SSE Riga Student Research Papers
2012: 9 (148)

MIGRATION BETWEEN SOCIAL NETWORK SITES: CASE STUDY OF DRAUGIEM.LV IN LATVIA

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ISSN 1691-4643
ISBN 978-9984-842-62-2

November 2012
Riga

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May 2012
Riga

Abstract

This research identifies factors that affect Draugiem.lv user intention to switch their current social network site by employing the Push-Pull-Mooring framework suggested by Cheng et al. (2009). The findings of this research fail to reject all three of the stated hypotheses, namely, that Push factors negatively affect user intention to switch if the underlying variables are related to satisfaction with the service quality; that Pull factors positively affect user intention to switch if the underlying factors are related to attractiveness of alternatives and peer pressure; that Mooring factors positively affect user intention to migrate if the underlying variables are related to easiness to switch. Furthermore, we show that Pull effects are significantly larger than Push and Mooring effects, indicating that users are strongly influenced by the preferences of their peers and the attractiveness of alternatives.

Keywords: social network sites, user migration, Push-Pull-Mooring.

Acknowledgements

We would like to thank the people that helped us with our research. In particular, we owe our deepest gratitude to Marina Pavlova for her guidance throughout the whole process of carrying out this research. Additionally, we would like to thank Guntars Meluškāns, Juris Auzāns, Artūrs Mednis, Arjan Tupan, Kaspars Driķis, Ernests Štāls, Marko Saue, Laura Lasmane, Mārtiņš Dziedātājs, Rolands Laķis and Jānis Polis for sharing their insight and Draugiem.lv for providing us with the necessary data.

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1. Introduction

In 2006, danah boyd[1] in her blog post examined the fall of Friendster and the rise MySpace, indicating that if users are not satisfied with the social network site (SNS) they use, large-scale migrations are possible (boyd, 2006). At the time it was not clear how popular MySpace would turn out to be, but boyd (2006) suggested that MySpace, similarly to its predecessor Friendster, could also turn out to be just a "fad" (p. 1). In July, 2006, MySpace became the most viewed website in US showing large growth prospects (Piskorski et al, 2008), but despite the tremendous success it gained the prediction of boyd (2006) seems to have come true. Today MySpace dies quietly in the shadow of Facebook, the ambitious Harvard campus start-up (Piskorski et al, 2008), which at the time of writing this paper has roughly 800 Million users (LA Times, 2011). The more recent events of user migration to Facebook from Orkut.com in India (IBN Live, 2010) and Brazil (Mashable, 2012) and Hyves.nl in Netherlands (comScore, 2012) suggest that the migration phenomenon between social network sites is very much prevalent.

Our research seeks to contribute to the existing empirical literature of SNS migration with evidence from Draugiem.lv, a local Latvian SNS, which at the time of writing this research is among the few locally created SNS in Europe not yet dominated by Facebook (Cosenza, 2011). A case study of Draugiem.lv is particularly interesting due to the highly competitive environment the Latvian SNS is operating in. Draugiem.lv was launched in 2004 and by 2007 it had acquired 1 million users (Draugiem.lv, 2007) with roughly 70% of the user base being Latvians (db.lv, 2007). While Facebook was gaining recognition across and beyond the U.S., Draugiem.lv sustained their positions locally with a few expansion attempts to neighbouring countries, however these attempts according to Draugiem.lv management were not very successful (MindShare, 2011; G. Meluškāns, personal communication, November 16, 2011). Today, however, more than 1.147 Million Latvians have registered on Draugiem.lv (7Guru, 2011) making it currently the most viewed website in Latvia (Gemius, 2011) and allowing it to hold a strong position against Facebook, one of it's largest competitors (7Guru, 2011). The success of Draugiem.lv in the future is subject to the ability to hold on to their users and mitigate user migration from Draugiem.lv to Facebook (db.lv, 2012).

[1]danah boyd is a pioneer in social media (Fast Company, 2009) and she has been named "the high priestess of internet friendship" by the Financial Times (2006). Her real name is spelled with lower case letters (Fast Company, 2012).

According to Kumar, Zafarani and Liu (2011) migration or switching between social network sites can be divided in *site migration* and *attention migration*; the former attributes to a situation where a user deletes her profile from one SNS and sets up a new profile in another SNS, while the latter represents the user shifting her activity between one SNS and the another without the removal of her profile. Attention migration implies keeping several user profiles at the same time and as pointed out by Zhang and Sarvary (2011) this phenomenon of *multi-homing* is widely popular[2]. In addition, Kumar, Zafarani and Liu (2011) point out that attention migration can result in site migration eventually. The growing presence of Facebook and other SNS in Latvia as well as the aforementioned trend of user multi-homing suggests that the Draugiem.lv community could be experiencing a potentially large pressure to try new SNS other than Draugiem.lv, which has also been pointed out as a reasonable threat by Draugiem.lv management (db.lv, 2012). This phenomenon of increased competition provides fertile grounds to examine Draugiem.lv user intention to switch to another SNS. Since site migration, as discussed by Kumar, Zafarani and Liu (2011), implies measuring user presence on two sites, it demands access to sensitive and possibly classified information. Due to this reason we focus on attention migration, assuming that users migrate from SNS_1 to SNS_2 when they no longer make any activities on SNS_1 while still keeping a user profile on the SNS_1. Given the aforementioned settings of the phenomenon, this paper is aimed to answer the following research question: **what factors affect Draugiem.lv user intention to switch their current social network site?**

The existing literature of migration between online services suggests that user migration is subject to user preferences towards services as well as the costs that a user needs to bear in order to switch service providers (e.g., Keaveney & Parthasarathy, 2001; Chen & Hitt, 2002; Hsieh, Hsieh, & Feng, 2011). Furthermore, a recent study by Cheng, Yang and Lim (2009) suggests that migration between SNS can be examined by using the Push-Pull-Mooring (PPM) framework, a model originally introduced by Bansal, Taylor, and James (2005), which is based on the fundamental notions of consumer migration between service providers. Our research focuses on determining and explaining the factors that affect intention to switch between SNS by using the PPM model suggested by Bansal et al. (2005) and Cheng, Yang and Lim (2009). The analysis is done by examining survey data gathered from a sample of 1141 Draugiem.lv users, with gender and age distributions representing the actual gender

[2] Zhang and Sarvary (2011) in their paper refer to a research by Pew Internet & American Life Project (2009).

and age distributions on the SNS[3]. In order to analyse the findings in detail, we interview local and foreign experts in the field of SNS as well as the Draugiem.lv management. The findings of this work will contribute to the understanding of what impacts the migration of SNS users.

The rest of the work is structured as follows. Literature review defines the most important aspects related to the research, as well as discusses previous findings in the field of SNS migration. This part is concluded with hypothesis drawn from previous research. Methodology part introduces the PPM framework and additional factors relevant to the model, in addition to describing the data used in the research. Analysis part discusses the findings of the regressions. Discussions part examines the real life implications the findings have on Draugiem.lv.

[3] The data was gathered on Draugiem.lv platform using a built-in questionnaire tool administered by Draugiem.lv. This tool used random sampling method and allowed controlling for age and gender distributions in the sample.

2. Literature Review

The following sections examine the existing literature in the field of SNS migration. First, we define what is an SNS and what it means to migrate between SNS. Further, we introduce the theoretical aspects of SNS migration from prior research in the field.

2.1. Social network sites: definition

Before examining the migration implications of social network sites, it is necessary to define what social network sites are. Organization for Economic Co-operation and Development (OECD) (2010) suggests that amongst blogs, text-based communication, instant messaging, mobile communication, group-based aggregation, photo-sharing, pod-casting and virtual worlds, social network sites are distinguished as a sub-form of participative network platforms, which facilitate social communication and information exchange. More specifically, danah boyd and Nicole Ellison (2007) define social network sites as "web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system" (p. 2). As the definition proposed by boyd and Ellison (2007) goes, social network sites are web-based platforms that provide individuals an opportunity to compose a public or semi-public profile within a specific network. The profile is a fundamental part of SNS as it represents the user based contents and defines the nature of interaction in the online community (Ellison, Steinfield & Lampe, 2007). The profile can be enhanced with personal information in the form of descriptions, pictures, videos, applications, posts, etc., and it is said to serve as a digital representation of oneself (boyd, 2007).

The SNS facilitates the management of connections with other users, hence it is possible to maintain relationships as well as create new ones. For that matter social *network* sites should not be confused with social *networking* sites, which are sites that exclusively help people acquire new contacts (boyd, 2007), e.g., dating sites. In addition, Wilkinson and Thelwall (2010) state that SNS is a platform that permits users to design a personal profile, publicly connect to other users as friends and privately interact with the connected friends. Draugiem.lv incorporates all of the aforementioned characteristics (Draugiem.lv, 2012) complying with the definition of a social network site or social network *platform*, the latter being a term often used as a synonym for the concept of a social network site (Social Times, 2008).

2.2. Social network sites: creation

The process of how communities develop and come together has been a widely studied research topic in social sciences (e.g., Katona & Sarvary, 2008; Tsai, 2000; Lai & Turban, 2008). Within the studies considering group and network formation a universal backbone can be distinguished, i.e., majority of such studies are based on the theories of social capital (Portes, 1998). According to Portes (1998), social capital is "the ability to secure benefits by virtue of membership in social networks or other social structures" (p.4). Furthermore, the identified purpose of social capital has been facilitating the supervision of other members, as well as receiving benefits from members on the network (Portes, 1998). Social capital is found to be positively linked to the usage of SNS, where people find value in getting in touch with their friends and "weak ties"[4] (Ellison, Steinfield, Lampe, 2007). This seems to be in line with Backstrom et al. (2006) and Krasnova et al. (2008). Backstrom et al. (2006) propose that the probability of a person joining an online community increases with the number of friends the person has on this platform. Krasnova et al. (2008), on the other hand, find that users join SNS due to the feeling of belongingness and the need for self-representation.

In their seminal work Katz and Shapiro (1985) suggest that the value of telephone use increases as the telephone network grows. Similarly to the example of Katz and Shapiro (1985), the utility a user derives from an SNS depends on the number of other users on the SNS, thus implying positive network externalities, but according to Kuan-Yu Lin and His-Peng Lu (2011) this is just one part of the story. They find that network externality theory can be combined with motivation theory, which is based on the perceived extrinsic benefits, i.e., usefulness, and intrinsic benefits, i.e., enjoyment. The findings of Lin and Lu (2011) suggest that enjoyment is the most important factor that attracts users to join SNS. In addition, Lin and Lu (2011) find that the number of peers positively affects perceived extrinsic and intrinsic benefits. These findings align with Kumar, Novak and Tomkins (2006) who find that people join social network sites either because they wish to explore the sites by themselves or because they were invited by someone they know from their offline community.

[4] According to Granovetter (1973) the more time individuals spend together, the stronger are their ties. Thus, implicitly, weak ties represent acquaintances.

2.3. Social network sites: migration

The market of social network sites is abundant with alternatives, hence, migration from one social network site to another is a very much occurring phenomenon (Chang, Yang and Lim, 2009). Migration in the context of SNS, as opposed to physical migration, does not necessarily mean that users completely depart from one site and move to another, but also suggests that users might be present in several networks at once, an event known as multi-homing (Rochet & Tirole, 2003). Migration that concerns a user completely deleting her profile on one site and setting it up on another is known as *site migration*, while migration to another site without profile deletion is attributed to *attention migration* (Kumar, Zafarani, & Liu, 2011), the latter being the focus of our research.

Despite the fact that user migration between different social network sites has not been widely examined by quantitative studies, it has often been illustrated in case studies. For example, danah boyd (2008) indicates that following peer preferences led to increased growth of user base in the early stages of Friendster. A Myspace case study conducted by Piskorski, Chen and Knoop (2008) distinguishes site loading speed and functionality as important factors that affected user migration from Friendster to Myspace. boyd (2009) further indicates that migration from Myspace to Facebook could have been connected with differences in social classes, where Facebook attracted more educated people. In addition, Hiroshi Oyo (2011) suggests that the use of nicknames instead of real names in self-representation is an important factor that impeded Facebook's growth in Japan against the local network Mixi.

While specific factors from the mentioned case studies apply only to particular settings, they highlight that users seek to be connected to their peers, while at the same time they demand stable technology that facilitates communication and a site member policy that complies with their habits, interests and culture. In fact similar findings were revealed in a quantitative study by Chang, Yang and Lim (2009). Their research was carried out among 170 university students in China and Singapore. Chang, Yang and Lim (2009) revealed that dissatisfaction with SNS member policy as well as pressure from peers on an alternative SNS to join them has a significant impact on a user’s intention to migrate. Furthermore, they indicate that mooring factors, such as expected switching costs, do not have an important effect on the intention to migrate. The latter finding contradicts a with more recent research by Hsieh, Hsieh and Feng (2011), who indicate that user migration between online mediums of social interaction is highly affected by switching costs. In their study they surveyed 325 bloggers to understand their intentions to switch to Facebook and the results suggest that the

relative usefulness, effectiveness of expression and relative playfulness of Facebook all contribute to the intention to switch, while switching costs are negatively associated with the intention to switch.

2.4. Understanding switching: Push-Pull-Mooring framework

Keaveney and Parthasarathy (2001) in their research emphasized that the rates of switching between providers in the industry of online services are quite high as opposed to other service industries. Furthermore, they indicate that differences between those users that continue using a given online service and those that switch are subject to what sources informed the customers about the service, frequency and depth of service use, customer income level, customer risk-taking behavior, level of satisfaction and level of involvement in the service (Keaveney & Parthasarathy, 2001). Lee, Lee and Kim (2008), however, in the context of personalized digital communities[5] suggest that rather than observing the differences between continuers and switchers it is reasonable to divide the factors in those contribute to user satisfaction, those that stand for attractiveness of alternatives and those that are attributable to switching costs. Cheng, Yang and Lim (2009) and Hsieh, Hsieh and Feng (2011) in their studies employ a fairly similar approach to studying user switching, however both studies refer to Bansal et al. (2005). In their research Bansal et al. (2005) examine the different factors that affect consumer migration between services and present the Push-Pull-Mooring framework that integrates consumer satisfaction (Push factors), perception of alternative service providers (Pull factors) and possible obstacles that hinder switching (Mooring factors). Using data gathered from 700 consumers in the context of hairstyling and vehicle repair services Bansal et al. (2005) find that Pull and Mooring factors are stronger than Push factors, nevertheless they suggest that the PPM framework is adjustable to other services as well and the strength of Push, Pull and Mooring can vary with respect to the phenomena of a study. This very framework has been used by Zhang, Cheung, Lee and Chen (2008) in order to investigate factors influencing bloggers' intention to switch blog service providers, as well as by Kim, Shin and Lee (2006) to explore user intention to switch between e-mail service providers. In the context of SNS, according to Cheng, Yang and Lim (2009) the PPM framework implies that the individual's intention to migrate is affected by the level of dissatisfaction with an SNS, attraction of an alternative SNS and switching costs, respectively. The three aforementioned factors each consist of additional sub-factors.

[5] According to Lee, Lee and Kim (2008), personalized digital communities are a sub-category of SNS.

Our motivation to use this particular framework is related to the illustrative power this framework embodies, as well as its adaptability to different factors of migration. Alternatively, Chuang (2010) in a research of the mobile phone industry finds evidence of a fourth factor, i.e., Habit, which negatively affects consumer intention to switch. While SNS have shown to be addictive (PR Newswire, 2011), the existing SNS switching literature to date does not indicate the necessity to expand the PPM model with a fourth factor, thus we do not observe Habit in our research.

The previously discussed literature contributes to the understanding of the different factors that influence user decision to switch between the SNS. We summarize the literature review in the following hypotheses:

H1: Push factors positively affect Draugiem.lv user intention to switch.

Cheng, Yang and Lim (2009) suggest breaking Push factors down in dissatisfaction with technical quality, information quality, community support and member policy. Technical and information quality as factors are consistent with Piskorski, Chen and Knoop (2008) who indicate site loading speed and functionality *pushed* Friendster users to stop using the service. Furthermore, community support aligns with the findings of Lin and Lu (2011) who find that communication is key on SNS. In addition, Oyo (2011) has pinpointed that a membership policy that does not comply with the culture and user habits will eventually repel users. The importance of membership policy has also been highlighted by the findings of Cheng, Yang and Lim (2009).

H2: Pull factors positively affect Draugiem.lv user intention to switch.

Bansal et al. (2005) suggested observing the attractiveness of an alternative service provider as the only Pull factor, however Cheng, Yang and Lim (2009) find that peer pressure is a much stronger Pull factor in the context of SNS and thus also should be introduced. These findings align with Kumar, Novak and Tomkins (2006), Backstrom et al. (2006), Ellison, Steinfeld and Lampe (2007) and Krasnova et al. (2008) who emphasize that SNS users follow their peers.

H3: Mooring factors negatively affect Draugiem.lv user intention to switch.

While the research of Cheng, Yang and Lim (2009) find Mooring factors to be insignificant, Hsieh, Hsieh and Feng (2011) points out that switching costs, which constitute to the Mooring factors, are, however, strongly associated with the user intentions to continue using their initial SNS and not switch.

While previous research in the field of SNS migration seems to be quite scarce, the existing literature proves to be useful in suggesting potential directions of causalities in terms

of factors affecting intention to switch. In the following section we aim to further introduce the variables we use to measure the significance of each of the PPM framework factors.

3. Methodology

3.1. Research design description

As discussed earlier, there are numerous precedents reflecting upon user migration between SNS indicating the sophisticated nature of the user satisfaction. As Draugiem.lv has managed to preserve its leader position in Latvia despite the presence of a fierce global scale competitor Facebook it is important to understand what are the catalysts that could make Draugiem.lv users to migrate between SNS. It is also important to identify to what extent users of Draugiem.lv are satisfied with their current service provider and how attractive they perceive an alternative SNS. It is equally important to comprehend what are the switching costs that the users of Draugiem.lv bear and to what extent the users are locked-in their position. Hence, in order to identify and examine the factors that affect users' decisions in regards to migration, as well as answer and discuss suggested hypotheses and the proposed research question we adjust and apply the PPM framework, which is enhanced with information from semi-structured interviews with industry experts for a more throughout result interpretation.

The PPM framework identifies factors that are increasing or decreasing SNS users' intention to switch to another SNS, hence by applying the framework we are able to distinguish the factors that affect intention to switch from Draugiem.lv to another SNS. More importantly, by depicting such factors we will be able to understand how the factors correlate and interact with each other and how they correspond to the intention to migrate. Additionally, we will understand how such factors and migration patterns vary between different groups of users. The semi-structured interviews are intended to distinguish Latvian-specific factors that can be integrated in the PPM framework prior to gathering data. In addition, the interviews contribute to the interpretation of the results obtained from the framework.

3.2. Survey design, sampling method and data description

As discussed earlier the PPM framework requires data that measures individual's satisfaction with current SNS, attractiveness of an alternative SNS and switching costs, also known as Push, Pull and Mooring factors, respectively. The approach of designing the survey was as follows: firstly, we used the survey designed by Cheng, Yang and Lim (2009) as the foundation for our questionnaire; secondly, we conducted semi-structured interviews with social media experts in two stages. The first stage interviews provided us with valuable inside

information, industry specific trends and different viewpoints regarding the research questions. More importantly the first stage interviews supplemented the PPM framework with Latvian-specific factors (see Appendix 10 for the interview guide). The second stage interviews were conducted after carrying out the regression analysis. This stage contributed to the research in terms of providing an expert view on the findings of our study, additionally drawing attention to implications of the research that could benefit the industries surrounding SNS, e.g., marketing, software development, consultancy, etc. The list of professionals interviewed is available in Appendix 8.

In total the questionnaire consisted of 37 questions. All of the questions in the questionnaire were stated on the scale of 0 to 6 (a 7-point Likert scale), where "0" indicates that respondent strongly disagrees with the statement and "6" implies strong consent. For a more elaborate graphical illustration of questionnaire design and its content see Appendix 1.

The sampling method for data used in the regression analysis is simple random sampling, which is done by using the internal survey tool of Draugiem.lv. By using this tool we have acquired a data set that consists of 1141 respondents answering 37 questions. Additionally we acquired 7 discrete variables that account for number of contacts in Draugiem.lv, number of pictures uploaded, number of pages followed[6], number of discussion groups followed, number of applications used, number of comments made on site (comments for pictures, updates, posts) and number of payments made. The date of acquiring results was January 25, 2012. The tool also allows controlling for the demographic distribution, hence the dataset we have acquired corresponds to the actual gender and age distribution of the whole Draugiem.lv population, which according to Webradar (2012) is 1.2 Million users. Taking this into account as well as simple random sampling approach, we can generalize the results of the paper to the whole population, namely, the whole Draugiem.lv user base. The data set gender distribution is 41.6% male, 58.4% female, the average age of a respondent is 31 years, where the minimal age is 15 and maximum age is 74.

Due to the fact that the contact information of the relevant experts was not easily accessible, we applied snowball sampling in terms of choosing the interviewees. This type of sampling ensures meeting with relevant people who might provide the research with valuable information. We chose Guntars Meluškāns, the creative director of Draugiem.lv, and Artūrs Mednis, Head of Inspired Digital at Inspired Communications as the starting points of the

[6] In 2010 Draugiem.lv introduced a tool for organizations to crete their profiles on the Draugiem.lv platform. This tool allows users to follow the news and activities on organizations' pages.

sampling. Both of the experts were selected because of their previous experience in the field, since Guntars Meluškāns has a long experience with working in Draugiem.lv and Artūrs Mednis is a representative of a company that is well known in Latvia for their SNS analysis and marketing activities surrounding SNS (7guru, 2011).

3.3. Dimension reduction

After acquiring the answers to the survey, it is necessary to decrease the number of independent variables used in the PPM framework. This is done using factor analysis, which permits combining several questions in one factor (see Appendix 1 for factors). Dimension reduction is conducted in two steps where in first step we combine the survey questions to form variables that correspond to variables as suggested by Cheng et al. (2009). The second step of dimension reduction will reduce the number of variables to three, namely, Push, Pull and Mooring factors that represent overall satisfaction, attractiveness of alternatives and switching costs respectively. In addition we create an index consisting of three questions that describe the dependent variable. The following section gives more elaborate view on dimension reduction and the practical implications of each of the variables.

The methods we apply in dimension reduction are factor and index creation. Both methods identify whether a set of observed variables, in this case survey questions, can explain a common factor due to common patterns and correlations. The indicators of the factor creation are Cronbach's alpha and rotated component matrix. Croncbach's alpha can be regarded as a reliability test that measures the true score of the underlying hypothetical value of an index. The value of this parameter varies from 0 to 1; values that exceed 0.5 are desired for the index to be considered legitimate. The rotated component matrix depicts the common variance amongst a set of variables. If the rotated component matrix values exceed 0.5 then the corresponding set of variables can be merged in one factor. Additionally, considering the theoretical background and the framework of PPM model we consider using correlation matrix if the factor analysis does not yield relevant results. Such step can be considered as the framework implies multiple questions being a part of a specific factor.

3.3.1. Dependent variable

The PPM framework depicts the factors that affect users' intention to switch, thus the dependent variable in the framework and in the regression is a variable that measures changes in intentions to switch. Such variable is constructed considering a user's perceived

probability of switching SNS, willingness to switch SNS and dedication to switch SNS in near future. As previously mentioned we aim to focus on attention migration, thus allowing users to multi-home and not completely abandon their current SNS in case of switching.

3.3.2. Push factors

Push factors reflect aspects that drive people away from a particular placement. Such factors depict the level of dissatisfaction with current service provider and are positively correlated with one's intention to migrate to an alternative service provider. Oliver, LaTour & Stephen (1981) defines dissatisfaction as cumulative summary of psychological state, which results from a combination of disconfirmed expectations and prior beliefs of service or product quality. In the context of SNS, this implies dissatisfaction with specific SNS components, such as technical quality, information quality, community support and SNS member policy (Cheng et al., 2009). *H1* states Push factors positively influence intention to switch if the underlying factors deal with dissatisfaction. The dissatisfaction can be expressed as a lack of satisfaction. Hence, if the Push factor is expressed as satisfaction with attributes of SNS, it has negative relationship with one's intention to migrate. To reduce the bias of answers shifting in the negative direction, in the questionnaire we proposed questions that deal with satisfaction as opposed to dissatisfaction, thus Push factors due to this shift should negatively affect the intention to switch as user satisfaction increases.

The technical quality of SNS addresses the question whether the technical infrastructure of SNS is formed to fulfill the practical needs of a user. The satisfaction with technical quality includes speed of downloads, practicality of navigation, easiness to maintain one's user profile as well as variety of available functions. The satisfaction with information produced on the SNS represents the perceived relevance and quality of available information and is measured in terms of accessibility, timeliness, organization and reliability of information. The perceived community support together with possibilities to create and manage interest groups represents the overall community support. The member policy is depicted by the extent to which a user trusts that the SNS would not misuse her sensitive information.

3.3.3. Pull factors

Pull factors indicate positive aspects enticing people to a certain place. According to Cheng, Yang and Lim (2009), in terms of SNS, *Pull* factors that indicate attraction to other network platforms can be depicted using instruments that measure attractiveness of alternatives and peer influence.

The attractiveness of alternatives is associated with gaining potentially higher personal welfare in case of switching, thus higher intention to switch will be present where user perceives an alternative SNS being more suitable and favorable. Attractiveness of alternatives can be expressed as *Push* factors but used in comparison to another SNS. In other words, users' conviction that an alternative SNS can provide higher technical, information quality as well as better community support and more favorable member policy is contributing to users' intention to switch between SNS. As SNS by definition is a platform for creating and managing personal connections with friends and acquaintances, user's decision of being on one SNS or another will be a factor of his or her friends' preferences towards a given SNS. Hence the peer influence can be expressed as friends' and acquaintances' level of dissatisfaction with contacting one in current SNS as well as the friends' and acquaintances' absence from one's current SNS.

3.3.4.Mooring factors

The *Mooring* factors are supplementing *Push* and *Pull* factors in terms of explaining migration and can best be described as obstacles that hinder migration between different SNS (Cheng, Yang and Lim, 2009). Hence migration might not always seem feasible even though SNS's user is encountering significant Push or Pull factors. According to Cheng, Yang and Lim (2009) Mooring factors can be expressed by using instruments devoted to setup costs and continuity costs which user has to bear in order to participate in a certain SNS. The setup costs and continuity costs are expressed as costs a particular user faces when migrating to an alternative SNS. These costs can be measured in terms of time, money and value of lost connections and the accumulated information on user's current SNS. The inconvenience of the sign-up procedure and profile creation in an alternative SNS, together with required information input is a proxy for determining setup costs. The continuity costs are characterized as follows: costs in terms of lost contacts with friends and acquaintances arising from switching SNS, time costs related to effort and time needed to make friends and acquaintances aware about the migration to an alternative SNS; and in terms of difficulties emerging from creating a new network of peers in an alternative SNS.

H3 states that Mooring factors negatively affect the intention to switch if the underlying factors are related to switching costs or factors hindering migration. All of the aforementioned switching costs related to switching between SNS, however, can be expressed in a reverse function, i.e., as *easiness to switch*. To avoid stating questions in a negative form,

the questionnaire was designed to observe the *easiness to switch*, therefore the relation in the regressions between Mooring factors and the intention to switch should be positive.

3.3.5.Nationality and emotional attachment factors

The conducted semi-structured interviews with relevant industry representatives in Latvia helped to indicate whether there is are any factors that are not included in PPM as suggested by Cheng, Yang and Lim (2009) but still should contribute to explaining the intention to switch SNS service providers.

According to Guntars Meluškāns (personal communication, November 16, 2011), the creative director of Draugiem.lv, one of the reasons why Draugiem.lv to date has not been overthrown by Facebook is the focus of the SNS on the local Latvian audience in terms of language, information about local events and collaboration with local organizations, which is an argument also supported by Arjan Tupan (personal communication, November 11, 2011), Artūrs Mednis (personal communication, October 14, 2011) and Kaspars Driķis (personal communication, December 12, 2011). From this we conclude that emotional and national attachment to Draugiem.lv are factors that might affect the migration of Latvians to other SNS, therefore we add them to the analysis of PPM to avoid possible omitted variable bias. For the full list of survey questions added to the model see Appendix 1.

3.3.6.Additional factors

The acquired 7 discrete variables indicate the depth of a user's relationship with Draugiem.lv, thus an increase in the relevant units of these variables should decrease the user's intention to switch. Hypothetically these variables are also a part of Mooring factors, however the existing literature does not provide enough evidence for inclusion of these variables in the Mooring factors. Due to this reason we observe the effect of each of these variables separately. Similarly, gender, age and Draugiem.lv being a user's first SNS are variables that lack clear empirical support towards being sub-factors of the PPM, thus they also are observed separately.

3.4. Regression analysis

When questions are combined and a limited number of independent variables created, we can use regression analysis in order to depict how specific factors influence Draugiem.lv user intention to switch. The framework in terms of regression looks as follows:

$$(\text{Intention to switch}) = ß_0 + ß_1*(\text{Push factors}) + ß_2*(\text{Pull factors}) + ß_3*(\text{Mooring factors}) + u_0$$

$$(\text{Intention to switch}) = f(\text{determined, probability, willingness})$$

Push factors:
$ß_0 + ß_1$*(technical quality)+ $ß_2$*(information quality)+ $ß_3$*(community support) + $ß_4$*(member policy)+

Pull factors:
+ $ß_5$*(attractiveness of alternative) + $ß_6$*(peer influence)+

Mooring factors:
+ $ß_7$*(easiness to switch) + u_0

We observe the causalities of factors and the dependent variable through a total of 7 sets of regressions (see Appendix 7). The samples that we observe in more detail are the users that indicated Facebook as their secondary SNS and users that spend 50% or more of their time on the secondary SNS, both user groups being subject to potential migration. Furthermore, we add the 7 aforementioned discrete variables as well as gender, age and Draugiem.lv being the first SNS variables to the regression for the whole general sample. The users that did not have a secondary SNS were automatically dropped from the examined sample by the software. The sample size after this adjustment is 1104.

3.5. Validity

3.5.1. Internal validity

The internal validity concerns the relationship between the dependent and the independent variables in terms of causality. The internal validity is examined in three dimensions. First internal validity condition is the causality identification. Such condition implies that the causality identified has to have an explanation, backed up by theoretical background and reasonable implications. Given the fact that the model of this research is developed from migration literature that has been adapted to examine SNS, the use of independent variables is justified. As discussed earlier, intention to migrate is a function of Push, Pull and Mooring factors as well as underlying variables of each of the factors.

Secondly, the temporal precedence condition has to be satisfied, namely the cause preceded the outcome. In context of this research, this condition is satisfied as the intention to switch is a function of Push, Pull and Mooring factors and not vice versa. If the user of SNS feels that his expectations of quality changes, an alternative SNS starts to seem more desirable or the user is locked in the position, only then the intention of switching will occur.

Third internal validity condition is omitted variable bias. It implies a presence of a variable that is correlating with one or more independent variables and has a strong explanatory power of dependent variable. If such variable indeed is present, then the

causality between independent variables and dependent variable is biased. Such threat is reduced by applying a model developed and applied in earlier studies, as well as adjusting the model for country specific factors.

3.5.2. External validity

External validity concerns the generalization of the results. Such validity threat can occur if the sample size is small, sample fails to represent the population or an inapropriate sampling method is used. The threat of external validity is minimized by acquiring a sample, that perfectly represents age and gender distribution. Additionally, sample size of 1141, exceeds sample sizes of similar studies. By using innteranl questionnaire tool of Draugiem.lv, the sample collection used simple random sampling. Only condition that does not suffice, is inability to control for the users SNS habits. For example, the ones who filled the survey might be persistent Draugiem.lv users.

3.6. Delimitations

In this study we have chosen to examine what are the underlying factors that determine users' intention to migrate between SNS; hence, we consider literature that covers migration, attention migration, migration between service providers, determinants of consumers' satisfaction, satisfaction and migration. The literature that covers SNS as an entity is also considered in this paper; however, it is not fully relevant to our research topic. As a basis for the methodology we have taken a Push Pull Mooring framework. According to the literature this framework has been applied previously when researching similar phenomena. The population of our study is the entire user base of Draugiem.lv. The population is suitable for this research, as the phenomena researched implies an absence of migration from Draugiem.lv to an alternative SNS. The sample acquired representing population relatively well, as simple random sampling is applied, a sample size is large and the sample corresponds to gender and age distribution of Draugiem.lv.

4. Empirical findings

4.1. Descriptive statistics and survey results

In this part we carry out a preliminary analysis of the data we have acquired. We do this by establishing a firm understanding of how the data set looks and what implications the descriptive statistics provide. As mentioned, the data set consists of 37 survey questions, answered by 1141 respondents. Additionally we have acquired 7 discrete variables, which measure individual's involvement in Draugiem.lv. Such involvement is measured in terms of the network the user has created around her and how actively the user participates in generating new information and content. More importantly this section delivers an initial feeling of how migration decisions are formed as well as to what extent users are satisfied with their current service provider, how attracted they feel to an alternative SNS and whether users are in a locked-in position, i.e., whether users bear high switching costs in case of migration.

Table 1 gives a summary of the choice of a user's secondary SNS. The table suggests that the most common secondary SNS is Facebook, 520 individuals or 45.6% of our sample indicate this to be true, which shows support to the previously addressed issue of Facebook being the most severe competitor of Draugiem.lv. Other common choices are Twitter and Google+, with 12.5% and 16% respectively. Twitter statistics are often added for comparison to other SNS in Latvia, regardless of the platform being different to Draugiem.lv and Facebook in terms of functionality (e.g. TNS, 2011; Webradar, 2012). In contrast, Google+ is a very recent product of Google and as stated by CircleCount (2012) Google+ has 48,377 registrants from Latvia, which according to the information provided by Webradar (2012) is far less than the number of registrants in Draugiem.lv (1,2 million), Facebook (300,000) or Twitter (65,000)[7] in Latvia.

In terms of domestic competition, no significant rivals can be identified. The cumulative choice of other Latvian SNS constitutes only 9.9% of the sample. An interesting finding is that SNS potentially popular among the Russian speaking citizens are not so widely used among users in our sample despite the large proportion of Russian speaking citizens in Latvia[8]. Two most commonly known SNS coming from Russia, namely Odnoklassniki and

[7] The number of users registered from Latvia on a given SNS does not show the number of active SNS users, however it serves as an illustration of the potential userbase for a given SNS.

[8] According to the Central Statistical Bureau of Latvia (2011), Latvian speakers amount to 62.1%, while Russian speakers add up to 26.9% of the population of Latvia.

Vkotakte, have captured only 2.5% and 0.5% respectively, which supports the notion that our sample and presumably the whole population of Draugiem.lv user base is dominated by Latvians only.

Table 1

Choice of secondary SNS	*Frequency*	*Percent*	*Cumulative percent*
Is draugiem.lv your first SNS?			
Yes	789	69.1	69.1
No	352	30.9	100
Which is your secondary SNS?			
Draugiem.lv is the only SNS I use	176	15.4	15.4
Facebook	520	45.6	61.0
Twitter	143	12.5	73.5
Myspace	4	0.4	73.9
Google+	183	16.0	89.9
Odnoklassniki	29	2.5	92.5
Vkontakte	6	0.5	93.0
One.lv	38	3.3	96.3
Orb.lv	5	0.4	96.8
Oho.lv	37	3.2	100.0

Source: Made by authors

Appendix 2 presents user time allocation between Draugiem.lv and secondary SNS. We can see that time allocation is not distributed evenly and is skewed to the right implying that the majority of the respondents allocate more time on Draugiem.lv than on their secondary SNS. Such results are arise from the definition of primary and secondary SNS, meaning that individuals perceive the SNS where they spend most time as the primary, even though the functionality and marginal benefit distribution might be different. An interesting finding is that 33.47% of respondents allocate time evenly, hence depicting an increasing possibility of migrating to secondary SNS. Appendix 2 also presents time allocation between Draugiem.lv and Facebook. The distribution is not as consistent as, in comparison, with the whole SNS, however the underlying implications are the same. Appendix 2 in addition depicts time allocation between Draugiem.lv and Twitter and time allocation between Draugiem.lv and Google+. If a user of Draugiem.lv has chosen Twitter as the secondary SNS then the time allocation histogram looks more concentrated, implying that more time compared to Facebook will be spent on the secondary SNS. This once again, can be explained by the different functionality of Twitter. In contrast, the time allocation between Draugiem.lv and Google+ is high in the middle node, while rest of the values are skewed to

the right, implying that Draugiem.lv users, that have chosen Google+ as a secondary SNS tend to allocate time evenly between these two SNS.

The following section will summarize the results from survey questions. As previously discussed, the survey captures user satisfaction levels with technical, information, communication quality, satisfaction with member policy and information disclosure as well as the level of attractiveness of alternatives, peer influence, easiness to switch and national and emotional attachment to Draugiem.lv. The aforementioned parameters in aggregate reflect upon Push, Pull and Mooring factors, which in turn affect the intention to migrate. Appendix 3 provides a summary of survey question statistics. We look at questions that represent the dependent variable, namely, intention to switch. These questions measure determination, probability of and plan to switch SNS service providers in the near future. The results depict that the highest mean of these three questions is for determination to switch while the lowest is for probability of switching. The values are 2.05 and 1.18, on a scale from 0 to 6 respectively. This implies that on average, people who have identified unsatisfactory conditions with Draugiem.lv are open to an idea of switching; however, they also suggest that the probability of users actually switching is quickly low.

Appendix 3 identifies that users of Draugiem.lv are on average satisfied with technical quality, information quality, community support and communication possibilities, as well as with member policy. All of the means vary around the value of four and are negatively skewed, implying small tail towards small values. The lowest value of satisfaction parameters, but still significantly high is for information disclosure. Additionally we can identify, that a relatively contrary value distribution can be observed for questions measuring attractiveness of alternatives, implying a smaller mean and an insignificant skewness. These results imply that individual's levels of satisfaction with Draugiem.lv exceed perceived attractiveness of an alternative SNS. Questions intended to measure peer influence that consequently also contributes to migration decision display relatively low means. This signals us that most of the user's peers are also using Draugiem.lv and that individual's acquaintances do not find it very difficult to communicate via Draugiem.lv.

A relevant finding comes from questions that measure how easy it would be to switch SNS providers. Alternatively, we can look at the easiness to switch as a reverse function of lock-in costs. The high values of the question imply that users of Draugiem.lv perceive the switching process to be easy and with small amount of costs. This in turn might imply that in case a user is dissatisfied with Draugiem.lv and finds using an alternative SNS more desirable, the user might migrate easily due to the low lock-in costs. Such case, however, is

inconsistent with the arguments stated earlier when we identified the differences in determination to switch and probability of switching. These two aspects will be analysed more in the regression analysis.

Lastly, the questions that we developed in accordance with interviews with industry specialists show very high mean values for two questions, implying that, indeed, emotional attachment and nationality factors are relevant measures that have to be included in further analysis. The mean values show that people don't find it important that an SNS is only in Latvian. However, people display high emotional and national attachment towards Draugiem.lv.

The descriptive statistics from discrete variables have several implications (see Table 2). We see that on average Draugiem.lv users have 267 contacts in their network. The deviation of this variable is extremely high, implying that this parameter varies a lot, however the kurtosis is high and it suggests high concentration around the mean. In addition, the parameter is positively skewed, indicating that most of the values are concentrated towards smaller values compared to the mean. The same implications can be found in regards to photos uploaded: highly volatile values around the mean of 225.94 with high kurtosis and skewness parameters. The variable representing the number of payments made is presumably low, however no strong conclusions can be made about its relative size. The mean value of this variable is 1.79 with high standard deviation of 2.34. All of the aforementioned variables can be related to the accumulated value in terms of money, time and effort that the user has invested in the profile creation and network building in Draugiem.lv. Hence, individuals with higher values of these three variables might bear higher switching costs in case of migration, which in turn might lead to a more reluctant attitude towards switching SNS providers. By adding number of friends, photos uploaded and payments made to the base regression model, it will be clear whether these variables indeed have an effect on users' intention to migrate.

Table 2

Descriptive statistics on discrete variables	*Mean*	*Std. Deviation*	*Skewness*	*Kurtosis*
Number of friends	267.81	293.99686	8.884	124.794
Number of photos uploaded	225.94	389.48534	5.757	55.374
Number of pages following	17.79	25.47190	5.552	48.440
Number of groups registered	15.03	25.90277	7.670	91.538
Number of applications used	8.19	7.06234	1.645	4.491
Number of comments made	17.64	44.28804	10.330	171.986
Number of payments made	1.79	2.34169	3.501	20.831

Source: Made by Authors

The present activity of the user can be measured in terms of pages and groups followed, comments made and number of applications used. An average user of Draugiem.lv follows around 18 pages and 15 groups. The volatility is high for both of these parameters as well as they both are positively skewed with relatively high kurtosis values. Such values of parameters imply that the smaller values that do not differ from the mean to great extent are more present. The mean number of applications used is 8.19. This variable has a high standard deviation; however, contrary to earlier discussed variables it is normally distributed, implying that users tend to be rather versatile in their choice of how many applications to use. Lastly, the number of comments made has a mean value of 17.65; however, around 20.07% of users do not make any comments at all. The aforementioned variables measuring present activity of users imply that the activity parameters are rather dispersed and vary individually. This could imply that users that participate more actively in SNS will be more negative towards migration between SNS. Such statement will be analysed in more depth using regression analysis.

4.2. Factor and index creation

This section serves as an elaboration on how and why we combine answers of the survey, in order to create an index for dependent variables and factors for independent variables. As previously mentioned, the survey consists of 37 questions. The benefit of conducting such a thorough survey is the decreasing possibility of unintentionally disregarding a factor that might have a significant implication on explaining user intention to migrate. Taking into account earlier studies we have developed a survey that accounts for all of the relevant factors covered in SNS migration literature. These factors are satisfaction with current SNS, attractiveness of alternatives and switching costs. The factors can be further disintegrated in satisfaction with technical quality, information quality, communication quality, satisfaction with member policy and information disclosure, peer pressure and easiness to switch. Additionally we have added another factor called national and emotional attachment. This factor is developed in accordance with semi-structured interviews with industry representatives and can be also regarded as factor measuring the lock-in position. In order to measure each of the factors we develop series of questions that investigate specific dimensions of the factor, for instance, the satisfaction with technical quality factor is measured using questions that inquire about the satisfaction level with page load speed, navigation possibilities, easiness to sustain user profile, fulfilment technical needs and overall

satisfaction with technical quality. For the full list of the questions and corresponding factors see Appendix 1.

Even though a large number of explanatory variables has its benefits, it might harm the validity of the analysis. The most important threat of using large number of variables is multicollinearity. It implies that two or more independent variables are highly correlated, due to expressing the same underlying relationship in a slightly different manner. This in turn has an effect on the validity of individual coefficients acquired from regression analysis, as correct causality relationship and statistical significance cannot be detected. As we use several questions to measure a specific aspect of SNS, such condition automatically holds, hence we have to consider methods for controlling for multicollinearity.

We create an index measuring the dependent variable, namely, intention to switch. According to Cheng, Yang and Lim (2009), intention to switch can be disintegrated into determination of switching, planning of switching and probability of switching. Hence, we use results from these three survey questions and add them to scale analysis. Table 3, which reflects the results of analysis, displays two relevant measures: Croncbach's alpha if item deleted and Croncbach's alpha if all items included. As we can see from the Table 3, the Croncbach's alpha is 0.795 implying high reliability of the index. Additionally, we see that Croncbach's alpha is higher if first item is deleted, however we will use specification where all three questions are included based on approaches used in earlier academic literature.

Table 3

Scale analysis	*Mean*	*St. Deviation*	*Cronbach's alpha if item deleted*	*Cronbach's alpha if all items included*
Determined to switch SNS	2.05	1.902	0.800	0.795
Planning to switch SNS	1.66	1.888	0.686	0.795
Probability of switching SNS	1.18	1.828	0.670	0.795

Source: Made by authors

In order to create factors out of 32 independent variables, we use factor analysis. As discussed earlier, for each of the factor two and more questions were developed, hence in the initial factor analysis we insert all of the variables acquired from the survey. The rotated component matrix in Appendix 4 depicts how much variance from each of the variables is included in the factor. Values vary between 0 and 1; values exceeding 0.5 are desired, while values below 0.5 are suppressed and not included in the rotated component matrix. We see that a distinct pattern has been developed and 6 factors are created; however inclusion of several variables in respective factors cannot be theoretically justified. Hence, we drop

variables “Easy to communicate”, “Friends find it difficult to contact me on Draugiem.lv”, “Satisfaction with member policy”, “Information disclosure”, “Would maintain contacts after migration” and “Friends don’t use draugiem.lv”. When these variables are excluded from factor analysis, the results of rotated component matrix are depicted in Table 4. The results justify the creation of five factors, which can be easily interpretable and align with theoretical framework discussed earlier. The first factor represents satisfaction with information quality and communication possibilities, the second factor stands for attractiveness of alternatives, the third factor represents easiness to switch to another SNS and the fourth factor represents satisfaction with technical quality, while the fifth factor represents emotional and national attachment to Draugiem.lv.

Table 4

Rotated Component Matrix	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor5*
Satisfaction with page load speed.				0.744	
Easy to navigate				0.614	
Easy to sustain profile				0.655	
Fulfills technical functions				0.696	
Technical functions aligns with needs				0.697	
Freshest information	0.587				
Information aligns with needs	0.674				
Easy access to information	0.726				
Easy to find relevant people	0.654				
Easy to communicate	0.773				
Communicate on regular basis	0.722				
Fulfills communication needs	0.748				
Better technical quality of alternative SNS		0.806			
Better information quality of alternative SNS		0.824			
Better communication possibilities of alternative SNS		0.829			
Better member policy of alternative SNS		0.800			
Alternative SNS is overall better		0.811			
Would be easy to create a profile			0.734		
Would be easy to inform friends			0.713		
Would be easy to create new network			0.835		
Would be easy to adjust to functions			0.815		
Would be easy to replicate profile			0.794		
Difficult to use SNS not in Latvian					0.681
Feel emotionally attached to Draugiem.lv					0.688
Important that SNS is Latvian oriented					0.728
Important that topical information about venues					0.614

Source: Made by Authors

4.3. Regression analysis

In order to find out what factors are increasing Draugiem.lv user’s intention to migrate to another SNS we conduct a regression analysis. To measure intention to switch we use an appropriate index as well as appropriate factors to limit the number of independent

variables. The factor analysis initially reduced the number of independent variables from 32 to 7. Later on we decreased the number of independent variables to three, namely Push, Pull and Mooring factors. Taking this into account, we have created the following two different regression models (Table 5 provides s summary of both regression models):

(1) $(Intention\ to\ switch) = ß_0 + ß_1*(technical\ quality) + ß_2*(information\ and\ communication) + + ß_3*(member\ policy) + ß_4*(attractiveness\ of\ alternatives) + ß_5*(easiness\ to\ switch) + + ß_6*(peer\ influence) + ß_7*(emotional\ and\ national\ attractiveness) + u_0$

(2) $(Intention\ to\ switch) = ß_0 + ß_1*(Push\ factors) + ß_2*(Pull\ factors) + ß_3*(Mooring\ factors) + u_0$

Firstly, we look at the adjusted R squared. It is a measure of what fraction of dependent variable's variance can be explained by the variance of independent variables. We see that the adjusted R squared is 37.2% and 33.8% for the first and the second regression model, respectively. Such adjusted R squared values imply a relatively good fit of the regression. Additionally we look at Durbin-Watson values of both regression models. This value represents test of autocorrelations, i.e., troublesome relations between residuals. The values vary from 0 to 4 where values around 2 are desired. Durbin-Watson values for both regressions are very close to 2; implying, that threat of autocorrelations is not present.

Table 5

Regression model Summary	*Adjusted R^2*	*Std. Error of Estimate*	*Durbin-Watson Value*
Regression Model 1	0.372	0.790	2.069
Regression Model 2	0.338	0.809	2.037

Source: Made by authors

Table 6 provides coefficients and significance levels of the first regression. Four out of seven factors are statistically significant, three being significant at 1% significance level and one, i.e., satisfaction with information and communication quality is significant at 5% significance level.

Table 6

Regression model 1	*ß*	*Std. Error*	*VIF*
(Constant)	0.042*	0.025	
Satisfaction with technical quality	0.002	0.038	2.258
Satisfaction with information and communication	-0.099**	0.043	2.840
Satisfaction member policy and information disclosure	-0.012	0.035	1.954
Attractiveness of alternatives	0.129***	0.029	1.326
Easiness to switch	0.145***	0.028	1.168
Emotional and national attachment	-0.010	0.028	1.206
Peer pressure	0.463***	0.028	1.250

**-Significant at 10% level*
***-Significant at 5% level*
****-Significant at 1% level*

Source: Made by authors

The results of the second regression model are stated in Table 7. The dependent variable is intention to switch, while independent variables are Push, Pull and Mooring factors. We see that all three independent variables are statistically significant with significance levels of 0.000. The relationship between Push factors and intention to switch is negative. The coefficient of (-0.118) suggests that individuals who are not satisfied with SNS are more willing to migrate to another SNS. Pull factors in our case give a reverse relationship as compared to Push factors. In addition, it has significantly higher coefficient level, i.e., 0.503. This coefficient implies that an attractiveness of an alternative site is the most powerful factor that affects individual's intention to migrate to another SNS. In contrast, Mooring factors do not have such a high coefficient, however the value of 0.112 still implies a strong relationship, which suggests that individuals who perceive the process of switching to be easy and with low switching costs have more intention to migrate.

Table 7

Regression model 1	*ß*	*Std. Error*	*VIF*
(Constant)	0.420	0.026	
Push factors	-0.118***	0.027	1.077
Pull factors	0.503***	0.028	1.166
Mooring factors	0.112***	0.028	1.124

**-significance at 10% level*
***- significance at 5% level*
****- significance at 1% level*

Source: Made by authors

The additional robustness tests that we carry out are Variance Inflator Factor (VIF), which measures whether there is multicollinearity between independent variables. VIF measures how much of the variable's variance is inflated due to multicollinearity. VIF values that are between 1 and 10 are desirable, taking into account that lower values are preferred over higher values. As we can see from regression tables of both regression models VIF varies 1.077 to 2.258 implying very low levels of multicollinearity. The values of 2.25; 2.84 and 1.95 for satisfaction factors imply a very small multicollinearity, due to measuring different aspects of quality of an SNS. In addition, factor creation is a commonly used method to control for multicollinearity. We also look at the probability distributions of residuals (see Appendix 6). The residuals have to be distributed normally, otherwise the confidence levels of regression coefficients tend to be biased. As we can see from Appendix 6 residuals for both regression models follow the normal distribution.

Furthermore, Appendix 7 presents a table with additional regressions together with the two regression analyses already introduced. The 1st regressions observe factors that

influence intention to migrate only for those users, who chose Facebook as their secondary SNS. This analysis observes the user group that uses the services of the most critical competitor of Draugiem.lv. Analysis shows that all of the variables associated with satisfaction as well as emotional and national attachment are insignificant. Push and Mooring factors are significant only at 10% significant level, while the Pull factor appears to be highly significant and having a large effect. Such results are consistent with results from basis model regressions, implying that the Pull factor is most important determinant of intention to switch. The 2nd set of regressions examines a sample of users who spend 50% or more of their time in their secondary SNS. This sample is important as it demonstrates the attributes of a user group that is already on the verge of switching. As opposed to the 1st regressions, here the satisfaction with information and communication is a significant variable at a 5% significance level. In addition, the Push and Mooring factors are also slightly more significant with Push being significant at 10% and Mooring at 5%. The strength of both of these factors has increased as compared to the 1st regressions, however marginally.

A consistent finding across all regressions is the insignificance of Draugiem.lv being a user's first SNS and the significance of gender and age being a factor of intention to switch. According to the regression results the older a user is, the less likely the user intends to switch. Additionally, results show that women are less likely to switch when compared to men. Interestingly, when controlling for gender and age, the effect of Push and Mooring factors decreases, although slightly.

When controlling for discrete variables, the only factors significant at the 5% significance level were *Number of groups* and *Number of payments.* While the economic power of the *Number of groups* factor is quite low, it suggests that *ceteris paribus* participation in more discussion groups lowers the intent to switch. Regarding the *Number of payments* variable, it demonstrates that *ceteris paribus* the more money a user spends on site, the less likely she is to switch.

5. Discussion of empirical findings

Given the information from Table 6, Table 7 and the table from Appendix 7, a global phenomenon can be observed that Push, Pull and Mooring factors are all significant, where the Push factor negatively affects the intention to switch while Pull and Mooring factors positively affect user intention to switch, given the previously discussed underlying variables or each of the factors. Due to these results we fail to reject *H1*, *H2* and *H3*.

The results indicate that the Pull factor has the strongest effect on the intention to switch. The significance of the three factors as well as the high R squared suggests that the given PPM framework is appropriate for examining the existing phenomenon. Furthermore, satisfaction overall has a very low impact with the *Satisfaction of information and communication* being the only significant variable from the three other factors, however its significance also varies across regressions. In addition a very strong effect can be observed from the *Peer pressure* variable. It signals that user intention to migrate is subject to what SNS their friends and acquaintances use. As cited by Inspired (2011), this finding aligns with the research carried out by TNS (2011), who indicated that the main reason people in Latvia use social networks in all age groups is to stay in touch and communicate with other people. If user's peers find it hard to contact her, she might consider moving to another SNS where the communication would not be hindered. This argument is also supported by Jānis Polis (personal communication, March 23, 2012) and Rolands Laķis (personal communication, March 22, 2012).

By taking a closer look at the regression results in Table 6, we see that the satisfaction with information quality and communication possibilities have a negative relationship with the intention to switch. Coefficient of (– 0.099) and significance level of 0.021 implies that the intention to switch decreases when the satisfaction with information quality increases. Such relation can be explained by considering SNS primary function: to communicate and create networks as well as exchange information with friends and acquaintances. In contrast, *Satisfaction with technical quality* is neither statistically nor economically significant, supporting that in a service that facilitates networking, the quality of information and communication possibilities is more important than technical quality and functionality.

Furthermore, lack of relationship between member policy, information disclosure and intention to switch has several implications. Firstly, any SNS can be regarded as a web based platform where the content is user generated, therefore the information inputted by users is information that they are willing to share with their network, implying that users consider the

amount of self-exposure and users do not publically share information that could harm their privacy. That in turn reduces user concern whether their information will be disclosed in an inappropriate manner. Jānis Polis (personal communication, March 23, 2012) further suggested that the concern might also be mitigated by the observation that no harm yet has been done to users because of information disclosure. Secondly, according to Rolands Laķis (personal communication, March 22, 2012), users could also be myopic in their behaviour towards sharing information on SNS, with some of the users not being aware that they give away their own personal information in exchange for a free SNS service.

In contrast, easiness to switch between SNS is statistically significant and has strong implications. The coefficient of 0.145 and confidence level of 0.000 unveils that individuals that perceive the process of changing SNS to be relatively easy and with low costs are more open to migration. This finding can be supplemented with a coefficient from the variable measuring attractiveness of alternative. The coefficient yields 0.129 with a significance level of 0.000 and implies that if user identifies that an alternative SNS offers better quality and possibilities, the intention to switch increases.

Further, we observe the table of regressions in Appendix 7. For Draugiem.lv users that chose Facebook as their secondary SNS in the 8th regression results, satisfaction and attachment are factors play no role in affecting the user intention to switch. Additionally, both Push and Mooring factors are significant only at 10% significance level and have quite low economic force. It is quite clear that Facebook can have quite a significant force in attracting the users, given its popularity. Mooring factors are not very strong, however they still are present, indicating despite using Facebook as their secondary, users still value the Draugiem.lv network and find trouble leaving it, also indicated by the significance of the *Easiness to switch* factors. The low significance of Push factors could possibly indicate that Draugiem.lv users perceive the Draugiem.lv service quality to be similar to the service quality of Facebook. This has also been pointed out by Rolands Lakis (personal communication, March 22, 2012), who noted that Draugiem.lv provides a high quality service and, as opposed to user migration from Friendster to Myspace (Piskorski et al., 2008), the disadvantages of Draugiem.lv should play a very minor role in pushing users away from the SNS.

The 2nd regression represents users who spend half or more than half of their time in a secondary SNS and while the sample size is not large, they represent a population that is already on the verge of migration, thus a very important group for Draugiem.lv. For this sample a very noteworthy difference is the significance of the *Satisfaction with information*

and communication quality factor, implying that if users feel dissatisfied with the availability of information on the SNS or the communication possibilities, the users' intention to migrate would increase. A possible explanation of this sensitivity to information and communication aspects might be that users who intensively use other SNS are exposed to other services that provide different content and means of information exchange, thus they have higher standards towards the aforementioned aspects.

Consistent with all of the regressions is the insignificance of Draugiem.lv being a user's first SNS, indicating that loyalty is not subject to the user's first experience with an SNS. Furthermore, age and gender seem to have a significant impact on the intention to switch. The interpretation of the former is that older age groups are less likely to wish to migrate away from Draugiem.lv when compared to individuals of younger generations.

To answer the research question of our study, the main factors that affect Draugiem.lv user intention to switch to another SNS as those that are related to Pull factors, namely, *Attractiveness of Alternatives* and *Peer Pressure.* While Push and Mooring factors also proved to be significant, both of them showed significantly lower strenght when compared to Pull factors. The implications for Draugiem.lv that can be drawn from the analysis are that the insignificance of Push factors could indicate that the service of Draugiem.lv complies with user expectations and that migration most likely would not be connected to satisfaction with the quality, provided that Draugiem.lv continues to improve their service and keep up with its competitors. Furthermore, the high coefficient of *Peer Pressure* suggests that users highly value their connections with their strong and weak ties. This implies that those who switch the service can easily persuade their lingering peers to switch as well leading to a snowball effect of migration. Jānis Polis (personal communication, March 23, 2012) argued that since Draugiem.lv visitor statistics have not yet indicated a sharp decrease, it is impossible to say that Facebook has already become a stable secondary SNS despite the fact that 45.6% of individuals in our sample have indicated that their secondary SNS is Facebook. Nevertheless, this research indicates that the threat of user migration to Facebook is quite prevalent and if it the migration starts, the *Peer Pressure* variable might be strong enough to significantly reduce the number of users on the SNS. A very obvious cure for this would be increasing the strength of the Mooring factors and while increasing the *Number of groups* a user has seems lack clear rationale, *Easiness to switch* and *Number of payments* are factors that can be influenced by management effort and could prove to be useful in preserving the user base of Draugiem.lv.

6. Conclusion

This research identifies factors that affect Draugiem.lv user intention to switch their current SNS by employing the PPM framework suggested by Cheng et al. (2009). The findings of this research fail to reject all three of the stated hypotheses, namely, that Push factors negatively affect user intention to switch if the underlying variables are related to satisfaction with the service quality; that Pull factors positively affect user intention to switch if the underlying factors are related to attractiveness of alternatives and peer pressure; that Mooring factors positively affect user intention to migrate if the underlying variables are related to easiness to switch. Furthermore, we show that Pull effects are stronger in comparison to Push and Mooring effects, indicating that users are easily influenced by the attractiveness of alternatives and the preferences of their peers.

This study contributes to the existing literature by enhancing the PPM analysis with emotional and national attachment variables and the addition of 7 discrete variables. While the emotional and national attachment proved to be insignificant throughout the whole analysis, *Number of groups* and *Number of Payments* showed significant at 10% level, indicating that level of participation in the service matters.

Given the narrow scope of the sample, the results can hardly be generalized to other SNS, however this research indicates that PPM framework fits to analysing factors that influence switching in the context of SNS. For further analysis, it would be beneficial to expand the research to more nationalities and observe a market with more than two distinct competitors.

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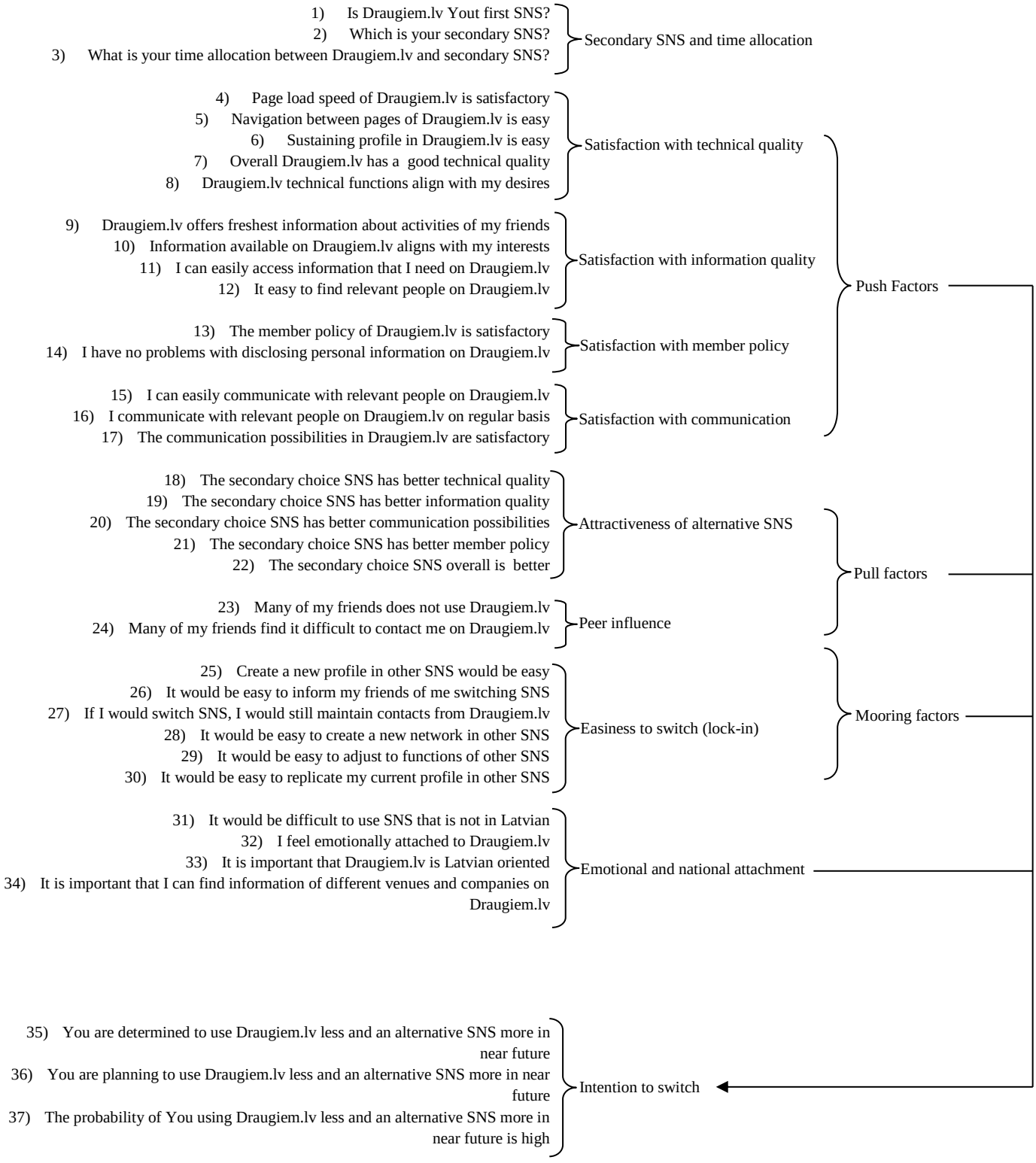
Appendix 1.

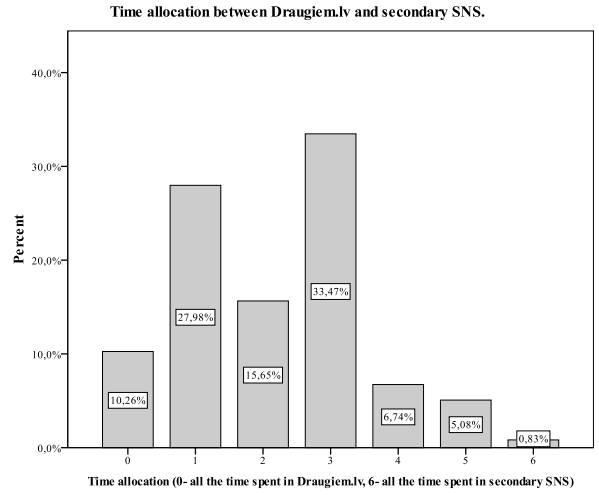
Table 1 of Appendix 1

Illustration of questions, corresponding factors and the PPM model



Source: Made by authors

Appendix 2.



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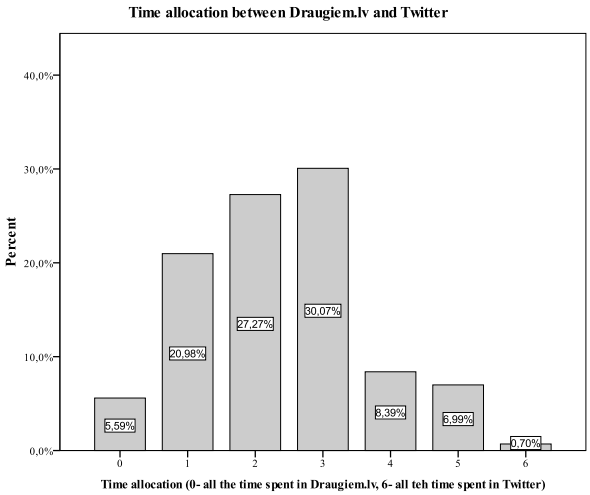
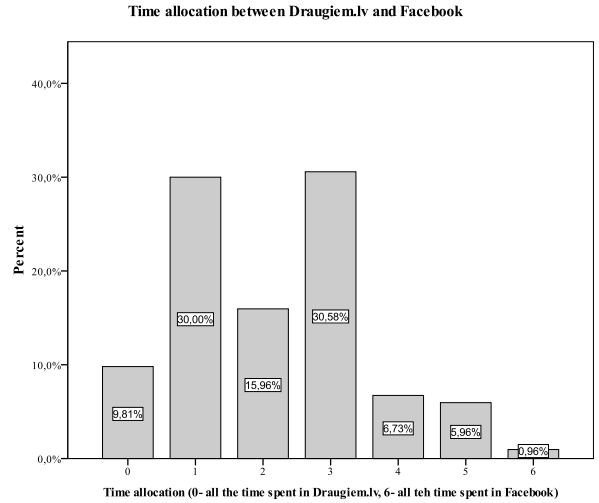
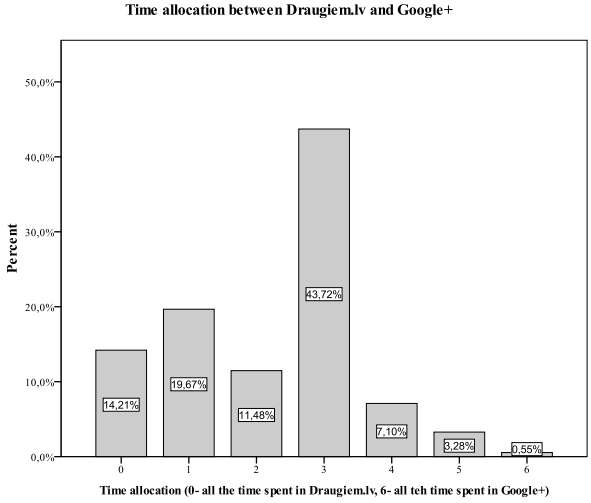






Appendix 3.

Table 1 of Appendix 3

Descriptive statistics on survey answers (Scale 0-6)	*Mean*	*Std. Deviation*	*Skewness*	*Kurtosis*
Satisfaction with technical quality				
Satisfaction with page load speed.	3.88	1.527	-.700	-.033
Easy to navigate	4.08	1.642	-.721	-.298
Easy to sustain profile	4.27	1.578	-.883	.085
Fulfils technical functions	4.34	1.574	-1.078	.566
Technical functions aligns with needs	4.03	1.579	-.710	-.206
Satisfaction with information quality				
Freshest information	4.23	1.694	-.886	-.026
Information aligns with needs	4.05	1.575	-.675	-.151
Easy access to information	4.39	1.539	-1.022	.596
Easy to find relevant people	4.20	1.671	-.844	-.130
Satisfaction with member policy and information disclosure				
Satisfaction with member policy	4.52	1.629	-1.257	.881
No problems with sharing sensitive information	3.02	1.902	-.126	-1.102
Satisfaction with community support and communication possibilities				
Easy to communicate	4.62	1.545	-1.290	1.155
Communicate on regular basis	4.35	1.659	-.915	.030
Fulfils communication needs	4.52	1.504	-1.210	1.070
Attractiveness of secondary SNS				
Better technical quality	3.32	1.827	-.234	-.875
Better information quality	3.13	1.890	-.045	-1.056
Better communication possibilities	2.94	1.886	.031	-1.096
Better member policy	2.91	1.821	.046	-.889
Overall better	2.56	1.834	.201	-.921
Peer influence				
Friends don't use Draugiem.lv	1.98	2.023	.636	-.910
Friends find it difficult to contact me on Draugiem.lv	1.67	1.946	.914	-.442
How easy it would be to switch to another SNS				
Would be easy to create a profile	3.59	1.959	-.370	-.988
Would be easy to inform friends	3.67	1.910	-.409	-.935
Would maintain contacts	4.77	1.677	-1.374	1.029
Would be easy to create new network	3.39	1.872	-.247	-.977
Would be easy to adjust to functions	3.46	1.847	-.334	-.909
Would be easy to replicate profile	3.39	1.936	-.299	-1.027
Nationality factor and emotional attachment				
Difficult to use SNS not in Latvian	2.78	2.263	.122	-1.461
Feel emotionally attached to Draugiem.lv	3.27	2.091	-.205	-1.230
Important that SNS is Latvian oriented	4.41	2.020	-1.082	-.129
Important. that topical information about venues	4.47	1.733	-1.075	.294
Intention to switch				
Determined to switch SNS in near future	2.05	1.902	.581	-.736
Planning t switch SNS in near future	1.66	1.888	.906	-.354
Probability of switching SNS in near future is high	1.18	1.828	1.416	.757

Source: Made by Authors

Appendix 4.

Table 1 of Appendix 4

Rotated Component Matrix	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*	*Factor 6*
Satisfaction with page load speed.				0.760		
Easy to navigate	0.539			0.526		
Easy to sustain profile	0.543			0.571		
Fulfils technical functions	0.537			0.633		
Technical functions aligns with needs	0.596			0.596		
Freshest information	0.694					
Information aligns with needs	0.760					
Easy access to information	0.782					
Easy to find relevant people	0.716					
Satisfaction with member policy	0.728					
No problems with sharing sensitive information						
Easy to communicate	0.770					
Communicate on regular basis	0.675					
Fulfils communication needs	0.754					
Better technical quality		0.817				
Better information quality		0.820				
Better communication possibilities		0.821				
Better member policy		0.792				
Overall better		0.801				
Friends don't use Draugiem.lv						
Friends find it difficult to contact me on Draugiem.lv						0.722
Would be easy to create a profile			0.735			
Would be easy to inform friends			0.714			
Would maintain contacts						
Would be easy to create new network			0.833			
Would be easy to adjust to functions			0.809			
Would be easy to replicate profile			0.792			
Difficult to use SNS not in Latvian						0.607
Feel emotionally attached to Draugiem.lv					0.596	
Important that SNS is Latvian oriented					0.791	
Important that topical information about venues					0.730	

Source: Made by Authors

Appendix 5.

Table 1 of Appendix 5

Correlation coefficients

	(1)	(2)	(3)	(4)
Friends don't use Draugiem.lv (1)	1.000	0379		
Friends wind it difficult to contact me in Draugiem.lv (2)	0.379	1.000		
Satisfaction with member policy (3)			1.000	0.320
No problems with sharing sensitive information (4)			0.320	1.000

Source: Made by authors

Table 2 of Appendix 5

Scale analysis	*Mean*	*St. Deviation*	*Cronbach's alpha if item deleted*	*Cronbach's alpha if all items included*
Satisfaction with technical quality	0.000	1.000	0.809	0.862
Satisfaction with information quality and communication	0.000	1.000	0.758	0.862
Satisfaction with member policy and information disclosure	0.000	1.000	0.848	0.862

Source: Made by authors

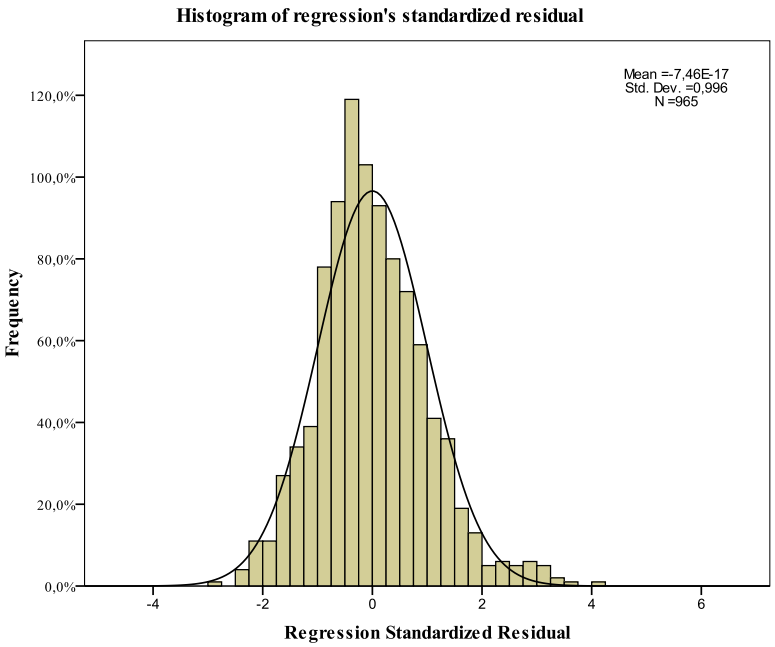
Table 3 of Appendix 5

Correlation coefficients

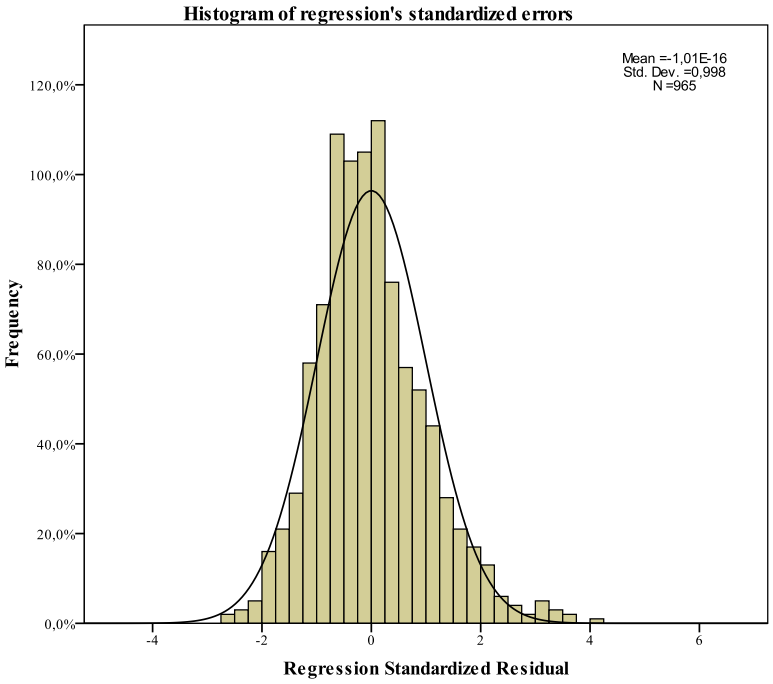
	(1)	(2)
Attractiveness of alternatives (1)	1.000	0399
Peer pressure (2)	0.399	1.000

Source: Made by authors

Appendix 6.



Source: Made by Authors



Source: Made by Authors

Appendix 7.

Summary of regression models

Regression model	1st β	2nd β	3rd β	4th β	5th β	6th β	7th β	8th β	8th β	9th β	9th β
Const.	0.002	0.420	0.046	0.613***	0.554***	0.145***	0.146***	0.037	0.039	0.084**	0.057
Satisfaction with technical quality	-0.099**			-0.015			-0.005	0.033		0.036	
Satisfaction with information and communication	-0.012			-0.063			-0.100**	-0.073		-0.134**	
Satisfaction with member policy and information disclosure	0.129***			-0.028			-0.005	-0.015		0.001	
Attractiveness of alternative	0.145***			0.121***			0.129***	0.199***		0.197***	
Easiness to switch	-0.010			0.126***			0.142***	0.101***		0.125***	
Emotional and national attachment	0.463***			0.009			-0.017	-0.012		0.062	
Peer pressure				0.486***			0.463***	0.482***		0.422***	
Push factor		-0.118***	-0.119***		-0.109***	-0.121***			-0.064*		-0.072*
Pull factor		0.503***	0.503***		0.509***	0.504***			0.574***		0.538***
Mooring factor		0.112***	0.112***		0.097***	0.108***			0.068*		0.089**
Draugiem is first network			-0.011	-0.027	-0.033						
Age				-0.009***	-0.006***						
Gender				-0.174***	-0.197***						
Number of friends						-0.021	0.000				
Number of Photos						0.000	0.000				
Pages following						-0.001	-0.002				
Number of groups						-0.003**	-0.003**				
Applications						0.003	0.003				
Number of comments						0.001	0.001				
Number of payments	0.372					-0.023**	-0.021*				
Adjusted R^2	0.372	0.338	0.335	0.386	0.350	0.351	0.376	0.384	0.365	0.334	0.316

8th regression model sample: individuals who have chosen facebook as secondary choice SNS
9th regression model sample: individuals who spent more than 50% of their time in the secondary SNS
1^{st}, 2^{nd}, 3^{rd}, 4^{th}, 5^{th}, 6^{th}, 8^{th} model sample: whole population

*- significance level at 10% level

**-significance level at 5% level

***-significance level at 1% level

Appendix 8.

Table 1 of Appendix 8

List of Interviewed Experts

Name	Position	Interview date	Stage
Artūrs Mednis	Head of Inspired Digital at **Inspired Communications** (media agency in Latvia)	14/10/2011	
Guntars Meluškāns	Creative Director at **Draugiem.lv** (SNS in Latvia)	16/11/2011 08/12/2011	
Arjan Tupan	Owner of **WhoWalksTheDog.com** (social media blog)	17/11/2011	1st
Kaspars Driķis	CEO at **Gemius Latvia** (Internet research agency in Latvia)	12/12/2011	
Ernests Štāls	Co-founder at **TechHub Riga** (technology start-up network in Latvia)	12/12/2011	
Marko Saue	Creative Director at **GOAL** (social media marketing agency in Estonia)	21/12/2011	
Laura Lasmane	Digital Account Executive at **Hill and Knowlton Latvia** (PR agency in Latvia)	14/12/2011	
Mārtiņš Dziedātājs	Analyst at **Inspired Communications** (media agency in Latvia)	22/03/2012	
Lauris Lietavietis	Audience product manager at **Gemius Latvia** (Internet research agency in Latvia)	23/03/2012	2nd
Rolands Laķis	Lecturer at **RISEBA** (University in Latvia)	22/03/2012	
Jānis Polis	Head of Talking at **Djigital** (digital media agency in Latvia)	23/03/2012	

Source: Made by authors

Appendix 9.

Interview guide

First stage interview questions:

1) Why is Facebook not dominating in Latvia as the largest SNS?

2) Why is Facebook dominating in the rest of the Europe?

3) What do you think are the main reasons why Draugiem.lv is the most popular SNS in Latvia?

4) What factors determine whether users will remain in an SNS or abandon it?

5) Are there any migration factors that are unique to Latvians?

Second stage interview questions:

1) Why do you think Pull factors are the strongest in the PPM framework?

2) Why are most of the satisfaction variables insignificant?

3) Why the emotional and national attachment variables insignificant?

4) What implications do the regression results provide for Draugiem.lv?

5) Given these results, how does the future of the SNS market in Latvia looks?