Instant Online Communities as a Means to Foster Conferences

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Abstract. In this paper we introduce an instant online community (IOC) solution as an add-on for existing websites. The IOC enables social interaction between the main content provider and visitors of one or more websites. We present the successful application of the sixgroups.com Livecommunity in the context of a joint conference to support communication between organizers and attendees, and attendees amongst each others. All stakeholders are supported throughout the conference, from preparation until follow-up. Yet, the main focus lies in accompanying them while they are attending the conference. The lessons learned and conclusions from this application are discussed, as well as the steps to be taken in improving the sixgroups.com Livecommunity.

Keywords: Online Communities, Web 2.0, Conference Management.

1 Online Communities

Preece and Maloney-Krichmar state in the introduction to their special thematic section "*Online Communities: Design, Theory, and Practice*" of the Journal of *Computer-Mediated Communication* that "Community has become the 'in-term' for almost any group of people who use Internet technologies to communicate with each other." [1]. This statement seems especially true in the business world, if one recalls the 580 million US dollars that Rupert Murdoch's News Corp paid in July 2005 for taking over an online community – namely the social networking website MySpace [2]. This statement can also to apply for the academic field of computer science. Searching in the ACM Digital Library gives 995 hits for the search terms "online community" or "virtual community"[1].

   According to [3] *online community* can be defined as "…a voluntary group of users who partake actively in a certain computer-mediated service". The emphasis lies on:

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[1] Search conducted by the authors on February, 24th 2009. To relate this results to other common terms in computer science: searching the ACM Digital Library e.g. for the term "turing complete" leads to 222 hits, searching for the term "semantic web" to 2,997 hits.

(1) voluntary engagement, (2) using a technical carrier service, (3) interacting online as opposed to face-to-face, and (4) being aware of being a member of that special community. In other publications (e.g. [4, 5]) the term "virtual community" is used for denominating the very same concept. In the following, we use the term "online community" (short OC) as it denotes the character of the community more accurately: community members are interacting online as opposed to face-to-face.

As the aforementioned definition indicates, the basic constituents of OCs include *individual* issues, *group-related* issues, as well as *technology-related* issues. Whereas the technical carrier system of an OC can be engineered using state-of-the-art software and usability engineering methods [6, 7, 8], the underlying social system cannot be founded or created from scratch: "Recipe-based fabrication of online communities is, at the very least, a bold venture if not an illusionary enterprise" [cf. 3]. Or as Rheingold [4] states: "…communities grow organically and tend to follow their own rules". The underlying social system evolves over time because of social relationships, common interests, and goals or other circumstances people share. Therefore, we refer to this process as enabling or supporting communities rather than founding or building them.

1.1 Communities of Interest, Practice, Purpose or Circumstance

A large number of smaller OCs exist in the World Wide Web other than the few, but massively popular OCs, like MySpace, Facebook, or Friendster. OCs do not only differ in size, but can be classified into several types, like communities of interest, practice, purpose, or circumstance [10].

Some of them are not even meant to be an OC in the first place. Every situation where a content provider (producer) creates content on a website which is consumed by a number of recipients (visitors) has the potential to form a community of circumstance and interest [9]. Users share a common interest of visiting a website because of its content or its relation to a topic of general interest. In this situation, users may not know that they are involved in a community. The community exists at this time often only *virtually* (as opposed to *in fact*). The circumstance of visiting a specific website is part of the common ground of the visitors (for common ground cf. [11, 12]). On many of those websites the dialogue between producer and recipients and recipients amongst themselves is not well supported. Visitors are not aware who else is interested in the same content, webmasters do not know who their visitors really are.

Producer recipient interaction is described by two classes of goals for the different perspectives. The goals of the content providers are: (P1) *communicating* with visitors, (P2) *gathering feedback* from visitors, (P3) *providing support* for visitors, (P4) increasing customer *loyalty* and *stickiness*. Goals of visitors are: (V1) knowing who else is or was online, (V2) interacting and communicating with others interested in the same content, (V3) giving feedback to the content provider, (V4) expressing loyalty to the content provider.

In the following section, we introduce the idea of an instant online community – a service that addresses these goals by enabling social interaction.

1.2 What Is an Instant Online Community?

An instant online community (IOC) *instantly* enables social interaction for online communities. By instant, we mean supporting an online community ad hoc from an

already existing group of visitors of a website by providing visibility, awareness, and means of interacting between one another. A precondition for an IOC to work would be that people are located at the same virtual place, i.e. on a website, over a period of time. A defining feature for an IOC is the community enabling support by establishing the awareness of being a member of a community.

Community activities for establishing this awareness of being a member are not well supported yet on many websites. *Visibility*, *awareness information*, and the possibilities of *social interaction* are limited. Visibility implies that there is a place in general where community activity can take place. Awareness information allows members to see who is or was online and which resources have been contributed by other users at what time. Social interaction is supported by *personal profile pages*, *private messages*, "*friendships*", and conversations via *chat messages*.

2   The Sixgroups.com Livecommunity

The sixgroups.com Livecommunity is an IOC which is interwoven with an embedding website (*hosting site*) by widget technology (JavaScript/HTML-snippet). Once integrated, the Livecommunity shows up as a small bar at the top of each page of the hosting site (cf. Fig. 1). Interaction takes place in an overlaying window – technically an iframe – which opens on click events. All content that is related to the Livecommunity is hosted and delivered by the sixgroups.com server infrastructure, whereas the original website is left untouched with the exception of a small code snippet that has to be integrated.

2.1   Elements of the Livecommunity

The following elements are located in the closed bar (Fig 1, from left to right): (B1) sixgroups.com logo to access sixgroups.com website (e.g. to create a new IOC); (B2)

Fig. 1. The sixgroups.com Livecommunity bar embedded in the hosting website of the conference Mensch & Computer 2008

number of users who are currently online; (B3) triangle – opens the Livestream; (B4) last entry of the Livestream showing community activity and/or events (in Fig. 1, a message about a new member joining the VielMehr Community is pictured); (B5) "What is this?" – a link to a short introduction to the sixgroups.com Livecommunity; (B6) link to login or join the community; (B7) Search field for Google search.

A click on the triangle (B3) opens an overlay including the six elements (Fig. 2): (O1) register and login: users can create a personal profile page, and login. (O2) Message form: authenticated users as well as guests can post a chat message here (the administrator can restrict this feature to members only). (O3) *Livestream*: all items such as messages, events, and media resources are shown in chronological order and can be filtered by media type such as *Twitter message* (*Tweet*) or *Flickr photo*. At the same time, the filter settings show the number of items of each media type in the Livestream. The recent four items in the Livestream include a status message (1), a Twitter message (2), a photo from Flickr (3), and a friendship message (4). (O4) Information area: some essential aspects and benefits of the Livecommunity are explained here. (O5) Latest visitors: members who are online now or have visited the website in the past are presented. Finally, (O6) list of partnersites: a Livecommunity can be integrated into multiple websites which are listed as partnersites. This can be characterized as *webring*, a known concept of connecting multiple independent websites which share a common subject via hyperlinks.

Fig. 2. The sixgroups.com Livecommunity overlay superimposing the hosting website of the conference Mensch & Computer 2008

2.2   Use Cases

The sixgroups.com Livecommunity approach supports different use cases. The use cases are related to different requirements of the focused user groups. In this paper we will center on the use case *Support for Conferences*. Some simpler use cases are introduced briefly.

Use Case 1: *One Livecommunity per Website*. A Livecommunity is set up on a single website. A webmaster establishes a Livecommunity in order to provide a social context and to enable interaction between visitors of this certain website.

Use Case 2: *One Livecommunity for Multiple Websites*. A Livecommunity is distributed over multiple independent websites. This can be considered as an advancement of the concept of webrings. Different websites are not only interconnected via hyperlinks, but via one IOC that enables user interaction across the connected websites.

2.3   Use Case "Support for Conferences" – Real-Time and on Location Support

One crucial requirement for a successful conference is to establish a vivid social interaction between organizers and attendees, and attendees among themselves. All stakeholders need to be supported from the preparation to the follow-up of the conference. However, particular attention must be paid to supporting stakeholders while they are attending the conference. Therefore, the real-time and on location support is the most critical element for an IOC set up for a conference.

In the sixgroups.com Livecommunity approach, the so-called *Livestream* (Fig 2, O3) acts as the core feature that establishes a communication and awareness channel for all stakeholders. Attendees can use it for gathering and disseminating relevant information and networking before, during, and after the conference. Furthermore, the Livestream visualizes the syndication of media resources through the use of tags.

Media resources include all kind of media such as photos, videos, slideshows, blog posts, and messages from remote content providers such as Flickr, YouTube, and Twitter. Thus, the Livestream makes an existing information space accessible in a new way. Syndicating relevant content from remote repositories in one media stream generates awareness of the general web activity about conference related subjects in almost real-time, as opposed to only the activity on the conference website itself.

To support presence awareness [13, 14], a user list showing the online status for each user is presented (Fig 2, O5). Everyone who is online in the Livecommunity can start a conversation via chat messages (Fig 2, O2). Registered users are represented by nickname or first name, and a profile image, if available. Attendees preparing for the conference can use the Livecommunity to get in touch with other attendees or the organizers of the conference via *chat* and *private messages*.

During the conference, attendees can furthermore arrange ad hoc meetings and presentations, or just arrange lunch meetings. Single text messages can be transformed into a *threaded discussion* by answering a message. This feature can be used as a directed feedback channel if speakers and audience agree to use a certain discussion as a session specific *room*. Speakers, organizers, and attendees, as well as other interested parties, can join such a contextual feedback channel and also subscribe to

such channels using RSS feeds. This feedback aspect is a significant value for the organizers and speakers as well.

Conference related resources like presentation slides, photos, or videos are found by agents that scan available external services like Slideshare, Flickr, YouTube for the matching tags. All resources are fed into the Livestream in almost real-time. Users' activities and resources as well as all discussions are represented in the chronologically ordered Livestream which can be filtered by media type. Questions and answers remain visible in the system and constitute an information repository.

3   IOC for Conferences, a Case Study

In the following sections, the focused use case is illustrated by a case study covering the application and use of the sixgroups.com Livecommunity system at the HCI conference *Mensch & Computer 2008 (M&C)*[2].

The IOC was set up on the main conference website (http://vielmehr.org) and four subordinated sites, whereas each sub-site represents one of the conferences of the joint conference VielMehr[3]. Building such a webring helped to reach the critical mass of traffic in the Livestream and also helped to bring the attendees of the sub-conferences together to enhance thinking and acting outside the box. In order to promote and support the IOC throughout the conference, certain measures were taken. We introduced the IOC in a pre-conference email to all attendees and program committee members. The IOC was also presented in the opening keynote. In addition, there were data projectors that showed the Livestream in the foyer and in every session room.

The first community activity occurred one week before the beginning of the conference. Attendees announced their arrival times and anticipations. They asked about accommodations or arranged ride-sharing. In this case, the Livecommunity also assisted to coordinate the conference. On the first day, the IOC acquired the attendees' attention considerably. People noticed that their contributions in other systems (mostly Twitter messages and photos from Flickr) were showing up in the Livestream when the correct tags/hashmarks ("vielmehr08"/"#vielmehr08") were used. First conversations about sessions and possible meeting places occurred. A constant usage of the IOC became established during the following two days.

After 16 days a total of 1009 "*events*" (unique entries) occurred in the Livestream. These events where triggered by the users (community activities) or by the agents (syndicated content). The community activity was supported by a total of 82 users, which is about 13 % of all conference attendees. Table 1 gives a summary of the community activities and the syndicated content in the VielMehr-Livecommunity. As Table 1 reveals, a significant amount of traffic in the Livestream was generated via Twitter (237 out of 495 text messages were *Tweets*).

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[2] Mensch & Computer (Human Being & Computer) is an annual HCI conference for the German speaking HCI community, jointly organized by the Gesellschaft für Informatik (German Informatics Association) and the German Chapter of the ACM (Association for Computing Machinery).

[3] VielMehr (German for "much more") was the Motto of the joint conference.

Table 1. Summary of the activity in the VielMehr-Livecommunity recorded during the conference (expanded period from 09/01/2008 - 09/17/2008)

General Statistics		Community Activity		Syndicated Content	
Conf. Attendees	630	Conversations	258	Pictures	385
IOC memberships	58	"Friendships"	38	Tweets	237
Unique guests	24	Private messages	97	Blog posts	37
Total events	1009			Videos	13

4   Lessons Learned

The following lessons learned have been extracted by sixgroups.com and the organizers of the M&C conference. The analysis of specific measures, which have been mentioned in the last section, as well as interviews with organizers and attendees during the conference uncovered several shortcomings.

4.1   Providing More Visibility

One issue was a lack of visibility of the IOC. The closed Livecommunity widget (Fig. 1) was apparently unable to obtain enough attention on the conference website. Therefore, a deeper integration of the Livecommunity into the hosting website in order to increase the visibility and the interconnection of the contents is one of the core objectives in the further development.

   This can be achieved by a more salient design of the bar (cf. section 4.4) or by making features like the message and comment box directly accessible from the hosting website via widget technology. By this means it would be possible to start a discussion about a certain presentation by clicking a button related to this presentation in the program overview page on the conference website.

4.2   Explicit Communication and Visibility of Benefits

A second aspect was that the benefits of the IOC have not been made explicit to all attendees. Only about 13 % of all visitors of the conference were present Livecommunity.

   This aspect covers three dimensions which must be considered: (1) make the user interface communicate these benefits, (2) offer adequate help texts, and (3) offer suitable introductions into the benefit and use of an IOC at the conference (e.g. via email in advance, or as part of the opening keynote). The organizers can easily emphasize the value of an IOC as an information and feedback channel if they take care that the Livestream is already filled with great share of relevant and up-to-date content at an early stage of the IOC life cycle.

4.3   Better Referencing in Presentations

Every speaker should be briefed on the availability of the IOC. The speakers then should encourage their audience to use it for feedback on and during their presentations. Predefined structures (e.g. one thread per session) can simplify this procedure. The deep integration concept can further help in referencing the presentations as discussed in
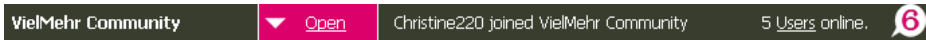
Fig. 3. Redesign of the sixgroups.com Livecommunity bar. The interface was purified in compare to the original design shown in Fig. 1.

section 4.1. Announcing short URLs for every thread (session or presentation) is another means for better referencing in presentations.

4.4 Take Usability Issues Seriously

A main challenge in usability as well as in user experience is the seamless integration of the IOC into the hosting website. Possible duplicate elements like login link, search field, or logo in the Livecommunity bar can interfere with the hosting site.

Therefore the elements in the bar were reduced to those which were necessary in the Livecommunity context. To further enhance the usability several redesign efforts were undertaken. Most of them resulted in purifying the interface (Fig. 3). Compared to Fig. 1 the new interface solved the problem of the competing navigation elements such as login/logout link and search field. The new version of the closed bar shows information and navigation elements which are provided by Livecommunity only. The bar now shows the name of the Livecommunity in a prominent position. The "Open" button has become the focused element. The triangle of the old design is still there and acts as a memory trigger for users familiar with the old version. The button works as a toggle to open and close the overlay containing the Livestream.

5 Conclusions

This last section is dedicated to the conclusions derived from using the sixgroups.com Livecommunity as an IOC for the M&C/VielMehr conferences. The organizers of the joint conference consider the integration of the IOC into the conference websites of all sub-conferences as successful. Attendees, as well as others interested – but unable to attend the conference – were connected to the event by recognizing and using the IOC on the conference website.

Community activity in the IOC took place in different ways: (1) extending one's social network by establishing *friendships* (the *social graph*), (2) private peer-to-peer communication, and (3) using the Livestream as a general public communication and awareness channel.

A final, more general, conclusion reflects a new type of community that we believe to have discovered during this and similar applications of the sixgroups.com Livecommunity. We will discuss this in the following section.

5.1 Communities Emerging around Shared Common Subjects

Syndicated content (or rather the fact that content can be syndicated) suggests that the application of a sixgroups.com Livecommunity can create a community that spreads beyond the boundaries of a single system or service. One particular feature that encourages this process is the Livecommunity backchannel.
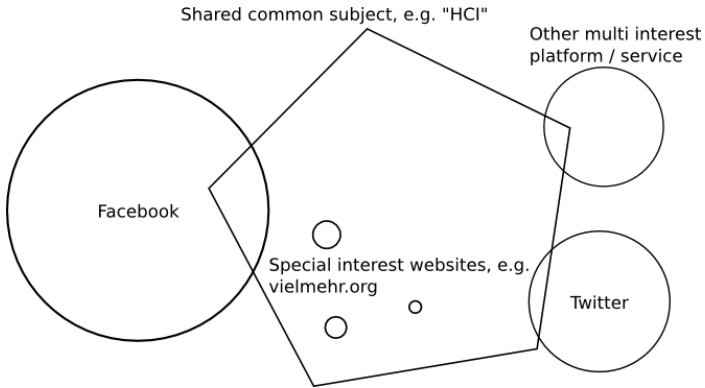
Fig. 4. Shared common subject spreading beyond system boundaries

At the moment the Livecommunity supports a backchannel for Twitter messages: a reply to a Twitter message shown in the Livestream can (via the Twitter API) also show up as a Twitter reply in the Twitter system itself. Therefore, it can be recognized by the person who originally posted the message on Twitter. Thus the boundaries of separated online communities are becoming increasingly fuzzy.

This causes a paradigm shift: The identification with a specific group of people using the same technical carrier system is no longer the defining feature of community membership. Now a community can emerge around a shared common subject beyond the borders of computer mediated services. Therefore, the boundaries of online communities have to be specified in a new way. They are not anymore constituted by a certain technical carrier system or service (Twitter, LinkedIn, Facebook, etc.), but by a shared common subject (e.g. "HCI", "Usability Engineering", etc.) (Fig. 4).

5.2   Outlook

Further work will be applied to enable online communities that can grow beyond the boundaries of technical systems or services. There are two main challenges that have to be addressed.

On the one hand, there are technical challenges: (1) Can a login and authentication process be established that can use one account/identity to authenticate users against multiple services? At the moment there are several promising developments such as OpenID[4] and OAuth[5] that can be used towards solving this issue. (2) Can user reactions (comments, ratings, etc.) on distributed content be transferred back to the content source (bidirectional transfer via APIs), so that the contributing user is able to recognize them if the technical environment is heterogeneous? These challenges can be summarized under the general issue of standardization.

On the other hand, there are usability, user experience and privacy challenges: (1) How is membership in OCs defined if identity is shared e.g. by OpenID? (2) How do users cope with fuzzy boundaries? (3) How can one provide appropriate awareness:

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[4] OpenID is a single-sign-on-system, see http://openid.net
[5] OAuth is a protocol to allow secure API authorization, see http://oauth.net

Where am I? Where are the other community members? Where is my content going to be published? (4) How can the users protect their (virtual) identity/identities?

In summarizing our lessons learned and conclusions it becomes obvious that for the advancement of the IOC approach like described further research is necessary.

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