

Social-networking web systems: Opportunities for humanitarian information management

The Journal of Humanitarian Assistance
By Soenke Ziesche
Published April 12th, 2007

1.0 Introduction

The access to timely information is critical for relief operations in emergency and disaster situations. This requires a concise information management. In such a situation usually a number of actors, i.e. the local government, UN organizations, NGOs, are involved who depend on information, e.g. what is needed where, but also create information, e.g. who is doing what where. The Internet has facilitated the essential information exchange tremendously by services like email or the World Wide Web.

While there has been always progress in terms of Internet based services and web applications, there have been particularly developments over the last years, which are applied fruitfully in many contexts. Those are often summarized by the keyword "Web 2.0", introduced in [1]. While there is no ultimate definition for "Web 2.0" it can be probably best characterized by providing an architecture of participation for the World Wide Web, most notably in applications such as blogs and wikis. The common feature is the idea that users will not merely consume information, but they are now able and even encouraged to generate and distribute Web content themselves enabled by technical developments as well as a culture of freedom to share and re-use information. Further crucial developments concern new information retrieval methodologies, which are even more needed the more information is available. There is on the one hand the collaborative tagging approach and on the other hand the much more sophisticated concept of a semantic web.

The success of those concepts can be measured by areas of application. In this paper it is proposed that humanitarian information management is a promising domain to apply social-networking web systems, however yet underdeveloped. This paper focuses on blogs and the collaborative tagging approach while wikis and the semantic web in the context of emergencies are discussed in [2].

2.0 Overview of recent developments

Certainly, there have been Internet services for social networking before since this is after all what the Internet is about. Many features of blogs were already included in older approaches such as mailing lists and Usenet. However, newer developments do not only offer more and also more convenient features, but are for various reasons, including the simplicity, also used by a much broader audience.

2.1 Blogs

Blog is a short form for weblog, which is a website with regular entries by a user in a reverse chronological order, which resembles a journal or diary. For blogging no new web application is needed and the phenomenon exists already for a while. However, it became over the last years more and more popular and has already been characterized as a new form of journalism. There have been also new tools introduced, e.g. it is possible to update a blog with a mobile device like a mobile phone or PDA, which is called a moblog. Blog entries do not have a specific structure and can as well include pictures, which can be also directly posted from a mobile phone. Another feature is that everybody can comment on blog entries. Some blogs focus only on a particular subject, such as travel blogs or political blogs. This is the type of blog considered here, i.e. blogs, which focus exclusively on a particular emergency. The main benefit of blogging in this context is the feature that it offers a simple way to share information on a website from anywhere instantly.

2.2 Information retrieval

Here, a critical epiphenomenon of new social-networking systems is discussed. The value of an information repository highly depends on proper information retrieval mechanisms. Due to the fact that blogs are only structured by the chronological order of their entries searching for certain information in blogs is a challenge. A common procedure is the use of metadata, i.e. information about information, which are searched for certain keywords. An approach to standardize metadata is the Dublin Core metadata element set [3]. However, the rather time-consuming way to learn and use this standard is contradictory to the idea of blogs to share information fast and easily.

Hence, an alternative way was developed in the blogging community, which is the so-called tagging. A tag is a keyword, which classifies content. These tags are not part of a standardized classification scheme, but usually selected spontaneously and informally by the author of the concerned blog entry. Tagging becomes collaborative tagging [4], which is also called folksonomy, when it happens in an Internet-based social environment. In this way, users share and also compare their tag sets, which often makes it easier for a user to find related content. The entries of a collection of blogs can be sorted by a specific tag, which is usually a more efficient as well as transparent mechanism than searching for the same keyword with a search engine. The main benefit of tagging compared to the use of metadata standards is that they drastically lower categorization time since there is no complicated nomenclature to learn, in other words: Tagging provides an incentive to categorize.

3.0 Humanitarian information management

A number of websites exists where information on humanitarian emergencies and disasters can be found, e.g. ReliefWeb (www.reliefweb.int), AlertNet (www.alertnet.org) and also the home pages of the involved organizations. Moreover, there are sites, which are dedicated to a specific disaster, e.g. the sites of the Humanitarian Information Centres (www.humanitarianinfo.org). An example for a blog related to the South Asia earthquake from October 2005 can be found here: <http://quakehelp.blogspot.com/>

However, most of those sites rarely use the concepts described above of fast and massive user participation. This becomes apparent by listing the information products, which are provided: situation reports, press releases, contact lists, databases of assessments, who-does-what-where etc. Certainly, those products are produced by or based on the input of the concerned community. But by using blogs information can be provided much quicker and more directly, which is critical in humanitarian disasters, particularly in the early stages.

To illustrate the difference, situation reports, a common format for reporting in emergencies, are taken: Situation reports are usually produced daily at the onset of a disaster, later less frequently. Typically, a reporting officer writes those reports, who collects the information from various colleagues (and other sources). By contrast, blog services enable the persons who provide the information firstly to publish them directly, thus skipping the reporting officer, and secondly, they can do this immediately, i.e. several times per day.

4.0 Scenario for a disaster

In this section a proposal is introduced how the information management of a complex disaster can be handled by taking advantage of those new services: A web site template has to be made available, possibly by the UN, which provides blog functionality so that each participating actor can create its own blog. Discussions are possible through the comment feature of the blog. This would happen instantly after the disaster occurs and a home page, which links to such web site, should be well known so that the new site can be easily found. As described earlier those sites exist for some disasters, but the goal should be to have one central gateway, accepted and used by the whole community. Only this would guarantee the necessary comprehensiveness.

These tools are ideally used by everybody who is involved in the relief operation and who gathers relevant information. The person shares this information instantly by adding it to the blog of his or her organization. This would mostly concern staff who is on the ground and gets

first-hand information. For them the above-mentioned feature to update blogs per mobile phone, which includes the provision of pictures, is certainly convenient.

Although it was described above that blogs are less formal there is one aspect, which requires discipline and this is the proper tagging of entries. The more information is provided the bigger is the challenge to retrieve the relevant information. And while the tagging approach suggests freedom regarding the tags it is here proposed that two tags are not only mandatory, but also taken from a controlled vocabulary: the concerned cluster or sector of the blog entry and the location. The list of clusters usually includes shelter, food, health, water and sanitation, protection, education, and non-food items, but perhaps also cross-cutting themes such as gender or environment. For the location it is recommended to use the P-code system. It is a kind of zip code system, which is usually introduced by Humanitarian Information Centres in disaster areas, in order to clearly identify places despite different spellings or alphabets, see here for Pakistan [5]. These tags can be then complemented with personal tags and disaster and region specific tags respectively.

The default view of this site should present the latest blog entries including date, author, title of the entry, a snippet of the first three lines and the tags of the entry. In addition, the blogs can be sorted as described above by tags, e.g. "food" (cluster), "4521" (P-code), "aftershock" (disaster-specific). Further ways to sort the blogs would be by the only standard metadata "date" and "author", i.e. usually a specific organization. Pictures have to be tagged as well by the user. Thus, the tags allow filtering all blogs conveniently, e.g. by showing only entries of a certain date or a certain author which have certain tags assigned to them. A useful additional feature would be to show the "top tags", i.e. the currently most often used tags in different font size, see e.g. here: <http://www.technorati.com/>. This gives a good impression of the most important ongoing activities.

Moreover, it is proposed that everyone should be entitled to create a blog on this site. Individuals who are first at a disaster site can provide very useful information and did so in the past by using (unorganized) blogging. But also at later stages blog information from individuals might be relevant, for example from inaccessible or remote regions. Concerns regarding inaccurate information are addressed below.

It has to be stressed that it is not proposed to replace all former information products, but rather to introduce supplements. A "traditional" repository is still crucial where the other documents formats are kept, i.e. assessments, minutes, databases and maps. This would also serve as a library or an archive. However, it would be relevant that these documents have also tags, which improves the retrieval and also provides an interface between the range of products. The user would then be able search or filter either all documents of the site or only the blogs, which presumably contain the latest information. Another useful addition to this site would be wiki functionality, which is also highly based on user participation and which is discussed in [2].

4.1 Potential challenges and solutions

Regarding problems it could be argued that especially in disaster areas internet access or mobile phone network is not available, i.e. people might face problems to share their information as well as to read them. However, due to the importance of such techniques usually the (re) installation of those services has a high priority. International organizations normally bring VSAT systems, which do not depend on local services. But indeed internet accessibility is not always perfect. An alternative is e.g. the kiosk approach, which is a repository of all relevant documents in an information center, which has proper internet connectivity and should be centrally located. Here, all members of the community on the ground without internet access can come and up- and download data by memory stick or hard copy. This can also include blog entries.

In order to make blogs useful they have to provide comprehensive and reliable information, which in turn requires a broad willingness to participate as well as the mental and technical ability. Regarding the willingness the community could be motivated by promoting the benefits at a short workshop. But even this might not be necessary anymore in the near future as

blogging is becoming more and more a common phenomenon like emailing or sending text messages by mobile phones. This is also related to the fact that the procedures are fairly simple and intuitive and do not require specific technical knowledge nor additional working time, e.g. it is basically the same to forward news in an email or by text processing software as to write them in a blog. Another possibility would be to change the terms of reference of concerned staff in a way that it states explicitly the duty of sharing information in blogs.

Nevertheless, it is essential not to exclude anybody of the community. This might concern especially the partners from the local government, not only due to technical limitations on their side, but also blogging might seem to them as a rather alien way of communication. Here, the cultural awareness of communication traditions is important. Blogging should not be the only tool to exchange information about the disaster, in order to make sure everybody is in the picture. However, this new way of communication should be introduced and like with all new communication mechanisms they will spread if they prove to be successful.

Another objection could be that easily – intentionally or unintentionally – wrong information can be spread in the blogs. But similar e.g. to Wikipedia the best quality control is probably if all contributors are requested to monitor all contributions and then if necessary comment on nonsense or obviously wrong information, i.e. the community takes care of the correctness. Two other tools to prevent incorrect information and vandalism is to assign certain sections to somebody as a watch list, so that this person would check this part regularly and thoroughly, e.g. the head of a cluster could be assigned to all content related to this cluster. Furthermore, if intentional vandalism becomes apparent the vandals can be blocked by their IP address. Another issue is if there is a dispute about certain information. In this case, the relevant tool is the comment feature, which is for each blog entry an integral part and where contributors have the opportunity to exchange their points of view.

The publication of non-authorized information through blogs might also be a concern for the UN or other organizations who usually have clear reporting channels so that only dedicated staff gives information to the public, see above. However, the introduced mechanisms for quality control and the benefits of much faster circulation of information might outweigh those objections.

5.0 Conclusion

The main and in a disaster situation critical advantage of using social-networking web systems like blogs is that information is faster available. It can be posted by everybody from anywhere by skipping the press or reporting officer of the organization as well as web editors. Another likely effect is that more information is available since it is much simpler now to share data. To summarize, despite certain challenges, which accompany probably all new technologies, it is proposed here that an extensive use of blogs would provide enormous benefits for the exchange of information in humanitarian emergencies while the critical issue of efficient information retrieval is addressed by collaborative tagging.

References

- [1] T. O'Reilly. 2005. What Is Web 2.0 - Design Patterns and Business Models for the Next Generation of Software. <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- [2] S. Ziesche. 2006. Semantic Wikis and Disaster Relief Operations. <http://www.xml.com/pub/a/2006/12/13/semantic-wikis-and-disaster-relief-operations.html>
- [3] D. Hillmann. 2005. Using Dublin Core. <http://dublincore.org/documents/usageguide/>
- [4] S. A. Golder & B. A. Huberman. 2005. The Structure of Collaborative Tagging Systems. Information Dynamics Lab: HP Labs, Palo Alto, USA. <http://www.hpl.hp.com/research/idl/papers/tags/tags.pdf>
- [5] P-codes <http://www.unhic.org/usr/ShowContents.aspx?l=1&h=11&sh=-1>

Dr. Soenke Ziesche received a PhD in Computer Science from the University of Hamburg and also a Certificate in International Affairs from the New York University. He has worked for the United Nations for the past six years in the humanitarian information management sector in Gaza, New York, Colombo and Islamabad. Currently he is based in Blue Nile State, Sudan.

©2007 The author(s)

All opinions expressed are those of the author and not necessarily those of the Journal of Humanitarian Assistance, its editors and staff, the Feinstein International Center, or Tufts University.

While every effort is made to ensure accuracy, any errors in the article are solely the responsibility of its author.