Interdependencies between Acceptance and Quality Perceptions of Social Network Services: The Standard-dependent User Blindness

Katsiaryna S. BARAN
Dept. of Information Science, Heinrich Heine University
Düsseldorf, Germany

and

Wolfgang G. STOCK
Dept. of Information Science, Heinrich Heine University
Düsseldorf, Germany

ABSTRACT

Social network services (SNSs) are having an increasing impact on social network communities. Social network communities regulate this impact and adopt SNSs to their cultural distinctive features. They are in permanent co-adaptations with SNSs. These „relationships" have two possible outcomes—the SNS either gains acceptance and will become standard or it slowly dies. Nowadays, Facebook *is the standard in the SNSs' world. However, in Russia's SNSs' communities the domestic SNS,* Vkontakte*, dominates. In order to explore the reasons for success or failure of a SNS and the perception of quality of SNSs among their users, we applied studies on perceived information system quality and on the acceptance of* Facebook *and* Vkontakte*. As a result, we found out for both SNSs that network effects create the „winner-takes-it-all" situation, where a critical mass of users is reached by one SNS, which is able to keep its dominant position. Each user will be „socialized" through this SNS (*Facebook *in Germany—*Vkontakte *in Russia). It is expectable that the users prefer „their" SNS in terms of use and impact. But our results show that even the users' perceptions of the SNS's quality (e.g., ease of use) is strongly influenced by the applied SNS. We will call this effect „standard-dependent user-blindness (SDUB)." It seems to be impossible to gather unbiased user perceptions on network markets.*

Keywords: Social network services, Facebook, Vkontakte, Standard, Acceptance, Service quality, ISE, Standard-dependent user blindness.

1. INTRODUCTION

This article presents a user-related concept for understanding and guiding the success or failure of social network sites (SNSs), *Facebook* and *Vkontakte*. It is based on questionnaires and interviews, that were constructed according to the Information Service Evaluation (ISE) model [10], and conducted with German and Russian students. Based on our study, we advanced our understanding of the current user's view on their favorite SNS, *Facebook* for German users and *Vkontakte* for Russians. We are going to evaluate empirically the information systems quality (perceived ease of use, usefulness, trust, fun), and its acceptance (adoption, use, impact, diffusion), of both, *Facebook* and *Vkontakte*. All test persons were familiar with both services.

With Boyd and Ellison [3], we define „Social Network Sites" (SNS) as „web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site."

2. NETWORK ECONOMY

The diffusion of services on information markets such like *Facebook* or *Vkontakte* is a typical phenomenon of network economics following the principle of „success breeds success." The more users an information service is able to attract the more the value of the service will increase. More valuable services will attract further users. If an information service passes the critical mass of users, network effects will start [7] [9]. This leads to positive feedback loops for direct network effects (more users—more valuable service—any more users) and indirect network effects (more complementary products—more valuable service—any more complementary products) and, in the end, to *one* standard [8]. But in the area of SNS, we find *more than one* services: *Vkontakte* in Russia (and neighbors) (Tab. 1) and *Facebook* in many countries of the world. In Germany, we could observe a struggle between *studiVZ*, a German SNS, and *Facebook*, and the winner was and still is: *Facebook*. Both SNSs, *Facebook* and *Vkontakte*, are not the First Movers in Germany (it was *studiVZ*) and Russia (here it was *odnoklassniki.ru*), but they became the standard on the regional SNSs´ market.

The value of being a member of a SNS does not depend mainly on the objective characteristics of a SNS but on the number of other people using the same SNS („to keep in touch with old friends," „to keep in touch with current friends"). The important feature is that „users are suppliers of content as well as consumers of content" [5]. The presence of network effects implies that positive feedback effects are working for the largest network; the strong becomes

Country	Number of Vkontakte users (mio)	Vkontakte Rank in Country	Number of Facebook users (mio)	Facebook Rank in Country	Internet users (mio)	Population (mio)
Russia	63.0	2	7.9	8	87.5	143.0
Ukraine	18.0	1	2.3	7	18.5	44.3
Belarus	3.4	1	0.5	10	5.2	9.6
Kazakhstan	2.3	3	0.7	8	9.7	17.9
United States	0.8	397	163.8	2	268.5	318.9
Germany	<0.1	144	25.3	2	69.8	80.9

Table 1. *Facebook* vs. *Vkontakte* (reporting year: 2012-2014). *Sources*: [1] [6] [13] [14].

stronger and the weak becomes weaker. This, in turn, implies that „the winner takes it all" [2].

Facebook (Fig. 1) achieved a critical mass of German users and is able to keep its dominant position as well as *Vkontakte* (Fig. 2) did it in Russia. When a critical mass of users is achieved, we typically observe a steep increase in users and usage [5]. Each user that enters the network imposes a positive externality since he/she increases the value of the system. Its number one position makes the users to concentrate on the respective SNS.

3. RESEARCH MODEL AND HYPOTHESES

Fig. 3 presents this study's research model, based on the Information Service Evaluation (ISE) model [10]. The model has two main focuses: first, to study the perceived information service quality of an SNS and, second, to incorporate the information acceptance of an SNS. Our research model considers that the „winner takes it all"-situation and its generated „standard-dependent user-blindness" are key factors affecting users' continued intention to use a SNS, and to hinder an unbiased quality perceptions of „their" (standard) SNS and of other (perhaps even better) SNSs. Fig. 3 presents the definition and this study's hypotheses of each construct.

3.1. INFORMATION SERVICE QUALITY

Nowadays, in Germany *Facebook* is the standard SNS, in Russia (und neighbors) it is *Vkontakte*. We have studied both SNSs, *Vkontakte* and *Facebook*. The first aspect we investigated involves the evaluation of the *perceived information service quality* as a user estimates it, with the indicators: *perceived ease of use, perceived usefulness, perceived trust* and *perceived fun*. The perceived service quality is introduced in the Technology Acceptance Model (TAM [4] and TAM 2 [12]).

Hence, in this work we propose the following *hypotheses*:

H1. The users' perceptions of the quality of an SNS are strongly influenced by the standard SNS. The „winner-takes-it-all" situation makes its users „blind" to give an unbiased quality perception of „their" (standard) SNS and of other (perhaps even better) SNSs. It is not quality, that leads to success.

Figure 1. German interface of *Facebook* (*Source*: facebook.com).
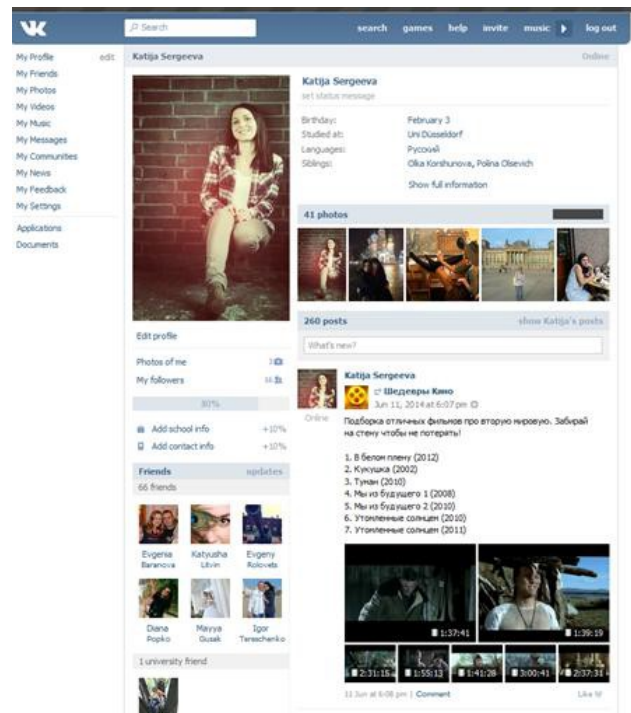

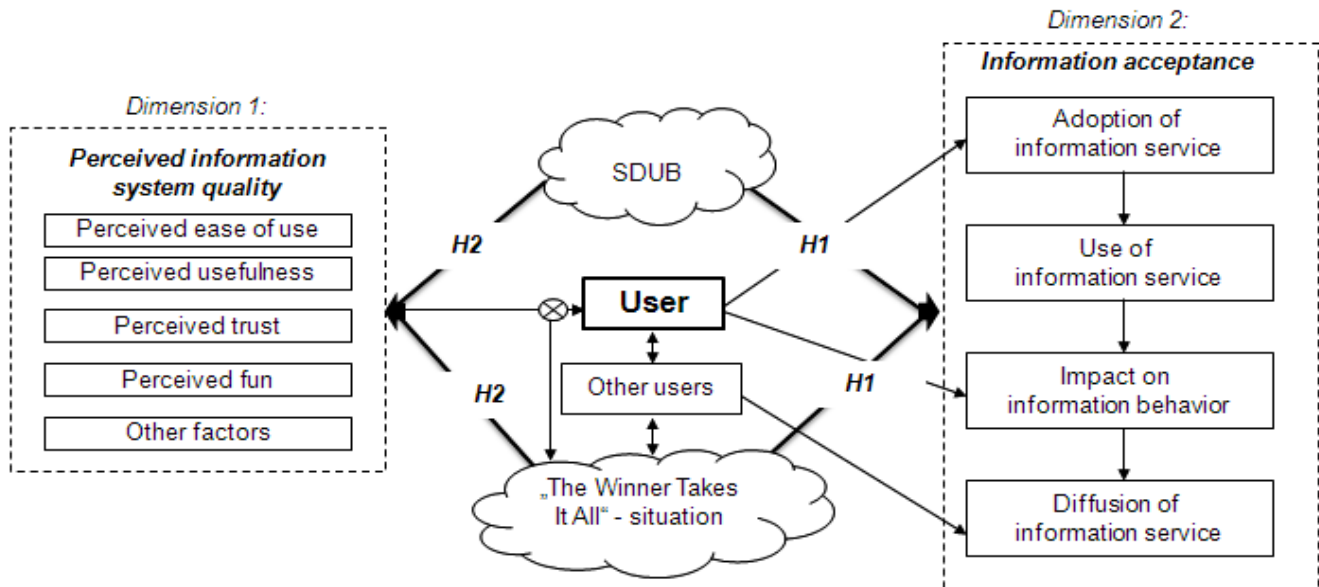Figure 2. *Vkontakte* (*Source*: vk.com).

Figure 3. The Standard-Dependent User-Blindness (SDUB) in the context of The Information Service Evaluation (ISE) Model

3.2. INFORMATION ACCEPTANCE

This dimension involves the description of *information acceptance* with the indicators of *adoption, use, diffusion* of information services, and the *impact* on the users' information behavior. If the „right" person in an appropriate situation meets the „right" information service, she or he will adopt and use this service. Adoption does not mean use. One can adopt a service and stop to use it or one can adopt it and use it permanently. We speak of use when the user applies some of the information service's functionalities in his or her professional or private life, once there is an information need. In the case of use it is possible that the user's information behavior will change. We will call this aspect impact. Finally, an information service will diffuse into a society, when many people use it and it has impact on their information behavior. Here, we find the aspect of social influences in the technology acceptance model TAM 2 [12]. Diffusion is a typical phenomenon of network economics following the principle of „success breeds success," and leading to the „winner takes it all" situation. Summarizing the above arguments, we *hypothesize* that:

H2. The users' adoption and use of a SNS, the SNS' influence on the users' information behavior and its diffusion into the (regional or global) community is strongly influenced by the standard SNS (and its „winner-takes-it-all" situation).

4. RESEARCH METHOD

We tested our hypotheses and structural model framework on case studies. The target respondents of this study were current SNS users in Moscow, Russia, and Düsseldorf, Germany. Empirical data for this study was collected by a questionnaire and additionally by in-depth interviews in February and March 2014. Our test persons were Russian students from *Lomonosov Moscow State University* (N = 54) and German students from *Heinrich Heine University of Düsseldorf* (N = 27). The interviews took place at both universities. We conducted the study among those user groups, because both social network sites, *Facebook* and *Vkontakte*, were initially targeting students, but later welcoming everyone [11]. A total of 81 test persons completed the questionnaire and the interview. Among these SNS users, 61.1% were female and 38.9% were male. Most of the test persons were between 18 and 28 years old. A large proportion of Russian participants has a *Vkontakte* account and uses *Vkontakte* frequently; a small amount of Russian students have also a *Facebook* account, but most of them do not use it actively. German students have a *Facebook* account and use it very actively, but they did not have a *Vkontakte* account, so our test persons were instructed to create it for this study and use it actively for about one month.

The questionnaire included 50 items. On a scale between 1 (not at all) and 10 (highly applying), every test person had to estimate the importance of an indicator for his or her SNS behavior for both services, *Facebook* and *Vkontakte*. Our test persons were asked about adoption, use, impact and diffusion as well as about their quality perceptions for both SNSs. All test persons were familiar with both SNSs. Typical questions for the dimension of information service were: „Is the design of SNS clear and easy to use?", „Could you quickly orient yourself on the website?", „Is *Vkontakte*/*Facebook* easy to use?" and „Do you find that *Vkontakte*/*Facebook* enriches your life?" etc. In regard to information acceptance we asked for example, „Has *Facebook*/*Vkontakte* a strong influence on your life/daily behavior?", „I have once used *Facebook*/*Vkontakte*, and since I am an active user." etc. Besides the language (Russian versus German) all questions were identical.

5. RESULTS

In this section we present the results of our analysis as guided by the aforementioned hypotheses and research model.

5.1. QUALITY PERCEPTION OF *FACEBOOK* AND *VKONTAKTE* OF GERMAN AND RUSSIAN SNS USERS

For all indicators of the first dimension (information quality)

	Vkontakte **Mean (SD)** *Russian users*	Vkontakte **Mean (SD)** *German users*	**Significant difference?**	*Facebook* **Mean (SD)** *Russian users*	*Facebook* **Mean (SD)** *German users*	**Significant difference?**
Ease of use	9.13 (0.99)	7.82 (1.61)	**	4.95 (2.34)	7.91 (1.32)	***
Usefulness	3.93 (1.99)	4.38 (1.40)	NS	2.49 (1.67)	5.67 (1.65)	***
Trust	6.38 (2.52)	3.83 (2.14)	***	2.46 (1.93)	5.90 (2.24)	***
Fun	5.77 (2.39)	3.73 (1.94)	**	2.59 (1.71)	4.80 (1.95)	***

Table 2. Information service quality indicators for *Vkontakte* and *Facebook*; NS: not significant; *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$.

our Russian and German participants chose their favorite SNS—Russian users favor *Vkontakte* over *Facebook* and German users favor *Facebook* over *Vkontakte*—(almost) all values are twice as high (Tab. 2). Additionally, the differences between *Facebook* and *Vkontakte* are statistically very significant for nearly all indicators, apart from usefulness of *Vkontakte*. *Vkontakte* is perceived as very easy to use for both groups of participants (mean: 9.16 among Russian and 7.82 among German users) in contrast to *Facebook* with a value of only 4.93 among Russians. Russian users trust *Vkontakte* (6.37) much more than *Facebook* (2.38), and they have more fun using *Vkontakte* (5.77) than using *Facebook* (2.49) as well as German users give their preference to *Facebook* with 5.90 for trust and 4.80 for fun. The difference between both SNSs with regards to usefulness is not very high (but here, too, *Vkontakte* is perceived more useful for Russian users and *Facebook* for German participants). The more our participants trust the SNS and the more they have fun using it, the more they perceive it as useful. The more users perceive fun the more they use the SNS. It is obvious that identical questions on the same SNSs lead to completely different answers in dependence of the affinity of the users' standard SNS.

5.2. *FACEBOOK'S* AND *VKONTAKTE'S* ACCEPTANCE OF GERMAN AND RUSSIAN SNS USERS

Acceptance analysis based on four indicators—*adoption, use, diffusion* of information services, and the *impact* on the users' information behavior—shows double or even triple values in favor of *Facebook* for German and *Vkontakte* for Russian users (Tab. 3). German users adopted *Facebook* and use it permanently as Russian users did it with *Vkontakte*. In the case of use it is possible that the user's information behavior will change and, indeed it did.

Finally, both SNSs diffused into a society and users use it—German users prefer *Facebook* and Russian users *Vkontakte*—and it has impact on their information behavior. That is evident from everyday life: the more a user applies a SNS the higher is the probability that his or her information behavior will change.

6. DISCUSSION

This study proposes that there is a strong influence on the users' adoption and use of a SNS, the SNS' influence on the users' information behavior and its diffusion into the (regional or global) community by the standard SNS (and its „winner-takes-it-all" situation) and the users' perceptions of the quality of a SNS as well.

The study results suggest that our research model exhibits good explanatory power to predict users' SNS behavior, providing a new direction for researchers to contemplate in subsequent research.

SNS practitioners can draw several implications from this study. First, the results suggest that the users' behavior regarding the acceptance an SNS is influenced by the standard SNS, the SNS that has reached the „winner-takes-it-all" situation. Second, the results of the service quality perception are extremely interesting and concerning to the SNS use also new.

This study discovered that users perceive the quality of an SNS dependent on their standard SNS. The „winner-takes-it-all" situation makes its users „blind" to give an unbiased quality perception of „their" (standard) SNS and of other SNSs. If such an effect applies to other markets of the network economy, we always must expect the biased users' perception, the „standard-dependent user-blindness (SDUB)," in all social science studies concerning social media.

	Vkontakte **Mean (SD)** *Russian users*	Vkontakte **Mean (SD)** *German users*	**Significant difference?**	*Facebook* **Mean (SD)** *Russian users*	*Facebook* **Mean (SD)** *German users*	**Significant difference?**
Adoption	7.98 (2.76)	4.41 (2.99)	***	2.57 (2.53)	7.33 (2.65)	***
Use	7.47 (2.06)	2.98 (1.59)	***	2.13 (1.58)	7.05 (1.70)	***
Impact	5.17 (2.66)	2.32 (1.52)	***	1.76 (1.44)	4.89 (2.12)	***
Diffusion	6.95 (2.65)	4.19 (2.70)	**	3.87 (2.91)	6.26 (2.41)	**

Table 3. Information acceptance indicators.

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