Poster: Social Sharing of Security Expertise

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Abstract—**Interest and motivation about information security is important but often missing as security can be technically too demanding for many computer and Internet users. However, for the security experts, the means, motivation and interest to handle security-related decision-making are there. These assets could be used to help others. On a personal level, it might be gratifying to get recognition for the expertise and for providing help. An online survey was run among security bloggers to understand what motivates expert users and how their expertise could be shared with others who do not possess the same skills. Our 1022 respondents provide insight into the security expert's interests from various perspectives.**

I. INTRODUCTION

Sharing is one of the key needs and characteristics of human beings that has found new ways of realization via the information and communication technologies [7]. People share thoughts, emotions and experiences beyond geographical boundaries through online environments for entertainment, to build associations with like-minded people or to learn new things and people. According to [11], the social networking phenomenon is "dramatically changing the way people behave", and social networking and blogging sites now account for almost 10% of all Internet time [11].

Social software in the Internet is flourishing, and new social applications appear constantly. Some are intended for private social interactions, while some are inherently more public [2], such as Blogs. Though mostly public, the topics of blog writings can be quite intimate. Blogs can be seen as equivalents of diaries, consisting of expressions of feelings and thoughts of formerly private nature on a particular subject, ranging from mainstream topics (e.g., food, music, products, politics, etc.), to highly personal interests [2][9].

Blogs are used for more serious information sharing also. The information on blogs can help "social navigation". Coined by Dourish and Chalmers [5]: it is guidance that provides cues for how to make decisions in uncertain situations by providing information about peer activities, utilizing the online presence of experienced users [3][5].

Our work focuses on informational, social sharing of security. In interacting with security, users are often confronted with questions about security which they cannot really understand. Their role is reduced to a mere cogwheel in the system, whose input is sometimes required, yet the significance and consequences of providing the input may remain unclear [4][6][10]. By studying security experts, we aim to understand what it means to be able to be an active and able party in security related decision-making online, and how this ability could be utilized for others, e.g. via an online security community, providing social navigation aid. Active security bloggers were chosen as the target audience.

II. THE STUDY

To reach the security experts, an online survey in the form of a questionnaire was built and advertised on a security blog by the blog host. The host was consulted on the suitability of the language to address the intended audience. The overall impression, logical structure, length and language of the survey were verified via pilot tests. It had 67 questions and the length to take it was 20 minutes.

The survey aimed to cover factors that on basis of previous work [1] [10] [12] affect security usage and attitudes. There were six sections, with questions on 1) demographics; 2) generic Internet and security usage; 3) security decision making: downloading, how decisions were reached and how risk was perceived; 4) attitude to security: motivation, commitment and engagement; 5) parental control (optional); 6) willingness to share security related experiences and information with others.

The survey was implemented using an open-source software application, 'LimeSurvey' [8] and run at the research institute's server for 19 days in early 2010.

III. ANALYSIS

There were 1022 full responses and 281 incomplete responses; only full responses are considered. Table I presents the age, gender and top countries (over 60 in all).

Age	Gender (%)[1]			Country	Percentage
	All	Male	Female	USA & Canada	27.69
Under 18	2.34	2.20	0.00	Finland	24.07
18-24	19.96	18.81	1.30	UK	9.39
25-34	45.10	43.94	1.50	Germany	4.99
35-44	23.38	21.32	2.00	Sweden	3.32
45-54	7.04	6.10	0.70	Others	28.86
55-64	1.56	1.50	0.00	Unclear	0.48
65 or over	0.58	0.40	0.20	No answer	1.17
No answer	0				

TABLE I.   AGE AND GENDER AND TOP COUNTRY DISTRIBUTIONS

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[1] 2,25 % of respondents did not state gender

A. *Analysis of Sharing Elements*

Figure 1 summarizes the relative importance of different motivational factors in willingness to participate in sharing.
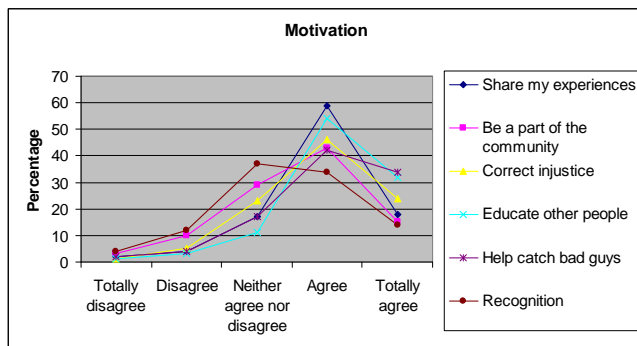

Figure 1.   Motivation for sharing

Figure 2 shows the attitude to online sharing in regard to revealing one's identity.
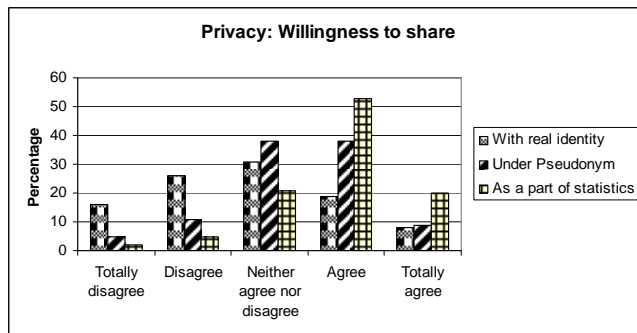

Figure 2.   Privacy and willingness to share

IV.   DISCUSSION

The study provided a lot of information on different aspects of factors that motivate users to share their security expertise with other online users and their current practices. A high level of willingness to share information with others was found: to help, to further general good, and to stop bad guys in the online environment. Supporting privacy preservation while sharing was required by users: The possibility of contributing just to the statistical information, not revealing real identity was preferred.

Further work is needed to verify the findings and get more answers. On the issue of recognition, to see if there is a need for explicit recognition of users' individual contributions, or if visualizing the joint contributions, e.g. in statistical form to the community, is gratifying enough and how this need may conflict with the need for privacy. The reason for big amount of users resistant to the idea of receiving recognition, as well as possible gender and cultural differences also need further study.

In-depth interviews on the survey areas among the security experts are planned as the immediate continuation of the work to verify the findings and get more detailed information on the most intriguing findings. Almost half of the respondents provided their contact information to be interviewed – further proof on the motivation and interest in making security management more usable for all users.

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