USER PERCEPTION OF DELETING INSTANT MESSAGES

EuroUSEC’18, London, UK, 23 April 2018

Theodor Schnitzler, Christine Utz, Florian M. Farke, Christina Pöpper, Markus Dürmuth
OVERVIEW

Instant Messaging
- New WhatsApp feature introduced October 2017
- Delete messages for everyone

How do other messengers do this?

Do users delete messages?

What do users expect?

Do users know what happens?
## OVERVIEW

<table>
<thead>
<tr>
<th>Messenger</th>
<th>Active Users (Millions)</th>
<th>Delete Message Local</th>
<th>Delete Message Global</th>
<th>Residuals</th>
<th>Delete Chat</th>
<th>Ephemeral Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook Messenger</td>
<td>1300</td>
<td>●</td>
<td>0</td>
<td>0</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>Google Hangouts</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>GroupMe</td>
<td>9</td>
<td>●</td>
<td>0</td>
<td>0</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>Line</td>
<td>214</td>
<td>●</td>
<td>0</td>
<td>0</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>Signal</td>
<td>0.5</td>
<td>●</td>
<td>●</td>
<td>0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Skype</td>
<td>300</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>Snapchat</td>
<td>255</td>
<td>●</td>
<td>●</td>
<td>0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Telegram</td>
<td>100</td>
<td>●</td>
<td>●</td>
<td>0</td>
<td>●</td>
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<tr>
<td>Threema</td>
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<td>●</td>
<td>0</td>
</tr>
<tr>
<td>Viber</td>
<td>260</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>WeChat</td>
<td>963</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>WhatsApp</td>
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<td>●</td>
<td>0</td>
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<tr>
<th>Messenger</th>
<th>Users (M)</th>
<th>Del. Local</th>
<th>Del. Global</th>
<th>Hint</th>
<th>Chat</th>
<th>Eph Msg</th>
</tr>
</thead>
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<td>●</td>
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<td>●</td>
<td>●</td>
<td>0</td>
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- Dialogue to select local or global
- Local only
- Global only
- Delete and Recall separate functions
- Conversations only
- Confirmation of local deletion

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**USER PERCEPTION OF DELETING INSTANT MESSAGES**

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RESEARCH QUESTIONS

1. What are users’ expectations towards the functionality of deletion mechanisms?

2. Do specific implementations of this functionality match users’ perceptions, i.e., do users correctly estimate the consequences of a particular deletion action?
AGENDA

- Introduction
- Methodology
- Results
- Conclusion
WHAT WE DID

**Experiment**
- Send and delete a message
- Receiver‘s device under our control

**Questionnaire**
- Mobile Device Usage
- Message Deletion Practice
- Demographics

**Revealing**
- Presenting receiver‘s device
- Final questions on expectation matching

Entrance area of dining hall
125 participants
WHAT WE DID

Test Conditions

**WhatsApp**
Dialogue to select local or global deletion

**Facebook Messenger**
Only local deletion

**Skype**
Only global deletion
AGENDA

- Introduction
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HOW OFTEN DO USERS DELETE?

How often do you delete instant messages?

- Several times a day: 9
- About once a day: 4
- A few times a week: 9
- A few times a month: 13
- A few times a year: 14
- Almost never: 71
- I don't know: 5

40% of participants delete messages regularly.
WHY DO USERS DELETE?

What are your reasons for deleting messages?

“only because of misspelling”
“just because they consume some memory”
“message to the wrong person”
“grammatical failures or I regret what I was going to say”

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement</td>
<td>17</td>
</tr>
<tr>
<td>Storage Capacity</td>
<td>9</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>8</td>
</tr>
<tr>
<td>Obsolete</td>
<td>7</td>
</tr>
<tr>
<td>Regrets</td>
<td>7</td>
</tr>
<tr>
<td>Sent Mistakenly</td>
<td>6</td>
</tr>
<tr>
<td>Wrong Recipient</td>
<td>6</td>
</tr>
<tr>
<td>Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>Privacy</td>
<td>3</td>
</tr>
<tr>
<td>Incorrect Content</td>
<td>2</td>
</tr>
</tbody>
</table>

(42 answers)
DELETION LIMITATIONS

Do you think the deletion function should be limited?

- Yes: 31% (39/125)
- No: 69% (86/125)

How should the deletion function be limited?

- Unread: 12
- Time-Limited: 11
- No Deletion: 5
- Latest Message: 4
- Consent: 2
- Notification: 1

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**DID USERS EXPECT WHAT HAPPENED?**

Does this result match your expectations?
Why does this result match your expectations? Why not?

<table>
<thead>
<tr>
<th>Platform</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WhatsApp</strong></td>
<td>31 (79%)</td>
<td>8 (21%)</td>
</tr>
<tr>
<td>[YES] “Because I selected <em>delete for everyone</em> and that is what happened.”</td>
<td>[NO] “I thought [the message] would not be deleted at the recipient.”</td>
<td></td>
</tr>
<tr>
<td><strong>Facebook Messenger</strong></td>
<td>32 (71%)</td>
<td>13 (29%)</td>
</tr>
<tr>
<td>[YES] “Because the app did not ask me in which device did I want the message to be deleted.”</td>
<td>[NO] “Because the message should have been deleted from the receiving device.”</td>
<td></td>
</tr>
<tr>
<td><strong>Skype</strong></td>
<td>20 (49%)</td>
<td>21 (51%)</td>
</tr>
<tr>
<td>[YES] “Because I deleted the message.”</td>
<td>[NO] “I expected the message to be deleted only from the sending device.”</td>
<td></td>
</tr>
</tbody>
</table>
REASONS FOR MISMATCHING

Why does this result match your expectations? Why not?

WhatsApp
2 participants were surprised that the message was actually deleted
5 answers refer to the message deletion hint

Facebook Messenger
10 participants did not expect that the message was still available
1 participant expected a message deletion hint

Skype
8 participants were surprised that the message was deleted
3 answers refer to the message deletion hint
LIMITATIONS

- Biased sample
  - Younger people
  - Frequent smartphone users
- Study environment
- Limited feedback in questionnaire
AGENDA

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- Results
- Conclusion
CONCLUSIONS & OUTLOOK

- Implementations of message deletion differ widely
- 40% of participants delete messages for a variety of reasons
- Conflict of interest: control vs. consistency
- Is there influence of functionality terminology?
- Interface design: can selection dialogues improve user experience?
  - Clarifying functionality
  - Additional burden to the user