How users behave in a combined community/content environment

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Abstract:

Currently, combined community/content environments gain increasing importance in different areas of life, ranging from private to educational to corporate contexts. However, since they are still a novel achievement it is not so clear how they should be organised in order to their successful operation. For gaining a deeper insight in what makes such an environment work, the authors systematically analysed two public environments by evaluating user data and an online questionnaire covering the following areas: intensity of content consumption and production, preference of content types, information needs, motivation and trust, and importance of quality criteria. From the results a number of recommendations for providers were derived.

1 Introduction

For about three years technologies and concepts summarised under the term web 2.0 gain increasing importance. One of its key points – for the original definition see [1] or find a good recapitulatory description in [2] – is what is called the *architecture for participation*. The change of the internet in the sense of increased user participation and its effects are already graspable and web 2.0 little by little finds its way into various areas. Companies start using corresponding applications for business purposes as well as educational institutions start introducing corresponding applications for learning and teaching purposes. In the meantime a lot of research and reports have been done concerning web 2.0 in general and in special contexts such as [3], [4], [5], [6], [7] or [8]. A lot is especially said about communities and what can be achieved by them [9]. There is a plethora of success stories. Wikipedia is *the* collaboratively created encyclopaedia. Salesforce is the prime example for a company which integrates its customers in further developing their solution. The same is true for Lego. And Innocentive functions as intermediary between companies looking for a research and development solution and experts who can provide a solution. Communities are utilised in different ways by these organisations. Either groups of people create ideas or solutions in cooperation, or individuals who are part of a community create ideas or solutions by themselves. Anyhow, all of them are successful. Of course, organisations want to reproduce this success, not least because of being afraid to lose competitiveness without utilising communities and corresponding technological environments. Unfortunately, it is not so clear what has to be done for a successful implementation. Fundamental but action related insights are lacking. For that reason the work at hand concentrated on identifying key characteristics of communities: two communities were extensively analysed by means of questionnaires and user data analysis.

In the following chapter the analysed communities are specified, followed by a description of goal and evaluation method. Then the results are reported. Finally, the results are condensed to key findings which are discussed in the last chapter.

2 Analysis of community/content environment

2.1 Description of analysed environments

The first analysed environment was the knowledge community ALEXANDER. This environment was set up in the context of a pilot project conducted by the Graz University of Technology Institute for Information Systems and Computer Media and the Know-Center. There were also two cooperation partners, namely media companies which provided content. The official runtime of the pilot project was 5 months, from 6 September 2006 to 31 January 2007. In the environment users could consume professional and user generated content as well as they could produce content. The professional content consisted in newspaper and lexical articles and was provided by the two media companies. The users could ask and answer questions, create articles and suggest topics for articles. The quality was controlled by experts as well as by the users who could rate contributions. Another task of the experts was to answer questions which were not answered by the community itself within two days. Users could also place advertisements in the form of an article, but they had to mark them as such. In sum there were nearly 800 users which was the predefined upper limit. They were primarily acquired by three announcements of the newspaper partner. Even though no defined target group was addressed the community was restricted by the medium where it was announced.

The second analysed environment was the German speaking PLATTFORM WISSENSMANAGEMENT – PLATFORM KNOWLEDGE MANAGEMENT in English – established in 2001, which, as the name says, has its focus on knowledge management. Basically this platform consists of an area open to the public where contents such as books, reports or links are available and a community area which registered and sustaining members can access. A variety of services is provided in this area: newly posted content can be subscribed, a web based email client is integrated, users can manage their bookmarks individually and collaboratively, profiles of other users are available and can be checked for similarities, in a forum members can discuss their issues, messages can be posted on a pin board, and search functionalities help with finding content as well as members. Similar to the above described community PLATTFORM WISSENSMANAGEMENT provides professional content as well as user generated content. But contrary to the previous community, professional content is not offered by particular providers. Users themselves are called to suggest for example books, studies or links. However, actually this task is taken over by the moderator to about 99%, since community members are not contributing actively. On the contrary, activity within the above mentioned community services is satisfying. Target groups addressed by the platform are further education, consulting, interested practitioners, students and science. Contrary to the previously described community the current one does not only exist virtually but also physically. Regularly meetings and events are organised. The community has a long history, it exists since 2001.

As can be seen from the above descriptions these two platforms differ from each other in some concerns. While the second one is thematically focused and addresses a defined audience, the first one did not specify these aspects. Additionally, the first one was a pure virtual community, while the second one combines virtual and physical aspects.

2.2   Goal and evaluation method

As it was said in the introduction the goal of our work was to find out about fundamental characteristics of community/content environments, in reference to the activities of the users, in order to deriving indications for the design of a community/content environment.
For achieving this goal we analysed the previously described community/content environments. The analysis was done by conducting questionnaires which were presented online by use of LimeSurvey[1], formerly PHP Surveyor. Beside some specific questions, the following areas were addressed in both cases.

- Intensity of content consumption and production
- Preference of content types and information requirements
- Motivation and trust
- Importance of quality criteria

In both cases the questionnaire was available for about one month. In case of ALEXANDER there were 104 valid answers corresponding to a rate of return of 15%. In case of PLATTFORM WISSENSMANAGEMENT there were 73 valid answers. As it would have been expected the structure of the respondents was slightly different but comparable. About 91% of the PLATTFORM WISSENSMANAGEMENT respondents were registered or sustaining members, a majority of 82% was between 21 and 50 years of age, and the same percentage had a university degree. Also, 70% of the ALEXANDER respondents were within the mentioned age range, but a by far lower percentage, namely 36% had a university degree. Indeed nearly 50% had a high school degree, for which reason we can conclude that both samples were well educated. The proportion male/female was identical: about three fourth of the community members was male.
For the ALEXANDER community also logged usage data was analysed, which was not available for the PLATTFORM WISSENSMANAGEMENT community environment. The usage data analysis referred to kind and intensity of activity.

2.3   Results

In the following results are outlined alongside the before mentioned areas. In addition, some findings special to the individual environments are reported.

2.3.1   Intensity of content consumption and production

It is a well known phenomenon that usually most of the users contribute little while some users make up the bulk of the content. The majority uses community environments passively. Only the minority actively contributes. Against this background the environments were analysed.
In ALEXANDER half of the users stated that they spend between 80 to 100 percent of their time with pure reading. Also the following finding goes along with this result: as regards the total activity of the users in ALEXANDER it was found that 83% accomplished up to 50 actions, while only 15% accomplished between 50 and 500 actions. A similar result was found for PLATTFORM WISSENSMANAGEMENT. Across different content categories, the majority of users report that they spend 80 to 100 percent of their time with pure consumption. However, as the following Figure 1 shows there is a difference. In PLATTFORM WISSENSMANAGEMENT there is a balance of passive and active users. Nearly one third of users spend their time in actively contributing.
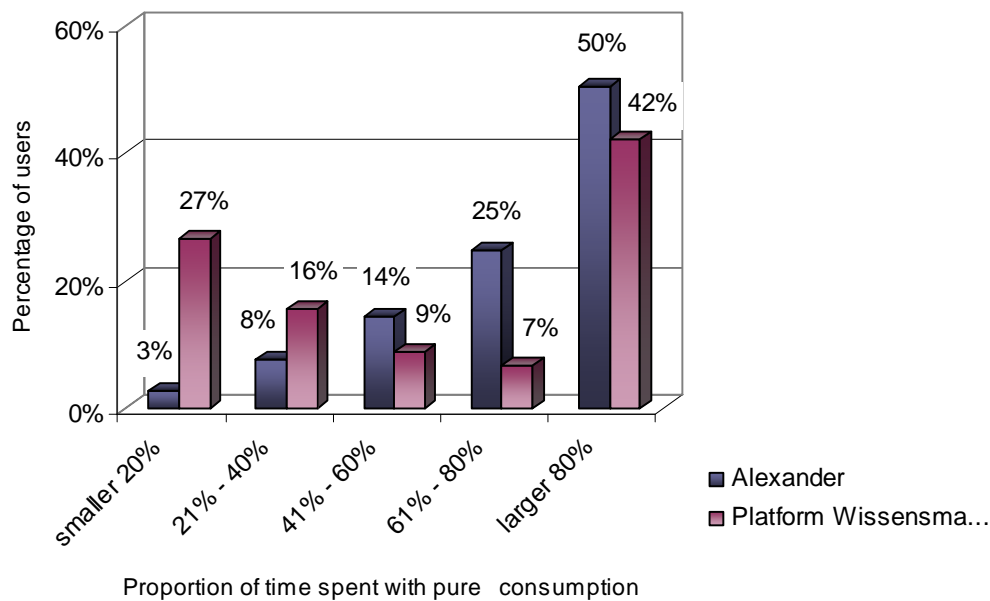
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[1] http://www.limesurvey.org/

Figure 1.
Percentage of users in reference to proportion of time spent with pure consumption of content

However, this proportion varies for the different content categories. Users spend about 63% of their time on average with consuming link and book tips or other professional content. As regards interactive content pure consumption is not so dominant: about 50% of the time on average is spent with pure consumption, while the other 50% are spent with actively contributing to forum discussions or posting on the pin board. Corresponding to the proportions of time spent for consuming different content categories, also in ALEXANDER it was found that interactive content, namely questions, answers and community articles were more frequently consumed than different kinds of reading tips and newspaper articles. The average frequency[2] of consuming community articles and questions/answers was 2.3 and 2.1, while the average frequency for consuming lexical and newspaper contents was 3.0 and 2.8, respectively.

When looking at the frequency of using the content/community environment as such we find some difference. As regards PLATTFORM WISSENSMANAGEMENT, 84% of the users report that they use the platform 1-2 times a month or less. The minority accesses the platform up to 1-2 times a week. As regards ALEXANDER, 61% of the users access the platform up to 1-2 times a week, while only 39% accesses it 1-2 times a month or less.

Concerning the interaction between users it was found that on the whole 1.062 answers were given to 424 questions, corresponding to 2.5 answers per question on average. Most of the questions were answered by the users themselves, only 12% were answered by experts. Response time was very short: the majority of questions, namely 72%, were answered within 24 hours.

2.3.2 Preference of content types and information requirements

Both communities provide the user with various content types. On the one hand there is professional content such as newspaper articles, lexical articles, books, theses or studies. On the other hand there is user generated content reflecting individual knowledge and opinions.

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[2] A four point rating scale was used, reaching from 1…frequent to 4…infrequent.

The question in this context is for which purposes users utilise the content/community environments. Are they interested in content, community issues or both?

For ALEXANDER it was found that when having concrete information requirements about half of the users preferably accounts for community content. Only 32% think about seeking advice in lexical articles first and only 17% look up newspaper articles first. When asked about the frequency of consumption, 53% and 65% report a frequent consumption of community generated articles and answers/questions, respectively. Only 30% and 37% state a frequent use of lexical and newspaper articles, respectively. In this context it is also interesting which link types were given in the community generated content. So, less than 3% of all links were links to newspaper and lexical content, but about 17% of all links were links to community content. Even though we do not have available the same data for PLATTFORM WISSENSMANAGEMENT, from an interview with the moderator we know that relatively people are more active as regards interactive community contents.

Concerning information requirements for PLATTFORM WISSENSMANAGEMENT it was found that 41% of the users have information needs related to profession and 45% of the users have information needs related to education. For ALEXANDER similar percentages were found. 55% of the users have information needs concerning learning and 44% profession have information needs concerning profession. There is, however, a difference. Since ALEXANDER addressed no special target group 27% of the users stated that they would consult the environment because of spare time related questions. The same was true only for 1% of the PLATTFORM WISSENSMANAGEMENT users. The lacking thematic focus of ALEXANDER is also reflected in the variety of topics that arose during run time. Ten categories were emerging, reaching from health/medicine to politics.

2.3.3 Motivation and trust

The motives for participating in a content/community environment can be manifold: people might wish to demonstrate their power or they might have a need for proximity. Since the analysed environments per definition were knowledge intensive knowledge related motives were queried.

As it can be seen in Figure 2 shows, for ALEXANDER it was found that on average the motivation for disseminating and exchanging knowledge was lower than for satisfying information needs, securing knowledge or undirected browsing. The average strength[3] of the knowledge dissemination and exchange motive was 2.0 and 2.3, while the average strength of the information need, knowledge securing, and knowledge browsing motive was 1.5, 1.5, and 1.6, respectively. Contrary, for the PLATTFORM WISSENSMANAGEMENT user on average it was more important to disseminate and exchange knowledge, and also to satisfy information needs, than to secure or browse for knowledge in an undirected manner. The average strengths of these motives were 1.8, 1.8, 1.6, 2.3 and 2.3, respectively.

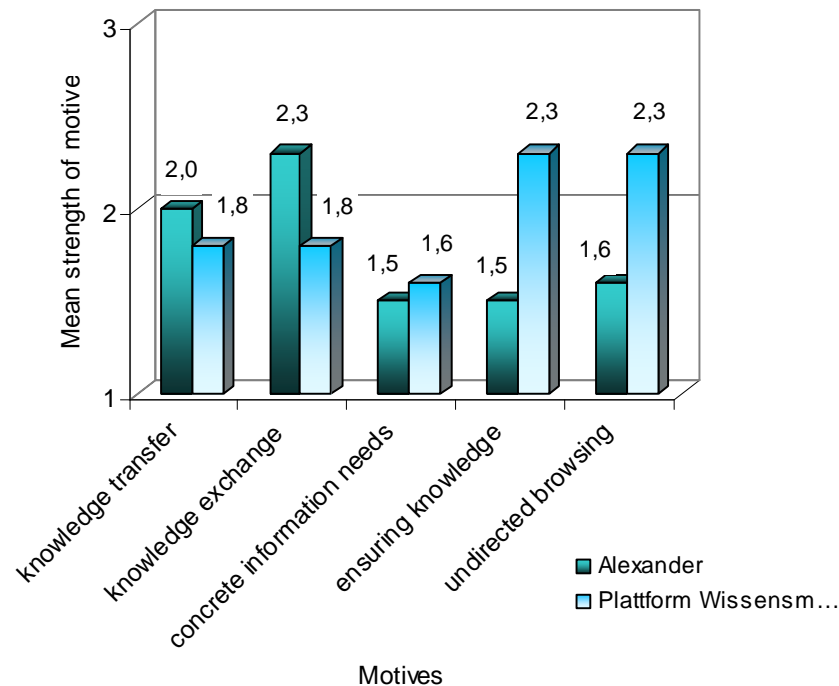[3] A four point rating scale was used, reaching from 1…strong to 4…weak.

Figure 2.
Motives for participating in the environments

Beside these directly addressed motives the following motives were listed by the respondents: curiosity, up-to-dateness and type of offered content, professionalism of environment, short response time, free of charge service.

Most ALEXANDER users – 85% and 64% respectively – told that their trust in community articles is highest when the qualification of the producer is good or when he got a good evaluation. Only 5% report that their trust is highest when the community member produced a high number of articles and 14% trust community articles most when there is a long membership.

2.3.4 Importance of quality criteria

Beside the content related questions it was also analysed which criteria were important for users in a content/community environment.

As regards quality control users of both content/community environments on average judged expert evaluation as important as user evaluation. In ALEXANDER the average importance[4] was 1.6 and 1.8, in PLATTFORM WISSENSMANAGEMENT it was 2.0 and 1.8.

Concerning community generated contents, for ALEXANDER users the correctness as regards content was of highest importance. The mean importance was 1.1. For PLATTFORM WISSENSMANAGEMENT users correctness as regards content, and also up-to-dateness were of highest importance. The mean importance was 1.2 and 1.3, respectively.

For PLATTFORM WISSENSMANAGEMENT users it was most important that goal and purpose are clear. The mean importance was 1.4. For ALEXANDER users it was most important that there were rules of behaviour. The mean importance was 1.5. However, on average all suggested conditions, namely goal and purpose, rules of behaviour, expert and user quality

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[4] A four point rating scale was used, reaching from 1…important to 4…unimportant.

control, were judged rather important. Across environments and criteria the mean importance only varied between 1.2 and 2.0. Among further mentioned conditions there were: quality control, easy to use system, good social forms, and transparency about members.

When asked for the conditions under which one would pay for a community service the following were mentioned: provision of very special, elsewhere not available content, high quality and correctness as regards content, authors get paid for their contributions, no advertisements, elaborated payment system.

2.3.5 Further findings

In ALEXANDER it was also asked which kind of advertisements would be accepted in a content/community environment. While, as Figure 3 indicates, 21% of the respondents would not accept advertisements at all, 72% would accept unobtrusive advertisements on the screen margin, 22% could live with banner ads, and only 8% could accept advertisements embedded in articles which were allowed in the ALEXANDER environment.
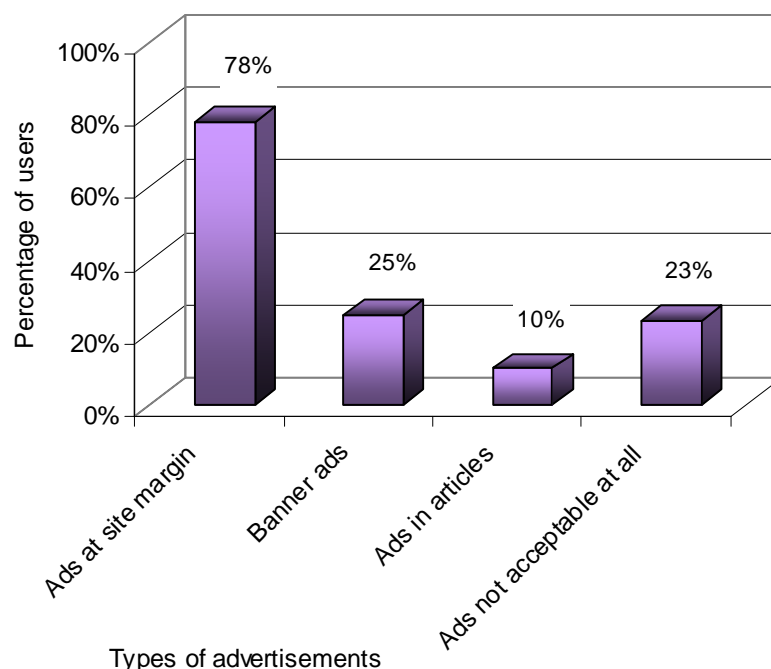

Figure 3.
Acceptance of advertisments

Since PLATTFORM WISSENSMANAGEMENT also organises physical events and people hence partly know each other they were asked for the importance of these contacts: for 70% of the respondents private contacts are a reason for further utilising the environment, while for 21% this is no reason. In that sense, 76% of the respondents stated that they were interested in the profile of other members, while 11% were not.

When asked for the channels via which people are best reachable and which hence could be used for promoting a new community 86% mentioned the informal way, namely colleagues or friends. Articles in magazines or newspapers were mentioned by 62% and internet advertisements by 38%. Promotion via television would work worst: only 1% is reachable via this channel.

2.4   Interpretation

In the following we summarise the results in form of key findings and outline what can be concluded as regards the design of a community/content environment.

Even though in both cases all knowledge intensive motives were important factors for participating in the community/content environments, in case of PLATTFORM WISSENSMANAGEMENT users it was relatively more important to disseminate and exchange knowledge than for ALEXANDER users. Concrete information needs were a driving force in both environments. Also in [7] the type *information searcher* was found to be a central user type as regards web 2.0.
From this result we can conclude that depending on the intended purpose operators of a community/content environment should take care of which motives they address and how they design and position the environment hence. So if for example the intention were to utilise communities the environment should have a thematic focus without providing too much diversity. Or, if a potential customer group such as students should be attracted it might make sense to provide a broader offer.
Next to the motives it should be mentioned that generally questions related to the professional and educational context are important drivers for accessing the environments. This means that people obviously do not participate in an environment simply for fun.

Most of the ALEXANDER users stated that their trust in community generated content were highest if the content producer has an appropriate qualification and the majority of PLATTFORM WISSENSMANAGEMENT users state that they were interested in the profiles of other users.
This suggests that in a community/content environment there should be some information about the users. On the one hand the value of community generated content can be increased and on the other hand interaction between users can be intensified. These factors might help to improve the reputation of the environment and even to enforce traffic which in turn will contribute to the competitiveness of a community/content environment. Also the suggestions in [10] point in that direction. For increasing trust in user generated content, amongst others, it is recommended to make user profiles, including for example expertise or experience, visible for the community members or to introduce possibilities for rating the contributions of other users.

As it was extensively outlined in section 2.3.1 only few users contribute a lot while the majority utilises the environments passively.
Even though this is a common finding – also, for example, in [7] it can be read that the number of passively participating users exceeds the number of actively contributing users in diverse web 2.0 communities – it is important to say that providers of community environments should make sure that either there are enough members so that the environment stays alive or there is a moderator/expert who contributes content and motivates the members. But also time has its effects: As it is stated in [8] utilisation switches to interactive and participative utilisation the longer a web 2.0 service is used. Moreover, it seems that if a critical mass of regularly contributing and active members has been reached the community is self sustaining. So in ALEXANDER response time was very short: most of the questions were answered within 24 hours by the community members themselves.

As regards preference of and relative activity in different content types it was found that users appreciate community generated content and content arising from interaction very much. Obviously there is a strong want for interacting with other people. The reason might lie in the

fact that community generated content better conforms concrete information needs than professional standardised content from which users must extract answers laboriously.
Thus cautiously it can be concluded that community features should be a standard service in an environment where content is provided. In this context it must be taken care of the quality. This can also be read from the results. Respondents emphasise the importance of correct content and judge user and expert evaluation as vital. Also the majority trusts community generated content most if the producer has a corresponding qualification. This means that in any case providers must implement some kind of quality control.

As can be read from the further findings some other aspects should be considered when designing a community/content environment.
Since also users state that rules of behaviour and goals and purpose of a community should be made clear, these should be introduced at the very beginning of a community. Knowing which behaviour is expected and what the community is for helps the users to orient and to contribute in a meaningful way.
Furthermore, it was shown that unobtrusive advertisements at the site margin are accepted by the majority of users. Only 21% do not accept advertisements at all. This suggests that advertisements can promptly be integrated in the community/content environment without discouraging users from participation.

3   Conclusion

By systematically analysing two existing public community/content environments for how and why users utilised them, a number of helpful recommendations for the organisation of such environments were derived. But even though a number of common characteristics and thus general suggestions were derived, it has to be emphasised that there were some differences, presumably arising from the different focus of the environments and thus addressed target groups. So PLATTFORM WISSENSMANAGEMENT is explicitly dedicated to the domain of knowledge management and a defined group of users, while ALEXANDER was not thematically focused and in principle everybody could use it. From this it must be concluded that there are some common guiding principles but also specialities which have to be considered when organising such an environment. This suggests that further detailed analyses of different kinds of communities are required, so that potential providers can be advised accordingly in their efforts of establishing such environments. Extended analyses must also include corporate community/content environments, since companies have an increasing interest in adopting web 2.0 technologies and principles for business issues.

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