Between social awareness and productivity, results of a survey about real-time microblogging
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Abstract. In April 2010, we conducted a survey towards 256 users of real-time microblogging platforms, mostly Twitter users, in order to analyze the usage and impact of those platforms. In this report, we present the results of this survey, and discuss their explanation and possible usage improvements towards reducing information overload and interruptions.
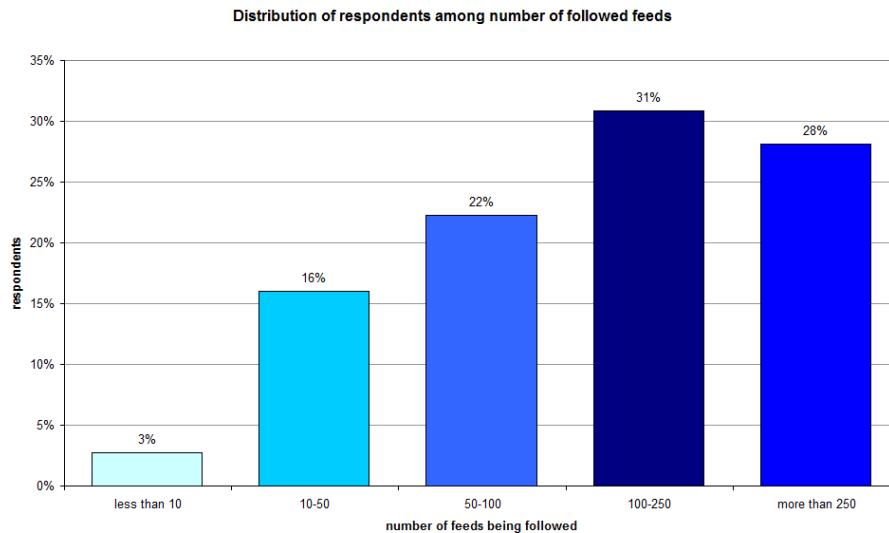
1 Results of the survey

Fig. 1. Distribution of respondents among number of followed feeds -

As seen on the distribution chart 1, most respondents (31%) follow between 100 and 250 people feeds. The second category of respondents (28%) follow more

than 250 feeds, which is much higher than the Dunbar number (i.e. the maximum number of people one can naturally maintain a stable relationship with).
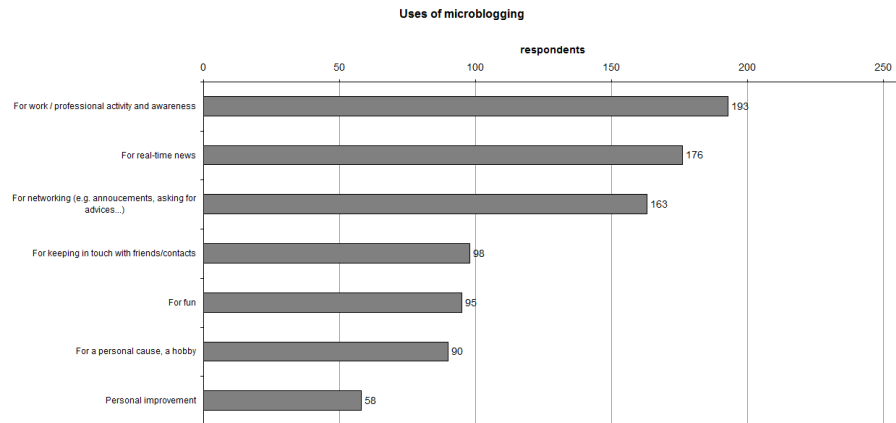
Uses of microblogging

respondents

Fig. 2. Uses of microblogging -

Figure 2 reveals that 75% of respondents use microblogging platforms for their professional activity, 69% use those for keeping up with news, and 64% leverage the *six degrees of separation* effect for networking (i.e. making announcements, or ask for advice from their contacts). Personal and fun usage of microblogs is lowly represented (23% to 38%), at least by the respondents of this survey.
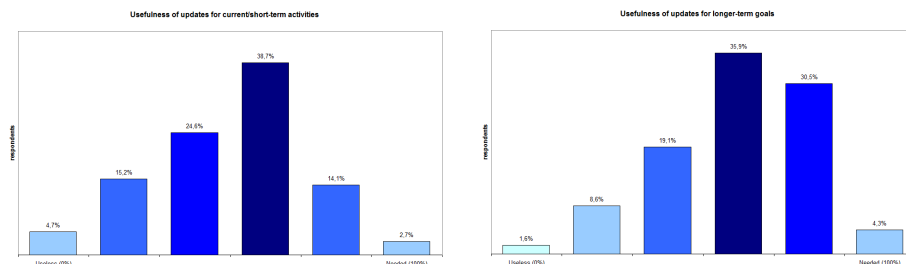

Fig. 3. Usefulness of microblog updates - for current activities (left), and for longer-term goals (right)

On a 6-rank scale between 0 and 5, most respondents (between 35.9% and 38.7%) gave a medium-high rate of 3 to evaluate the usefulness they perceive over all the updates they read, as depicted on Figure 3. However, we observe

that usefulness is rated slightly higher for longer-term goals (4 being the second most given rate, with 30.5%) than for current activities (2 being the second most given rate, with 24.6%). This can support the hypothesis that, in most cases, new real-time updates should rather not interrupt users in their current activities, as many updates show little usefulness for this activity.
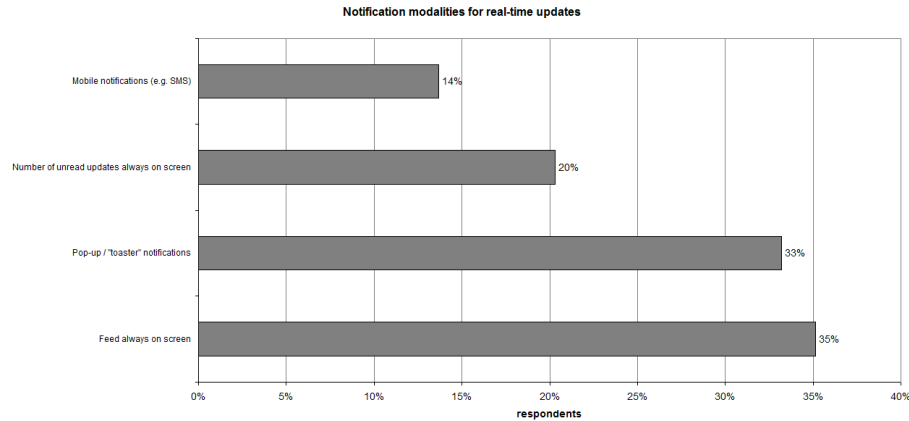
Notification modalities for real-time updates

Mobile notifications (e.g. SMS)	14%
Number of unread updates always on screen	20%
Pop-up / "toaster" notifications	33%
Feed always on screen	35%

respondents

Fig. 4. Notification modalities for real-time updates -

According to Figure 4, most respondents (35%) keep the last updates from their microblogging platform always visible on their screen. About as many respondents (33%) activated pop-up (also called *toaster*) notifications on their screen, in order to keep up with the last updates in real-time. Fewer respondents chose to monitor the number of unread updates (20%), in order to decide when to read those messages, or to receive notifications on their mobile phone (e.g. SMS) (14%).

As seen on Figure 5, the amount of attention given to real-time update notifications varies among respondents who receive such notifications, whereas 18% of them do not receive such notifications. Most of them (62%) read most notified updates, depending on their ongoing activity and availability. Others either read all notified updates (7%), or simply ignore those (13%).

From Figure 6, we can observe that microbloggers consume more content than they produce. Indeed, 66% of them consult the attached content of 50% to 80% updates they receive, whereas the same proportion of respondents actually respond by replying or relaying 10% to 50% updates.

In response to the large amount of social updates they receive, Figure 7 depicts that 78% of respondents don't use filtering mechanisms. The most number of others who do (8%) developed their own filtering mechanism, instead of leveraging existing services offering filters (5%) or trends (4%). 5% respondents, beyond not using filtering mechanisms, would rather receive more updates. This
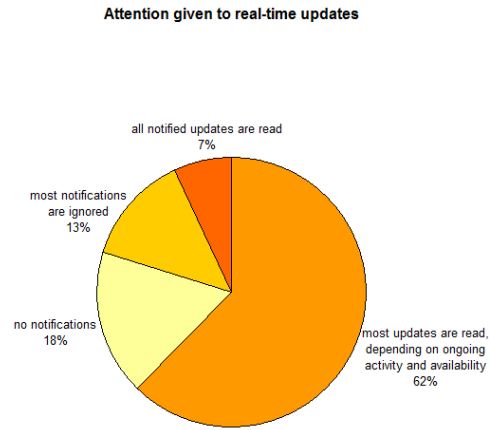
Attention given to real-time updates

all notified updates are read
7%

most notifications
are ignored
13%

no notifications
18%

most updates are read,
depending on ongoing
activity and availability
62%

Fig. 5. Attention given to notified updates -

Probability of consulting attached content

0,8% 2,0% 4,7% 12,9% 9,0% 16,0% 16,4% 18,8% 14,6% 4,3% 0,4%

Never (0%)   Half (50%)   Systematic
                                        (100%)

Response rate

1,2% 19,5% 23,0% 15,2% 9,0% 5,9% 12,1% 8,2% 4,3% 0,8% 0,8%

Never (0%)   Half (50%)   Systematic
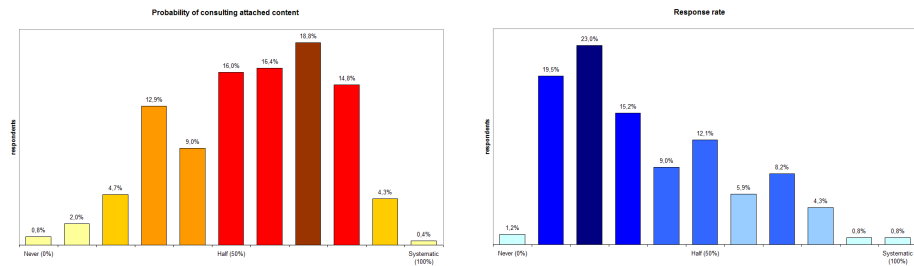   (100%)

Fig. 6. Probability of consulting content attached to updates - (left), and of responding to them (right)
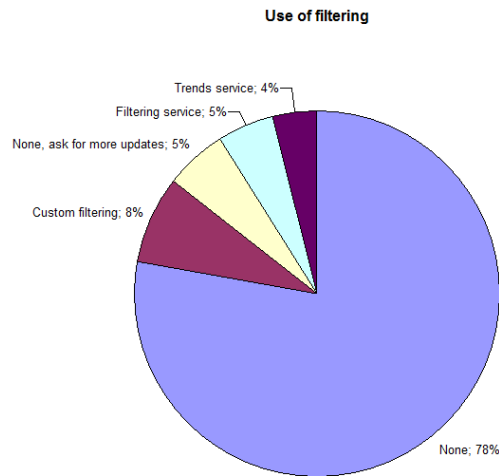
Fig. 7. Use of filtering -

last category represents a close portion to respondents who follow less then 10 feeds, as depicted on Figure 1, which would explain their eagerness for more updates.

Although we have observed that most respondents don't use filtering mechanisms, Figure 8 reveals a need for filtering: 59% of them would like to filter by type of updates (e.g. news, professional, personal, fun, etc...) and 51% by subject. Relevance filtering is also expected by respondents, either according to their current interests (37%) or current activity (36%). Fewer of them would like to benefit from other filtering criteria on updates, such as the type of content (20%), geographical proximity (18%), or relevance with future activities and plans (16%).

2 Filtering mechanisms: challenges, solutions and opportunities

On Figure 8, we have seen that the two most expected filtering mechanisms are by type of update, and by subject. This can be surprising, as it is already granted for microblogging users to chose whose feeds they follow, and to follow subjects of interest represented by corresponding terms and hashtags. However, these native features provided by current microblogging platforms are a partial solution to that problem: people do not always post updates of the same type (or at least, they do not have to), and it can be tedious for users to select the right terms and hashtags for following updates on a specific subject. Query enrichment and semantic search mechanisms could support them for this second need.
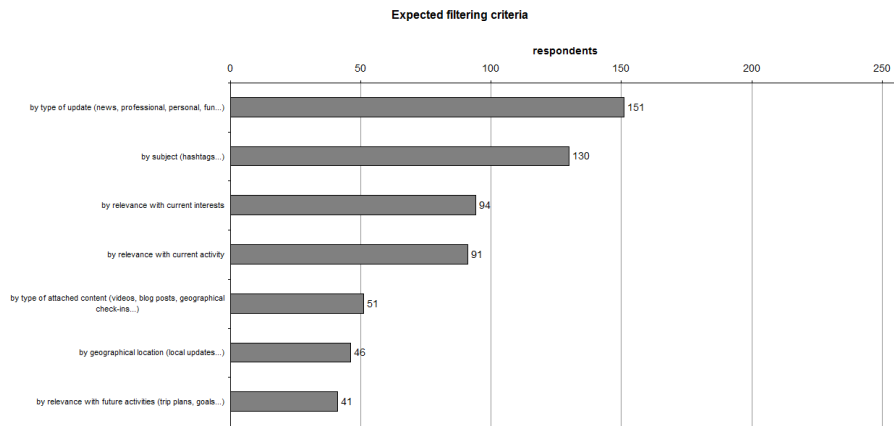
Fig. 8. Filtering criteria most expected from respondents -

Concerning the type of updates, a solution could be that people post updates through different feeds, depending on their type. They would thus have to expose and maintain separate professional, personal, and other specific feeds, and their followers would have to follow the feeds they are interested in, depending on the type of updates posted to those. Another solution would be to ask users to provide some metadata to describe the type of update they intend to post, as long as microblogging platforms would allow type-filtered subscriptions to their author's feed, instead of simply following his whole feed.

The two following most expected filtering mechanisms are more dynamic: they rely on relevance of updates with the consumer's current interests and activities. As a person's current interests can be profiled, updates can be ranked against this profile, in order to deliver the most relevant ones. Such filtering mechanism is proposed by the *my6sense* application (http://www.my6sense.com/), in which users' interests are profiled according to descriptive features (e.g. metadata, tags, or frequent words from the content) that are attached to the content they decide to read. Concerning the relevance with current activities, such profiling becomes more complex, as users can achieve their activities out of the scope of the application that delivers updates, e.g. on various computer applications, or even without the computer. In that case, some knowledge on the current activity of a user must be gathered by analyzing contextual cues acquired from several sensors: physical (e.g. user's location from a GPS device), virtual (e.g. name of the document being edited with word-processing software on the computer) and social (e.g. messages and updates from other users, giving clues about the user's current activity and context).

3   Discussion

This survey reveals that users of real-time microblogging platforms (such as Twitter):

– usually consume many updates (with or without being notified in real-time), mostly for professional use, news and networking;
– mostly receive updates that are interesting in regard to their longer-term goals, more than to their current activities;
– consult the content attached to many updates, but do not respond to them often;
– and that they would benefit from filtering mechanisms.

In response to those observations, we proposed some opportunities for improvement:

– In order to allow users to filter updates by type more easily, we recommend that each user maintains separate accounts (with different followers) for each type of updates (e.g. personal messages, news on specific topics, etc...)
– New metadata could also be added to microblogging systems, so that authors could precise the type of each update they post.

In response to the need for filtering by relevance with users' current interests and activities, we developed a system that can maintain a dynamic profile of users, based on physical, virtual and social sensors.

Acknowledgment