messengers and social networks were too much less when the notifications were too high. Also, participants found that mobile messenger applications and emails created most interruptions. From the log data it is revealed that most notifications are viewed within few minutes whereas the notifications from messenger and social apps were viewed very quickly.

4) **How does it impact the mobile computing community ?**
Notifications play an important role in mobile application development. From this paper, we came to know that users have to deal with a large volume of notifications. The findings from the paper highlight that we need to find effective strategies to lower negative emotions that are being generated due to notifications. For mobile computing community it is worth to consider that people are checking their phone and notification drawer even there are no notifications and people just ignore or delay the notification when they are busy in work which decreases the user experience.

Zann Anderson and Michael D. Jones. 2019. Mobile computing and well-being in the outdoors. In Adjunct Proceedings of the 2019 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2019 ACM International Symposium on Wearable Computers (UbiComp/ISWC '19 Adjunct). Association for Computing Machinery, New York, NY, USA, 1154–1157. https://doi.org/10.1145/3341162.3344832

1) What is the motivation behind the work ?

Time spent in nature and outdoor activities are crucial which promotes both individual and societal wellness. Mobile computing's involvement in outdoor recreation raises significant concerns regarding its capacity to add significantly to activities without detracting from their positive effects on wellbeing. The motivation behind the work is to find whether the use of smartphone while hiking is beneficial, or it have many disruptive effects. The aim to conduct this work is to study the behaviour of people regarding usage of smartphones whie hiking, trailing or climbing mountains.

2) What is the author's methodology ?

The author's initial work in this area was comprised of mix methods which included online surveys, interviews, and on-trail observations. From the observations they came to know that rather than computing becoming a distraction on trail, people are adapting and adopting technology while hiking. Authors interviewed many people for getting their opinions about using smartphones while hiking. Besides this, they have also interviewed people asking about other devices such as headphones and earbuds that they carry while hiking. Authors have also undertook surveys where they asked open ended questions about experience to carry smartphone when they are hiking.

3) What are the results ?

There are more positive results obtained by interviewing people and surveys compared to negative results . Some people think that phone use takes up roughly five minutes per hour of hiking. Whereas in response to the open-ended question, participants indicated many ways where headphones and earbuds supported in their well being while hiking. They found that listening to music on trail enhances their experience. Few individuals think sounds of nature relaxing. Many participants quoted that the use of smartphone navigation while hiking helps them to track their near and dear ones. Also, navigating using smartphones help to be on track using maps rather than getting lost in the woods or mountains. Some individuals felt that the inclusion of technology might prove detrimental to social or familial well-being when hiking.

4) How does it impact the mobile computing community ?

Time spent outside can be improved, encouraged, and made possible by mobile computing. People with physical disabilities will have some sort of access to outdoor activities can now and in the future make a difference. This will have a greater impact on the mobile computing

community as the opinions and views differ from person to person. The community will get a broader scope to unleash the vision in the field of health and wellbeing.