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Examining the Effects of Trust-Promoting IT-Features on User Participation: A Content Analysis of Online Communities

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ABSTRACT

Even though online communities enjoy a growing number of members, their success and popularity are regularly diminished by infringements of user trust. Consequently, community operators implement IT-based trust-promoting features to regain user trust. Not knowing if their efforts are effective, for community operators the question remains: how do trust-promoting IT-features contribute to user participation? In this paper, we present a content-analysis-based study that investigates the effect of trust-promoting IT-features. IT-features fall into four categories: usability, transparency, quality-assured content (QAC) and security/ privacy. The results show that usability, QAC, and security/ privacy strongly affect user participation. However, their implementation in online communities leaves a great deal of room for improvement. This work contributes to an understanding of trust-promoting IT-features and sheds some light on their efficiency. The findings have important implications for community operators, as we recommend that they invest in implementing usability, QAC, and security/ privacy IT-features to regain their users' trust and increase user participation.

Keywords

Trust-promoting IT-features, usability, transparency, quality-assured content, security and privacy, online communities, user participation.

INTRODUCTION

Online communities are a growing phenomenon and a useful tool for social networking, information sharing, and transaction facilitation. But recently, opaque privacy declarations, stolen identities, and sexual offenses have unsettled community users and sparked severe critiques of data protection specialists. For instance, more than 50,000 users of the online community Facebook signed an online petition when Facebook's use of private data for taking out personal ads and several security holes became public. As a consequence of privacy concerns, Facebook suffered a decline in its user population at the beginning of 2008 (Jones, 2008). Also, the German community StudiVZ faced a severe user revolt when its use of private data for content affecting advertising became public (Wieschowski, 2007). The trust violations of communities are no longer just a private concern, but also a political and legal affair. Several governmental institutions give out user warnings or are even blocking access to online communities (European Commission, 2008). Community operators have reacted quickly to increase the diminishing trust of their users. They have implemented IT-based trust-promoting IT-features to (re)gain trust. Facebook for example tried to increase trust by enhancing configuration features that allow members to decide what kind of personal data they reveal to other members. Also, they required users to affirm that they have read Facebook's safety tips before signing up. MySpace tried to increase their perceived integrity by launching a 24-hour hotline for users to report unacceptable behavior.

The question remains whether these efforts are effective. Particularly, we address the following research questions: (1) How do trust-promoting IT-features affect user participation in online communities? (2) Which trust-promoting IT-features are the most effective for user participation?

This paper presents the findings of an empirical study on the effect of trust-promoting IT-features on community participation. The next section reviews related work and provides theoretical background. Then, we present the methods behind our study, before illustrating our major results. Subsequently, we discuss our research findings. The last section concludes by pointing out limitations and future work.

LITERATURE REVIEW AND THEORETICAL BACKGROUND

Online communities are "*groups of people with common interests and needs who come together online. Most are drawn by the opportunity to share a sense of community with like-minded strangers, regardless of where they live*" (Hagel III and Armstrong, 1997). Trust, which can be defined as "*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the truster*" (Mayer, Davis and Schoorman, 1995), is a vital factor in e-commerce and online communities, where individuals exchange products and information about themselves (Ridings, Gefen and Arinze, 2002). In this paper, the term *IT-features* encompasses all kinds of functionalities of an online application. Previous studies on trust in communities analyze how IT-features promote trust. (Leimeister, Ebner and Krcmar, 2005; Shneiderman, 2000). However, the question of the effectiveness of trust-promoting IT-features is still open. Our conceptual model examines the influence of trust-promoting IT-features on user participation to determine whether IT-enabled trust promotion is not merely a goodwill activity, but also an effective one. Figure 1 depicts our research model and corresponding hypotheses.

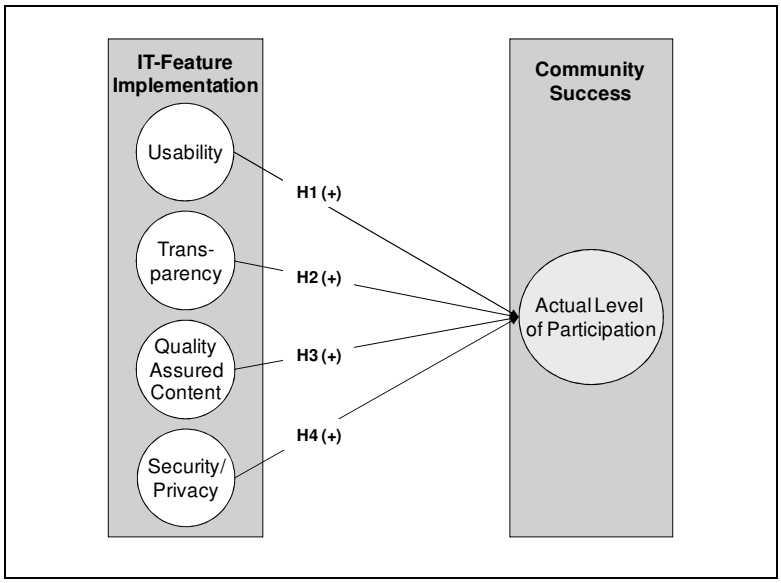

Figure 1. Research Model of the Influence of Trust-Promoting IT-Features

In the existing literature on e-commerce and community engineering, four basic categories of IT-features are recurrently mentioned to be the most important factors in affecting trust: usability, transparency, QAC, and security/ privacy (Belanger, Hiller and Smith, 2002; Leimeister et al., 2005; Preece, 2006).

As several research studies have stated, poor Web site design and usability are highly correlated with Web site failure (Everard and Galletta, 2005; Shankar, Urban and Sultan, 2002). Usability is defined as "*the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use*" (Karat, 1997). Several research studies examined trust-promoting usability features in e-commerce (Lowry, Vance, Moody, Beckman and Read, 2008; McKnight, Choudhury and Kacmar, 2002). Information design, navigation, and access requirements are particularly crucial in communities, as they support a community's role as a forum for social interaction (Preece, 2001). Providing clear directions and integrating Web navigation elements are thus especially conducive to active participation in communities. Based on the empirical evidence, we propose the following hypothesis:

H1: The level of implementation of usability-based IT-features increases significantly user participation.

Due to the anonymous nature of the Internet, information about a Web site's operator are relevant for the trust-promoting process (Leimeister et al., 2005). According to principal-agent theory, imperfect information causes ex-ante uncertainty perceptions (Pavlou, Liang and Xue, 2007). Several studies have asked what kind of IT-features reduce uncertainty. These studies found that the proper display of information strengthens buyer-seller relationships in e-commerce (Leimeister et al., 2005; Pavlou et al., 2007). The uncertainty of members also commonly discourages people from participating in online communities (Ridings et al., 2002). To increase community members' trust, researchers propose making information about community operators, fees, and terms of use easily accessible (Grazioli and Jarvenpaa, 2000). Furthermore, researchers have said that completeness of information and transparency of data sources make information more credible (Leimeister et al., 2005). Therefore, we derive the following hypothesis:

H2: The level of implementation of transparency-based IT-features increases significantly user participation.

Often equated with information credibility, QAC captures several indicators of a Web site's quality and the information contained therein. To support users' trust, operators have to signal that they care about quality and that the displayed content is accurate, up-to-date, and unbiased. Conveying a professional impression transmitted by the content of a community affects how much users trust a site. In contrast, teasers and misleading bargain offers induce mistrust and decrease participation (Wang and Emurian, 2005). To guarantee correctness and relevance, user-generated content should be proofread by community staff or recognized experts (Ridings et al., 2002). Empirical studies have confirmed that rating mechanisms encourage trust and participation. Positive feedback by other members increases users' trustworthiness and credibility (Ba and Pavlou, 2002). Building upon these studies, we derive the following hypothesis:

H3: The level of implementation of QAC-based IT-features increases significantly user participation.

Participating in communities usually entails disclosing personal data that third parties can potentially misuse. Past abuses of privacy discourage people from revealing personal data. For this reason, several research studies have addressed this problem, its consequences, and possible solutions. Kim et al. (2008) found that privacy and security concerns strongly affect users' trust in a Web site, which in turn strongly affects their behavior (Kim, Ferrin and Rao, 2008). Related studies have identified various IT-features that affect security and privacy in e-environments. Those features include security mechanisms such as encryption and authorization mechanisms, as well as privacy mechanisms that comprise data privacy statements. Researchers recommend that operators of Web sites should consider the implementation of privacy seals of trusted third-parties to assure potential consumers of the Web site's integrity (Suh and Han, 2003). Based on empirical evidence, we formulate the following hypothesis:

H4: The level of implementation of security- and privacy-based IT-features increases significantly user participation.

RESEARCH METHODOLOGY

To verify our hypotheses, we conducted a content analysis of 160 German and U.S. American online communities in June 2008, which we selected randomly from a ranking list provided by Nielsen Online (NetView). Content analysis is a popular method in social science and has also been used in IS research (Lacity and Janson, 1994; Pavlou and Dimoka, 2006). Table 1 in the Appendix shows the four trust-promoting categories of IT-features, their definitions, and sources of used coding variables. To ensure construct validity, we used items from existing literature on community engineering and e-commerce. In order to capture a reproducible and objective variance in the pronounced level of IT-feature implementation, we coded the categories consistently on scales ranging from 0 to 2 (i.e., no implementation, a low level of implementation, or a high level of implementation). Along with the communities, Nielsen Online (NetView) provided corresponding indicators of user participation (see Table 1), which could be used to measure community success according to several research studies (Bagozzi and Dholakia, 2002; Bughin and Hagel, 2000).

Performance Indicators	Definition
Universe Reach	Number of unique individuals visiting a Web site one or more times, expressed as a percentage of the total current Internet population for the specified reporting period.
Active Reach	Number of unique individuals visiting a Web site one or more times, expressed as a percentage of the total active Internet population for the specified reporting period.
Page Views	Total number of Web pages requested by unique visitors to a Web site over the specified reporting period.
Pages Per Person	Average number of Web pages requested by unique visitors to a Web site or group of Web sites over the specified reporting period.
Time Per Person	Average time spent by unique individuals on valid page views, AOL Proprietary channels and Internet applications for the specified reporting period.

Table 1. Measures of Community Performance Provided by Nielsen Online, NetView (June 2008)

Two IS researchers who are familiar with content analysis coded the Web sites independently. After a meeting with the authors, where they discussed examples of communities, the coders did a pretest by coding 80 communities ensuring that (1) the coding scheme was consistent, and (2) both coders shared a common and valid understanding. Based on this pretest, we revised the coding scheme.

To assess the reliability of the coding scheme and to ensure the validity of the analysis, we computed Krippendorff's alpha and Cohen's kappa for the four categories of IT-features to measure the inter-coder agreement (Cohen, 1960; Hayes and Krippendorff, 2007). Krippendorff's alpha and Cohen's kappa exceeded the recommended minimum values of 0.70 and 0.60 for all four categories (usability: α=0.71, κ=0.65; transparency: α=0.76, κ=0.64; QAC: α=0.75, κ=0.68; security/privacy: α=0.71, κ=0.61), indicating a high level of agreement between the coders. The close agreement demonstrates that the attributions in the coding scheme are not only theoretically independent of one another, but also have high discriminant validity.

RESULTS

To test the hypotheses, we did structural analyses to examine community operators' efforts to implement IT-features and their contribution to community performance. For the structural analyses, we used PLS-based structural equation modeling (Chin, 1998; Lohmöller, 1989), as implemented in SmartPLS. PLS is especially suitable for testing complex models including formative measurement models by avoiding inadmissible solutions and factor indeterminacy. We evaluated the PLS-based model by looking at the percentage of the variance explained (R^2) of all dependent variables. By examining the size and stability of the coefficients associated to the paths between the variables, we finally analyzed our research hypotheses for their significance.

Assessing the Measurement Models

We validated reflective and formative measurement models with the standard procedures from the current literature. Table 2 shows the results of convergent and discriminant validity tests for reflective indicators. All standardized factor loadings are significant for all reflective measurement models (that is, the actual level of participation), thus suggesting convergent validity. Values for composite reliability, Cronbach's alpha, and the average variance extracted also met the recommended threshold values.

Constructs	Number of indicators	Factor Loadings*	Composite Reliability (ρ_c)	Average variance extracted (AVE)	Cronbach's Alpha
Actual Participation**	5	0.637 – 0.888	0.876	0.590	0.826
* All factor loadings are significant at least at the p<0.05 level ** Indicators are Universe Reach, Active Reach, Page Views, Pages Per Person, Time Per Person					

Table 2. Evaluating the Reflective Measurement Model

Furthermore, the square roots of AVEs exceeded the inter-construct correlations between the independent constructs, indicating sufficient discriminant validity (see Table 3).

Latent Constructs	1	2	3	4	5
1. Actual Participation	**0.769**				
2. Usability	0.417	--			
3. Transparency	0.403	0.370	--		
4. Quality Assured Content	0.401	0.298	0.430	--	
5. Security/ Privacy	0.431	0.529	0.512	0.311	--

Note: The diagonal elements (in bold) represent the square roots of AVE by latent constructs from their indicators. For convergent and discriminant validity, diagonal elements should be at least 0.707 (i.e., AVE>0.50) and larger than off-diagonal elements in the same row and column.

Table 3. Correlation Matrix and Average Variance Extracted of Principal Constructs

We validated the formative measures using principal component analysis, as suggested in previous literature (Petter, Straub and Rai, 2007). In principal component analysis for formative constructs, we must examine the weights, which can be interpreted as beta coefficients in standard regression models, denoting the strength to which each indicator forms a given construct (Sambamurthy and Chin, 1994). As shown in Table 1 in the Appendix, some weights that entered into the formative measurement models were not significant. Since dropping those items would mean skipping a significant part of the nomological domain of the constructs and thus harming content validity (Bollen and Lennox, 1991), we retained all of the insignificant indicators. As the relationships between formative indicators and the latent construct to be measured should also be interpreted as hypotheses that need to be evaluated in addition to the structural paths (Petter et al., 2007), we were also interested in discovering which indicators of one construct exerted comparatively more influence on community success than others.

Evaluating the Structural Model

To assess the results of the research model, we first descriptively evaluated how communities applied IT-features that more or less contribute to trust-promoting. We calculated unweighted average indices for the four categories of IT-features based on the categories coded during the content analysis. After building the indices, we conducted paired-samples t-tests to analyze the differences between pairs of IT-feature categories. All four categories were significantly distinct from each other across all communities inspected (t_{UsaTra}=-3.14; p<0.001; t_{UsaQAC}=6.82; p<0.001; $t_{UsaSecPriv}$=15.67; p<0.001; t_{TraQAC}=4.63; p<0.001; $t_{TraSecPriv}$=10.36; p<0.001; $t_{QACSecPriv}$=2.79; p<0.05). Figure 2 summarizes the results on how strongly IT-features were implemented. Overall, we found that the average index values (medians) for all four categories ranged between low and average levels of implementation, leaving much room for improvement as suggested by community engineering literature. Usability and transparency features were on average more pronounced in comparison to QAC and security/privacy features.

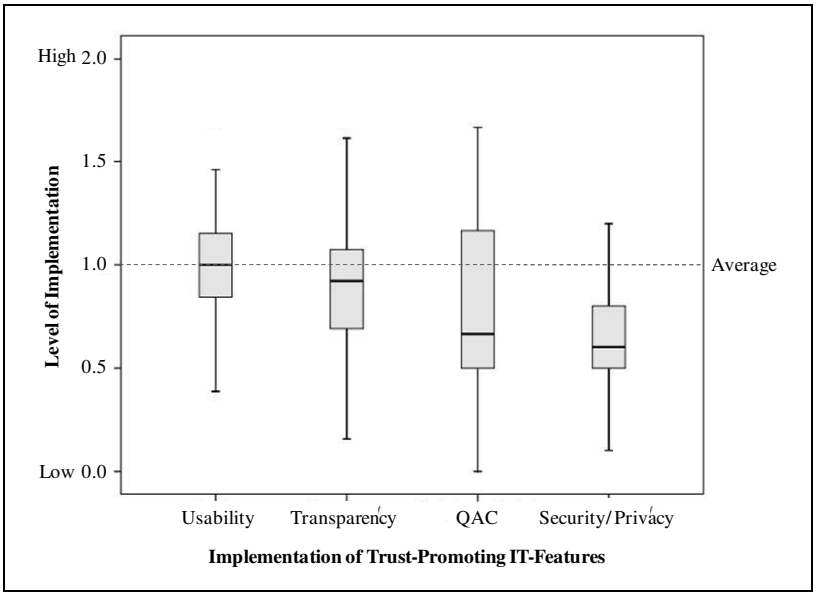

Figure 2. Relative Implementation of Trust-Promoting IT-Features

Analyzing the relationships between IT-features and community success, we found that 31% of the variance in actual participation could be explained by the four categories (see Figure 3). Usability, QAC, and security/privacy features are significant drivers of user participation. Transparency features have no significant impact.

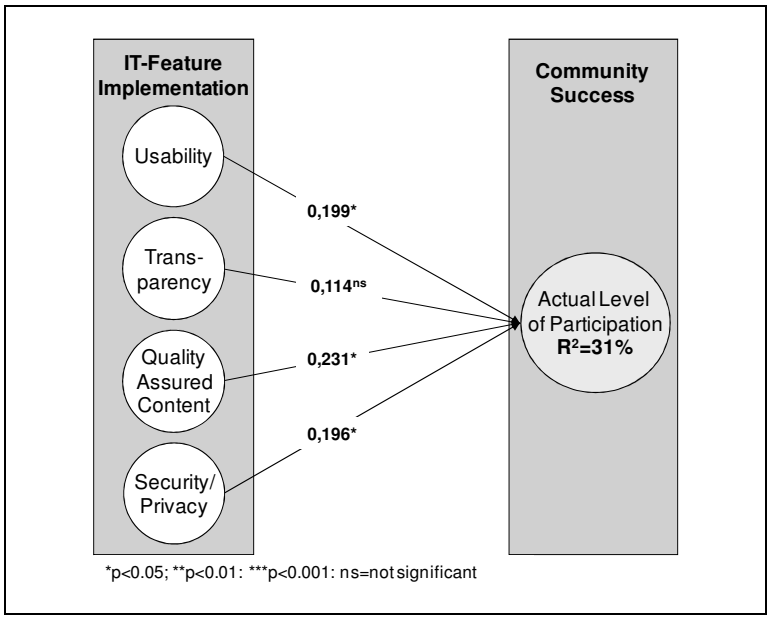

Figure 3. Structural Model Results

DISCUSSION

Our principal concern in this paper was to provide answers to the question of how trust-promoting IT-features contribute to community success. This discussion thus aims to examine theoretical and practical implications.

Previous studies have shown that certain IT-features promote trust in online communities (Leimeister et al., 2005; Ridings et al., 2002). The results of our study demonstrate that trust-promoting IT-features affect community success significantly. The results also indicate the impact of particular IT-features on user participation in detail. We show that security and privacy mechanisms are the most important trust-promoting IT-features affecting user participation. One reason for that could be the increased awareness of community users caused by frequent reporting of privacy intrusions. Because of mischievous operators' violations of data privacy and security rights, users have become more sensitive to mechanisms protecting their rights. The results show that configuration features allowing members to decide what kind of personal data is revealed to other members play a significant role in communities, consistently with previous findings (Ebner, Leimeister and Krcmar, 2004). The results also indicate that QAC–especially mechanisms for reporting unacceptable behavior–strongly affect community success. This can be explained by reports about the increasing numbers of fake accounts, which malicious users use to harass community members (Sutter and Carroll, 2009). Protective mechanisms are therefore essential to regaining member trust and making communities successful. The impact of QAC features can also be explained by the focus of online communities. Because they are not only places for social interaction, but could also be places where members meet to exchange information on products in order to make buying decisions, incorrect information may harm users financially. Therefore, IT-features supporting information quality assurance are important. In addition to security/ privacy and QAC, usability features strongly affect community success. The implementation of usability features are essential in communities, where it must be easy for users–especially inexperienced ones–to learn and remember how to use the systems and where to find information (Preece and Maloney-Krichmar, 2003). As our results show, the implementation of detailed help functions plays a significant role in online communities.

These findings have important implications for practitioners. We show that IT-features are real contributors to community success based on actual participation data. Apparently, operators have recognized the importance of trust-promoting IT-features. However, the degree of implementation leaves a lot to be desired, as the results show. Particularly, neglecting security/ privacy features seems to be a major pitfall, since the presence of those features significantly encourages user participation. Based on our findings, we recommend that community operators invest in implementing trust-promoting IT-features: in particular, usability, QAC, and security/ privacy, to increase community success. However, this has to be done selectively, because not all features encourage user participation to the same extent. However, the results of our study indicate that Facebook's implementation of anonymity configuration features as well as MySpace's installation of a 24-hour hotline for reporting unacceptable behavior are effective IT-features that increase user participation.

LIMITATIONS AND FUTURE RESEARCH

This study has a number of limitations that create some interesting opportunities for future research. First, different community contexts, such as a relational or transactional-oriented focus, might play an important role in explaining the trust-promoting effects of different IT-features. Therefore, the findings must be tested depending on the type of community context. Second, since we concentrated on trust-promoting IT-features in general, future research could focus on the effects of trust-promoting IT-features on different dimensions of trust: trust towards the community itself, or towards other members. Furthermore, we chose not to explore cultural differences between German and American communities, although our sample contained German and U.S. American community Web sites. Even though community operators quickly copy the recipes for success across countries and cultures, exploring cultural differences in providing and accepting IT-features for trust promotion may yield further interesting findings (Vance, Elie-Dit-Cosaque and Straub, 2008). Although user participation can be measured through performance indicators as we did in our study, it could also be quantified through the number of comments written by a user. Future research could use this indicator to measure the success of trust-promoting IT-features and differentiate between active and passive community users.

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REFERENCES

Ba, S. (2001) Establishing online trust through a community responsibility system, *Decision Support Systems,* 31, 3, 323-336.

Ba, S. and Pavlou, P.A. (2002) Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior, *MIS Quarterly,* 26, 3, 243-268.

Bagozzi, R.P. and Dholakia, U.M. (2002) Intentional social action in virtual communities, *Journal of Interactive Marketing,* 16, 2, 2-21.

Belanger, F., Hiller, J.S. and Smith, W.J. (2002) Trustworthiness in electronic commerce: The role of privacy, security, and site attributes, *Journal of Strategic Information Systems,* 11, 3-4, 245-270.

Bollen, K. and Lennox, R. (1991) Conventional wisdom on measurement: A structural equation perspective, *Psychological Bulletin,* 110, 2, 305-314.

Bughin, J. and Hagel, J. (2000) The operational performance of virtual communities – towards a successful business model?, *Electronic Markets,* 10, 4, 237-243.

Chin, W.W. (1998) The partial least squares approach for structural equation modelling, in G.A. Marcoulides (Ed.) *Modern methods for business research*, Lawrence Erlbaum Associates, Hillsdale.

Cohen, J. (1960) A coefficient of agreement for nominal scales, *Educational and Psychological Measurement,* 20, 1, 37-46.

Ebner, W., Leimeister, J.M. and Krcmar, H. (2004) Trust in virtual healthcare communities: Design and implementation of trust-enabling functionalities, in *Proceedings of the 37th Hawaii International Conference on System Sciences*, January 5-8, Hawaii, USA, Computer Society Press.

Egger, F.N. (2001) Affective design of e-commerce user interface: How to maximize perceived trustworthiness, in *Proceedings of the International Conference on Affective Human Factors Design*, June 27-29, Singapore, 317-324.

European Commission (2008) Arbeitspapier 1/2008 zum Schutz der personenbezogenen Daten von Kindern (Allgemeine Leitlinien und Anwendungsfall Schulen), in Arbeitspapiere der Europäische Kommission, Generaldirektion für Justiz, Freiheit und Sicherheit, Artikel-29-Datenschutzgruppe, 1/2008.

Everard, A. and Galletta, D.F. (2005) How presentation flaws affect perceived site quality, trust, and intention to purchase from an online store, *Journal of Management Information Systems,* 22, 3, 55-95.

Grazioli, S. and Jarvenpaa, S.L. (2000) Perils of internet fraud: An empirical investigation of deception and trust with experienced internet consumers, *IEEE Transactions on Systems, Man, and Cybernetics,* 30, 4, 395-410.

Hagel , J. and Armstrong, A.G. (1997) Net gain: Expanding markets through virtual communities, *McKinsey Quarterly,* 1997, 1, 140-153.

Hayes, A.F. and Krippendorff, K. (2007) Answering the call for a standard reliability measure for coding data, *Communication Methods and Measures,* 1, 1, 77-89.

Jones, G. (2008) Facebook enables ad system opt-out, *Marketing,* 26/03/2008, 4.

Karat, J. (1997) Evolving the scope of user-centered design, *Communications of the ACM,* 40, 7, 33-38.

Kim, A.J. (2000) Community building on the web: Secret strategies for successful online communities, Peachpit, Berkeley.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008) A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents, *Decision Support Systems,* 44, 2, 544-564.

Lacity, M.C. and Janson, M.A. (1994) Understanding qualitative data: A framework of text analysis methods, *Journal of Management Information Systems,* 11, 2, 137-155.

Leimeister, J.M., Ebner, W. and Krcmar, H. (2005) Design, implementation, and evaluation of trust-supporting components in virtual communities for patients, *Journal of Management Information Systems,* 21, 4, 101-135.

Leimeister, J.M., Sidiras, P. and Krcmar, H. (2006) Exploring success factors of virtual communities: The perspectives of members and operators, *Journal of Organizational Computing & Electronic Commerce,* 16, 3-4, 279-300.

Lim, K.H., Sia, C.L., Lee, M.K.O. and Benbasat, I. (2006) Do I trust you online, and if so, will I buy? An empirical study of two trust-building strategies, *Journal of Management Information Systems,* 23, 2, 233-266.

Lohmöller, J.-B. (1989) Latent variable path modeling with partial least squares, Physica-Verlag, Heidelberg.

Lowry, P.B., Vance, A., Moody, G., Beckman, B. and Read, A. (2008) Explaining and predicting the impact of branding alliances and web site quality on initial consumer trust of e-commerce web sites, *Journal of Management Information Systems,* 24, 4, 199-224.

Mayer, R.C., Davis, J.H. and Schoorman, F.C. (1995) An integrative model of organizational trust, *Academy of Management Review,* 20, 3, 709-734.

McKnight, D.H., Choudhury, V. and Kacmar, C. (2002) Developing and validating trust measures for e-commerce: An integrative typology, *Information Systems Research,* 13, 3, 334-359.

Nielsen, J. (1998) Introduction to web design, in *Proceedings of the Conference on Human Factors in Computing Systems (CHI 98)*, April 18-23, Los Angeles, CA, USA, ACM.

Pavlou, P.A. (2002) Institution-based trust in interorganizational exchange relationships: The role of online b2b marketplaces on trust formation, *The Journal of Strategic Information Systems,* 11, 3-4, 215-243.

Pavlou, P.A. and Dimoka, A. (2006) The nature and role of feedback text comments in online marketplaces: Implications for trust building, price premiums, and seller differentiation, *Information Systems Research,* 17, 4, 392-414.

Pavlou, P.A., Liang, H. and Xue, Y. (2007) Understanding and mitigating uncertainty in online exchange relationships: A principal agent perspective, *MIS Quarterly,* 31, 1, 105-136.

Petter, S., Straub, D. and Rai, A. (2007) Specifying formative constructs in information systems research, *MIS Quarterly,* 31, 4, 623-656.

Preece, J. (2001) Sociability and usability in online communities: Determining and measuring success, *Behaviour & Information Technology,* 20, 5, 347-356.

Preece, J. (2006) Online communities: Designing usability, supporting sociability, Wiley, Chichester.

Preece, J. and Maloney-Krichmar, D. (2003) Online communities: Focusing on sociability and usability, in J. Jacko and A. Sears (Eds.) *Handbook of human-computer interaction*, Lawrence Erlbaum Associates Inc. Publishers, Mahwah.

Ratnasingham, P. and Kumar, K. (2000) Trading partner trust in electronic commerce participation, in *Proceedings of the 21st International Conference on Information Systems*, December 10-13, Brisbane, Queensland, Australia, Association for Information Systems.

Ridings, C.M., Gefen, D. and Arinze, B. (2002) Some antecedents and effects of trust in virtual communities, *Journal of Strategic Information Systems,* 11, 3-4, 271-295.

Sambamurthy, V. and Chin, W.W. (1994) The effects of group attitudes toward alternative gdss designs on the decision-making performance of computer-supported groups, *Decision Sciences,* 25, 2, 215-242.

Shankar, V., Urban, G.L. and Sultan, F. (2002) Online trust: A stakeholder perspective, concepts, implications, and future directions, *Journal of Strategic Information Systems,* 11, 3-4, 325-344.

Shneiderman, B. (2000) Designing trust into online experiences, *Communications of the ACM,* 43, 12, 57-59.

Suh, B. and Han, I. (2003) The impact of customer trust and perception of security control on the acceptance of electronic commerce, *International Journal of Electronic Commerce,* 7, 3, 135-161.

Sutter, J. and Carroll, J. (2009) Fears of impostors increase on facebook, in CNN.com, http://www.cnn.com/2009/TECH/02/05/facebook.impostors/index.html, Access: 10.02.2009.

Vance, A., Elie-Dit-Cosaque, C. and Straub, D.W. (2008) Examining trust in information technology artifacts: The effects of system quality and culture, *Journal of Management Information Systems,* 24, 4, 73-100.

Wang, Y.D. and Emurian, H.H. (2005) An overview of online trust: Concepts, elements, and implications, *Computers in Human Behavior,* 21, 1, 105–125.

Wieschowski, S. (2007) Studenten demonstrieren gegen das SchnüffelVZ, in SpiegelOnline.de, http://www.spiegel.de/netzwelt/web/0,1518,523906,00.html, Access: 05.01.2009.

APPENDIX

Categories (type of measurement model)		Definition (Scales from 0=no or low level of implementation to 2 =high level of implementation)	Source	Weight	t-Value
Usability (formative)	Corporate Identity	Consistency of structure and design of the website	(Everard and Galletta, 2005)	0.090	0.373^{ns}
	Branding	Consistent display of brands	(Lowry et al., 2008)	0.368	1.588^{ns}
	Easy Access	Providing easy access to the community	(Preece and Maloney-Krichmar, 2003)	-0.199	0.853^{ns}
	Event Calendar	Supporting face-to-face meetings through event calendars	(Leimeister, Sidiras and Krcmar, 2006)	0.460	1.948*
	Personal List of Friends	Implementation of personal friends lists to foster social networks	(Ebner et al., 2004)	-0.397	1.532^{ns}
	Guided Tour	Feature that introduces the user to the community's functionalities	(Wang and Emurian, 2005)	0.128	0.491^{ns}
	Help Function	Providing support functions to perform actions without errors	(Preece and Maloney-Krichmar, 2003)	-0.008	0.030^{ns}
	Accessibility of Information	Degree of accessibility of information measured by number of broken links	(Everard and Galletta, 2005)	0.485	1.985**
	Navigational Cues	Implementation of easy-to-use navigation systems	(McKnight et al., 2002)	-0.238	1.543^{ns}
	Professional Design	Quality of the look-and-feel of the Web site	(Nielsen, 1998)	-0.204	0.936^{ns}
	Registration Process	Providing clear feedback about the registration process	(Egger, 2001)	0.277	1.146^{ns}
	Language	Providing content in different languages	(Egger, 2001)	0.040	0.212^{ns}
	Communications Technologies	Use of synchronous and asynchronous communication media	(Preece and Maloney-Krichmar, 2003)	0.016	0.085^{ns}
Transpa-rency (formative)	Transparency of Goal and Purpose	Prominent display of the community's goal and purpose	(Leimeister et al., 2005)	-0.144	0.538^{ns}
	Contact Function	Providing contact details such as physical address, phone numbers	(Leimeister et al., 2005)	-0.153	0.595^{ns}
	Customer Service	Providing clear and quick replies to user requests	(Shneiderman, 2000)	-0.455	1.346^{ns}
	Disclosure of Firm Identity	Name and address of community operator are clearly visible on the Web site	(Leimeister et al., 2005)	0.305	1.205^{ns}
	Disclosure of Partner Companies	Displaying cooperation with and financial support from other companies	(Lim, Sia, Lee and Benbasat, 2006)	0.092	0.454^{ns}
	Profiles of Other Users	Various options in creating an individual user profile	(Ridings et al., 2002)	0.404	1.103^{ns}
	Presentation of Community Staff	Displaying pictures, names, or even profiles of community staff members	(Wang and Emurian, 2005)	-0.106	0.456^{ns}
	Separation of Advertising and Editorial Contents	Product advertisements and user-generated content are clearly separated from editorial content	Adapted from (Leimeister et al., 2005)	-0.001	0.005^{ns}
	Terms of Use	Easy access to the general terms and conditions of use	(Leimeister et al., 2005)	0.610	1.464^{ns}
	Transparency of Sources of Content	Display of authors and data sources of content	(Leimeister et al., 2005)	0.406	1.298^{ns}
	Completeness of Information Presented	Use of comprehensive and correct information	(Pavlou et al., 2007)	0.094	0.570^{ns}
	Information about Fees	Display of fees associated with community participation	(Pavlou et al., 2007)	0.058	0.300^{ns}
	Information about Transaction Process	Information about the procedures required to transaction	(Pavlou et al., 2007)	-0,062	0.311^{ns}
QAC (formative)	Current Information	Labeling content with date and time to identify the timeliness of information	(Everard and Galletta, 2005)	0.288	1.155^{ns}
	Existence of Role Concepts	Existence of an authorization and access rights model entitling users to execute different functions in the community	(Kim, 2000)	-0.493	2.145**
	Report of Unacceptable Behavior	Mechanisms for reporting unacceptable behavior and violation of rules	Adapted from (Pavlou, 2002)	0.280	1.068^{ns}
	Quality Check through Experts	Indication of whether content posted in the community has been proofread by experts	(Shankar et al., 2002)	0.038	0.128^{ns}
	Reputation and Feedback Mechanisms	Opportunity of providing feedback to other members	(Ba and Pavlou, 2002)	0.778	3.340***
	Rejection of Free/Teaser Offers	Degree to which free or teaser offers are present	(Wang and Emurian, 2005)	-0.044	0.197^{ns}

Security & Privacy (formative)	Disclaimer/ Warranties	Display of warranties by community operators	(Grazioli and Jarvenpaa, 2000)	0.243	1.243^{ns}
	Data Privacy Declarations	Prominent links to the privacy policy	(Leimeister et al., 2005)	0.133	0.663^{ns}
	Level of Anonymity	Configuration features that allow members to decide what kind of personal data is revealed to other members	(Ebner et al., 2004)	0.114	1.063^{ns}
	Privacy/ Security Seals	Display of independent trusted third-party seals	(Ba, 2001)	0.205	1.023^{ns}
	Overview of Information Required During Registration	Indication of reasons for the information required in registration forms	(Egger, 2001)	0.641	2.762***
	Ease of Access to Third-Party Reports	Display of credible reports about past performance	(Shneiderman, 2000)	0.256	0.956^{ns}
	Usage of CAPTCHA	Use of challenge-response tests during registration ensuring that the response is not generated by a computer	(Ratnasingham and Kumar, 2000)	-0.056	0.485^{ns}
	Usage of General Security Techniques	Usage of cryptographic protocols providing security and data integrity for data exchanges	(Belanger et al., 2002)	0.216	0.951^{ns}
	Changeability of User Data	Potential for modifying personal data and terminating membership	(Egger, 2001)	0.155	0.849^{ns}

Table 1. Coding Variables for Content Analysis and Measurement Model Assessment of Formative IT-Features