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Poster: A User Study of WhatsApp Privacy Settings Among Arab Users

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Abstract—Mobile Instant Messaging (MIM) applications (apps) such as WhatsApp Messenger enable easy communication and open new issues of information control and privacy management. We investigate WhatsApp to understand how Arab people manage their privacy on MIM apps. We find that WhatsApp’s design decisions around adding contacts result in privacy issues of information leakage and unwanted contact through the app.

Keywords—Privacy; WhatsApp; Mobile Instant Messaging; Usability; User Study; Survey; Arab

I. INTRODUCTION

Mobile Instant Messaging (MIM) applications (apps) such as WhatsApp Messenger raise interesting privacy issues for end users. This is especially true given the global popularity of such apps, and the variation among cultures in how privacy is traditionally handled. We conducted a survey to learn about how Arab people use WhatsApp to communicate with others and manage their privacy.

WhatsApp Messenger is a cross-platform mobile messaging app launched in 2009. It was initially a text messaging app, but its current version allows for the creation of groups, sending media (images, audio and video), sharing of contacts, and sharing the user’s location. WhatsApp is the most popular MIM app in many countries such as Saudi Arabia and is a strong competitor in other counties such as China. In 2014, 68% of mobile internet users in the Middle East and Africa used WhatsApp¹. WhatsApp growth reached about 450 million users in its first four years². It was initially a free app, but now charges users 99 cents after the first year of use. On Feb. 19, 2014 Facebook bought WhatsApp with \$19 billion².

II. WHATSAPP

When a user first signs-up with WhatsApp, she has to provide and verify her phone number which is her unique identifier on the app and is used by others to connect with her. After setup WhatsApp imports the user’s contacts from the phone into the internal WhatsApp contact list. The user is automatically given access to all their contacts’ online information (profile photo, status, and when they were last seen) depending on the contact’s privacy settings.

By default the online information of a user is shared with anyone who has the user as a contact. For example, if Alice

just joined WhatsApp and Bob had previously had her in his contact list, then Bob would be automatically given access to Alice’s online information without any explicit consent from Alice. This would happen even if Bob was not in Alice’s contact list. A user has the option to set online information as visible to Everyone, My Contacts, or Nobody.

A user can create a new WhatsApp contact by simply adding a phone number to their phone’s contact list. Similarly to the setup, the new contact is not notified, but the user gets access to their online information depending on the settings.

III. METHODOLOGY

Prior experience with WhatsApp by the researchers indicated that the issues of information control, and unwanted contact were major concerns for WhatsApp users. In order to better understand how Arab users control their privacy using WhatsApp, we conducted a survey and used a snowball sampling. The survey focused on how users managed their privacy through settings, their attitudes about the app, and prior privacy-related experiences. The survey was translated into both English and Arabic.

One of the researchers is Arab (Saudi) national and a current user of WhatsApp. She used her contacts list to advertise the survey to Arab WhatsApp users. She also posted advertisements for the survey on public social networking pages for Arab in the United States. The participants were informed that we are studying WhatsApp privacy settings and the work was approved by our IRB.

A total of 1238 respondents started the online survey, and 945 respondents completed it. We focus our analysis on the 841 Arab respondents who completed the survey. The majority of the respondents were women (67.06%, n=564), and about a third were men (30.08%, n=253), with (2.85%, n=24) choosing not to indicate a gender. Most of them (91.8%) indicated that they use WhatsApp on a daily basis to contact family and friends.

IV. RESULTS

The two most interesting results of our survey were the issues of managing privacy settings, and unwanted contact.

¹<http://www.statista.com/statistics/321460/whatsapp-penetration-regions/>

²<http://newsroom.fb.com/news/2014/02/facebook-to-acquire-whatsapp/>

Group	Last Seen	Profile Photo	Status
Everyone	385	555	577
My Contacts	115	220	183
Nobody	272	15	28
I don't have this feature	58	29	30
No Answer	11	22	23

TABLE I. RESPONDENT SELF-REPORTED PRIVACY SETTINGS.

Group	Always	Often	Rarely	Never	No Answer
Friends	481	265	77	3	15
Family	522	241	69	6	3
Co-Workers	205	243	253	102	38
Others	38	66	268	440	29

TABLE II. HOW OFTEN RESPONDENTS CONTACT EACH GROUP THROUGH WHATSAPP.

A. Managing Privacy Settings

WhatsApp provides users with the ability to control who can access their online information. However, there is no custom group setting, so users must give access to Everyone, My Contacts, or Nobody. Even if the user chooses to restrict access to the information she must make an all-or-nothing choice to either show the information to her whole contact list, or to show it to no one at all.

We asked respondents to report their current WhatsApp privacy settings. As can be seen in Table I users did decide to make changes to their privacy settings indicating that users are aware that privacy settings exist and can be changed. Most notably, 32.3% decided to completely hide their last seen time stamp but many users still elected to leave their profile photo and status visible to Everyone or Contacts.

Although the majority of the users knew that they can manage their privacy settings using WhatsApp, they have chosen to use everyone or my contacts potentially because they want to allow friends and family members to see their online information.

To better understand who are our users interact with on WhatsApp we asked them how often they contact Friends, Family, and Co-workers as well as other people on their contact list such as drivers, plumbers, and contractors. As expected, respondents frequently communicated with Friends and Family. Roughly equal numbers of respondents reported contacting Co-workers Always, Often, and Rarely which makes sense give that 18.4% of our respondents are unemployed. People rarely contacted other people with 52.3% indicating that they never contacted people in this group through WhatsApp.

The most logical setting to use when trying to balance privacy with usability is the "My Contact" setting which limits access to people on the phone's contact list. But just because a person is on the contact list does not mean the user wishes to share information with them. The coarse granularity of the settings puts users in a position where they cannot manage their privacy as they need to.

B. Unwanted Contacts and Blocking

Contacting another user through WhatsApp is easy and cheap provided that you have their phone number or can guess it. About half of the respondents (51.96%) agreed that it bothers them that a stranger can see their online information

Reason	Women	Men
He has my number but I don't know this person	49.47%	22.13%
I have this person's phone number, but I don't want him to contact me over WhatsApp	6.56%	10.67%
I don't want him to be able to see my profile photo and/or status	8.87%	7.51%
We are not friends anymore	5.5%	7.51%
We had a bad fight	14.36%	21.74%

TABLE III. REASONS WHY MEN AND WOMEN CHOSE TO BLOCK PEOPLE.

while 31.03% have said maybe. When we asked respondents how many times they have been contacted by a stranger 63.85% said they had been contacted more than once, 18.31% said they had been contacted once, while 15.93% had never had a stranger contact them.

The only available control for the users is the "blocking" feature which allows a user to block future contact from another user. We asked the respondents if they had ever used the blocking feature. The majority of the respondents (75.51%) reported using the blocking feature to block a user. Women (81.03%) are more likely to use blocking feature than men (64.03%). However, women and men use blocking for different reasons. Table III lists the reasons we asked about, and the responses of both genders. Both genders tended to block because the person was a stranger, or because they had had a fight with the person. Though woman were more likely to block strangers, and men were more likely to block after fights. It is expected to find that women use block feature to block strangers more than men which might due to the conservative culture and the sensitive relationship between genders in Arab countries.

The problem of managing unwanted communication puts the burden on the user who has to block each unwanted contact individually. Unwanted communications invade users' privacy and potentially put them at risk of stalkers who may simply keep contacting them using different phone numbers. The only choice is to individually block unwanted users' phone numbers, which does not prevent future new unwanted contacts. A respondent explained in the comment section that:

I once I had to delete my phone number because of a stalker that kept sending me messages from different phone numbers. Blocking his numbers was not effective. That was a breach of my privacy.

V. DISCUSSION

People are developing a greater dependence on MIM applications as their primary communication mechanism. Privacy is therefor an important component that should be considered by the developers of such apps. Our work shows that the emphasis WhatsApp puts on ease of contact and sharing of data puts users in a position where it is challenging to impossible for them to manage their privacy.

We intentionally investigated Arab culture because of the high use of WhatsApp and some of the conservative elements of the culture. In future work we plan on comparing how people in different cultures respond to MIM privacy issues, both in how they manage privacy, and what their privacy expectations are.