

# Analysis of Privacy Threats Using Whatsapp- and Twitter-Data

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vorgelegt von

Name: Basic



Basic



Vorname: Alvina



Prüfer: Prof. Dr. H. M. Breitner

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## **1 Introduction**

Worldwide Social Media Services established themselves as a common way of communicating and sharing various contents. There is a wide offer of different Social Media Services which can be and already are categorized in different fields by scientists. In general Social Media is characterized by three key elements: content sharing, communication within a communities and Web 2.0 (Ahlqvist et al. 2008). Due to that fact even Instant Messaging programs like Whatsapp Messenger are seen as a specific form of Social Media. Main advantages of those Instant Messaging Programs are a real-time content exchange and mobility as they are used on mobile phones. It is not particularly surprising that such Mobile Instant Messaging Programs have almost completely replaced the usage of Short Message Service.

While using such Social Media Services users are stating, publishing and sharing personal related information. As information are getting more and more important and valuable for any kind of success third parties continuously try to collect as many of users' personal data as possible for own purposes.

Even Social Media Services offers a wide field of communicating advantages, according the facts that users share personal related information by using those services and that cybercrime is steadily increasing it is questionable if data security for those services may be guaranteed. As Social Media Networks like Twitter, Facebook as well as Instant Messaging Programs like Whatsapp Messenger, Viber and others are used daily those services contain users' personal data like names, emails, addresses, phone numbers and further user related data. For this reason Social Media Services are one of the main targets of data collecting. Although there are certain data protection laws which should regulate the usage of personal data, data security on Social Media Services is often neglected by third parties.

While this paper is concentrating on the analysis of using Whatsapp- and Twitter-data we will try to answer the following two research questions:

**RQ1: To which extend do the usage of Twitter and Whatsapp poses a threat on users' privacy?**

**RQ2: What are user's perspective and level of knowledge according to data security for Social Media Services?**

This paper begins with a short definition and explanation of the two Social Media Services: Twitter and Whatsapp. Then legal definition of data security on the example of Germany is defined. Chapter 3 explains the literature research as well as research related work and the designing of the survey used for this paper. Afterwards the main part follows which is divided in two chapters. The first chapter (chapter 4) is a literature based analysis and listing of privacy threats applying on Social Media. The second part (chapter 5) is dealing with the data security of Twitter and Whatsapp from the user's perspective. Chapter 5 includes results of former surveys as well as the results from the online surveys carried for this paper. Chapter 6 contains discussion, limitations, implications and recommendations. The discussion includes the weighting and discussing of facts, statements and survey results. The final chapter is chapter 7 which contains conclusion and outlook.

## **2 Research Background**

### **2.1 Twitter and Whatsapp**

**Twitter** Inc. was founded by Jack Dorsey, Noah Glass, Evan Williams and Biz Stone in 2006 as a Microblogging Service. A blog is an online social platform where users can write and publish any kind of information and is a development of personal websites. Microblog is an artificial limitation of the information size shared. Twitter allows sharing of short messages up to 140 characters, called Tweets, with the internet community. Beside the usual text based post Tweets may contain links, short videos and pictures. Usually Tweets are public and may therefore be seen by every internet user who is interested. But Twitter also supply a private message service, called Direct Message that could be used by users to send private Tweets to other users (cf. Twitter.com). In 2012 worldwide there were about 517 million Twitter users. Most of them, over 140 million, in the USA followed by over 40 million in Brazil and over 30 million in Japan as well as the U.K. (Kirch 2012). Even Twitter seems to be one of the most popular Social Media Networks there are just about 3.2 million Twitter users in Germany. That is sparse compared with the 27 million Germans using Facebook (Statista 2014 and BITKOM 2013).

**Whatsapp Messenger** was developed by Brian Acton and Jan Koum in 2009 and is a cross-platform Mobile Instant Messenger that allows users to communicate with other

### **6.3 Implications and Recommendations**

As most of the respondents are Germans with the average age of 23 young, the paper offers basic approach to that group of users. This paper is giving an overview about users' general behavior and their level of knowledge in respect to data security in Social Media Services but also focuses on users' behavior especially in accordance to Whatsapp Messenger. The literature review in chapter 3.1 may help finding the right literature and other related surveys for further work. This paper gives the basis to conduct further surveys and papers for example to compare users' behavior on national and or an international level or a comparison among different Social Media Services may also be considered. The paper can be used to call attention on users' defective behavior.

An in-depth examination of the legal perspective is recommended as data security and data protection are mostly a legal issue.

While the users' statements on certain questions may be biased and there is a discrepancy between their statements and behavior the recommendation for further and related paper is to set the focus more on the users' behavior than on their statements. Therefore further surveys should include less open and opinion related questions and more behavior and technical related questions. The reason for this is very simple; only due to the behavior we may come to a less biased result which reflects the reality (the users' real view of in this case threats on privacy).

### **7. Conclusion and Outlook**

Whatsapp Messenger and Twitter are common and well known Social Media Services. While in Germany Whatsapp Messenger may be seen as the main Instant Messaging Program, German Twitter users are rare. As through both Social Media Services users are posting, sharing and sending personal data and personal related information and while we are living in a society where the value of information especially personal information is raising there are certain threats on user privacy. There are three main stakeholders which are interested in collecting personal data: institutions, concerns and crackers. Their purposes and methods may differ. While crackers purposes are illegal they are mainly using illegal methods like malware or technical exploits. In comparison

public authorities and corporations are using methods like data analytical tool which in some cases are repeatedly controversially debated.

The users' perspective on data security is not clearly visible. While users are stating that data security is important to them, their behavior shows the contrary as they keep using threaten Services like Whatsapp Messenger. Due to users' behavior the conclusion is simple; data security is not important in cases where their own benefits are higher than the costs it causes. Nevertheless users want to have control over the usage of their personal data. The main problem seems to be users' lack of knowledge of technical and legal possibilities regarding data security.

Further work should less pursue the evaluation of the users' behavior or to show additional data collection methods and threats on privacy but more the aim to show users that it is up to them to what extend third parties may use personal related data. Users should be taught that the responsibility whether for any kind of fraud done via Social Media Services or just the registration on such service, due to which third parties are able to collect their data or do harm, lies by users' themselves. This would help resolving the cybercrime as well as promote a fair play from both sides; users as well as public institutions and/or companies.