User activity display: competition or conversation?

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Abstract

Mechanisms to motivate user participation became a necessary strategy for the evolution and sustainability of many online systems. Nowadays, most of these mechanisms are based on user activity displays, which take, for example, the form of badges or ranking scores. In this paper we discuss the current use of activity displays as incentives for user participation, and present IntroText, an alternative conversational approach.

1   Introduction

Nowadays, systems are designed to encourage and, at the same time, profit from users' participation (O'Reilly 2005). Facing high competition, they are impelled to create a whole bunch of mechanisms in order to get users involved in their causes. Once previous studies have shown that user contributions to online systems can be most of the times considered as a way of getting noticed within a community (Hoisl 2007; Bryant 2005; Kollock 1999), or as a by-product of users' communication (O'Reilly 2005; Kollock 1999), displaying user activity became a common way of stimulating participation. The display of users' activity can take many forms. A clear difference can be noticed between systems whose communities are formed around a theme and systems whose argument is the social network itself, e.g. Facebook and Orkut. While the second tends to directly show single activities and updates within a social group - in order to incite others to perform the same actions - the first tends to translate activities into a ranking system, resulting in an explicit stratification where some users fill leadership roles and others do not.

In this paper we discuss ways of displaying user participation (Section 2), and present IntroText (Section 3), an activity display designed to enhance participation within a community of interest in the architectural domain. IntroText builds on the practice of status updating and aims to be an alternative for ranking models.

2   Activity displays

Though the ways of displaying user activity depends on the community, the architecture and the information presented by each system, some patterns and tendencies can be recognized. In communities formed around a theme, user activity levels are mostly displayed through ranking systems, which track the amount of contributions of each user (e.g. number of posts or comments) and/or allow other users to rate contributions (e.g. by giving stars). The scores are than translated into a ranking scheme, and profiles are classified within a pre-defined hierarchy. In this case, users would contribute in order to reach high hierarchical profiles, or to shape their behaviour according to what they consider as a good paradigm.

Nowadays, however, it is known that power law distributions tend to arise in any social system where many people express preferences among many options (Barabasi 2003; Huberman 2001). In power law distributions, the value for the Nth position is 1/N, which means that the gap between the first and the median position is enormous, and tends to grow as the size of the system increases. Thus, the tendency in ranking profiles is that very few users occupy high activity/popularity positions, while the great majority ends up struggling to reach leadership roles without success. In this way, such approach is likely to bring disappointment or be ignored after a certain period.

Another common way of displaying user activity is to award badges or titles that represent the nature of users' activity. Such mechanism requires contributions to happen in different ways (e.g. tagging, commenting, etc). The definition of profiles, based on these actions, leads users to recognize each other within the community, and motivate them to pursue and assume one of these profiles, which can be easily reached. However, if activities, and consequently roles, are not varied enough, other ways of coping with users' necessity of personalization might be necessary - once incentive mechanisms are effective as long as they allow users to identify others and position themselves according to the created social system.

Another way to stimulate participation is to divulge the activities of users within their social groups. Facebook, for instance, openly reports users' last activities through status messages in order to inspire others to perform the same activity. Another tendency is to allow users to post mood messages, where they publish current actions or feelings in order to indirectly keep in contact with friends, and personalize their profiles.

3   IntroText

IntroText was developed to improve users' participation in MACE [1] - a platform developed to improve access to different architectural repositories in Europe. The range of users' contri-

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[1] http://portal.mace-project.eu [eContentplus - ECP 2005 EDU 038098]

butions in MACE is wide, including tagging, commenting, rating, adding location, external sources, etc. Besides viewing, any action carried out over a resource consequently links it to the user page - staying available as a bookmark. MACE is also a place to try different strategies for metadata creation and community studies. For this reason, users can agree with the tracking of their actions in the system at their register. Such data is used by IntroText to automatically generate statements, which are presented on users' profile pages portraying them within the system. Users' data - such as day last action, number of visits, days between registering and last action, etc.- is analyzed and used to define introductory sentences regarding three temporal levels: long-term, middle-term and last-visit behaviours. In the long-term level, general behaviour sentences are defined based on users' visit frequencies and time passed since last action. This data is interrelated and transformed in phrases such as: "eventually shows up", "is a continuous loyal visitor", "had fun for a day", etc. If recurrent actions are recognized, they are added to the phrase. For instance, if the main action is tagging, the system prints in the following: "who has made valuable contributions to the organization of contents". For the outline of mid-term and last-visit behaviour, IntroText analyzes action sequences such as entered search term, number of results viewed, time spent throughout the search, and/or the action performed on a viewed content (tagging, commenting, viewing). This data is translated into sentences that suggest the theme in which the user is currently involved, e.g. "A while ago, {*user name*} briefly labelled {*tagged resource*} with {*given tag*}", "Last time here, {*user name*} quickly found {*checked resource*} while searching for {*searched term*}" (see Figure 1).

Figure 1: IntroText examples

Each temporal level presents a different set of possible sentences. At the moment, the long-term level includes 2 groups of sentences, with respectively 25 and 15 possibilities. The mid-term level counts with 3 groups of 5 possibilities and the last-visit level has 3 groups of 2, 4 and 6 possibilities. All together we have 67 sentences that allow for 2 250 000 different profile descriptions. Special attention was dedicated to sentences describing low activity levels. Among the sentences defined 34 describe very low levels of activity. In fact, the variety of sentences is even higher, once the mid-term and last-visit descriptions include tagged and searched terms, as well as viewed resources, which are likely to vary from one user to another, even if the same sentence structure is presented. With IntroText, it is possible to know which themes users have been recently and/or constantly interested, and for how long. The general description (long-term) hints the amount and kind of resources that can be found at each profile page. Adjectives like quickly, intensely or cautious are used to form a perception

of the users' current mood. Latest search terms, ratings, comments, tags or added resources inform about users' research topics, the way they perform research, or the preferred actions and contents. IntroText inspires curiosity without being frustrating, because no goals or competition levels are to be achieved.

4   IntroText implementation

IntroText has been implemented on the February 2009 as the first step of a wider community experiment. During its first month of implementation we identified the highest amount of visits to profile pages, which almost tripled the previous average. We assume that users returned to the system to check their own profile pages, and the profile of their acquitances. Additionally, a substantial increase of activity in page views and searches was observed. Three weeks after the implementation of IntroText, a 3 questions questionnaire was carried out to evaluate general acceptance and privacy concerns - 16% of questionnaires were returned. From these, 87,5% evaluated the feature as great or amusing, only 16,6% did not support the communication of most performed actions, and 29,2% disapproved the display of most entered search terms. Such preliminary results point out to the potential of a non-competitive approach to influence behaviours within a community of interest. In order to improve results, however, additional community features must be improved or implemented in the portal, such as ways of contacting users and enhanced access to users' profile pages.

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