The ChatterBox

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Abstract. The ChatterBox generates and presents texts based on text material produced at a certain place, for instance at an office. The idea is to create an alternative view of what is being done, that might serve as inspiration to think about existing material in new ways, as an incitement for informal discussions, as a piece of art, or just as a kind of dynamic wallpaper. In order to fulfil these aims and still not increase information overload, we aimed at making the ChatterBox an instance of calm technology designed to remain in the background of our activities. In this paper, we describe the ChatterBox concept along with some initial experiences and future research directions.

1   Introduction

The initial inspiration for the ChatterBox comes from a novel by Douglas Coupland, called Microserfs [1], in which the main character Dan at one time ponders on whether machines have a subconscious of their own or not. He starts to create a "SUBCONSCIOUS" file on his computer by writing down random words that comes across his mind. Even though the content of this file is fragmentary and largely at random, it comes to represent an alternative story or a complement to the main story of the novel.

We wanted to create a similar alternative view of what is going on at a certain place, by collecting material that is being produced, transforming it, and presenting it at public places. The idea was not to give an exact or accurate picture of the activities, but rather to create a public resource that could serve as a piece of art, as inspiration to think about the work in new ways or as a support for becoming aware of ongoing activities.

The aim was to design the ChatterBox as an instance of "calm technology" [6]. In Weiser and Brown's view, technology becomes calm when it remains in the background, or periphery, of our activities unless especially attended to, making it a readily available resource that still does not contribute to information overload. As the ChatterBox conveys information about ongoing activities, it can support some kind of awareness of these activities. However, the kind of awareness supported by the ChatterBox' fragmentary texts is more in line with abstract displays such as the Dangling String [6], Ambient Displays [8], AROMA [5] and Visual Who [2], than applications such as for instance Portholes [3] or TickerTape [4]. Further, the

ChatterBox has been designed as a resource for co-located, rather than distributed, groups of people. As the ChatterBox is not primarily intended to solve a specific task or problem, but rather to be a part of an environment, systems halfway between art and applications, e.g. [7], are important sources of inspiration.

2   The ChatterBox

The ChatterBox generates and presents texts, or short "phrases", based on text material produced by people working in an office environment. Offices seemed well suitable for this purpose, since people typically produce text at such places, and appreciate awareness of what is "going on", as well as some inspiration. The ChatterBox was designed with wallpapers, rather than ordinary information displays in mind. Thus, the presentation of the material should be aesthetically appealing and, without ceasing to be dynamic, rather slow. Instead of introducing yet another window on the desktop computer screen, the ChatterBox uses displays that are situated where people naturally move around or gather, as people should not have to attend specifically to the ChatterBox. Further, the purpose is not to make people stand and look at it for long periods of time, but to invite them to take a quick glance while passing. Displays can be placed in corridors and lunchrooms to be viewed in a relaxed manner and to provide themes for, for instance, casual discussions.

In order to make the ChatterBox fully fade to the background, no explicit actions should be required to use it. However, for privacy issues we have placed the control over what is being submitted to the system in the hands of the user. Even though automatic collection of material from local computer networks might be preferable when trying to reach beyond a traditional human-computer interface as far as possible, many privacy issues are avoided by letting users actively submit text to a dedicated email account or a directory in the computer file system. However, as the transformation of the material will be quite extensive, at least partial automatic collection of material could be acceptable in some cases.

2.1   An Early Prototype and some Experiences

The first prototype used text documents as input and returned a continuous sequence of "phrases" made up of three to five randomly selected words from a database containing the words from the documents. Words that were not likely to convey any informative meaning, such as prepositions and conjunctions, were filtered out using an algorithm based on statistical measures of word frequencies. The generated texts were presented as scrolling text in a console window.

We have tried the prototype in two settings: at our office using a projector on a wall in the common corridor, and at a large reception party using three 100" background projection displays. Despite the lack of almost any syntactically correct sentences, it inspired informal discussions and gave its audience a few laughs. However, it was clear that the random phrases were too abstract to be informative for the purpose of supporting awareness about activities. Also, random phrases seem to require too much attention to make sense to the viewer. In future prototypes this

problem will be addressed by using more advanced text processing and text generation techniques. Several other factors seemed to prevent the ChatterBox being a truly calm technology as well, most notably the displays used and the very fact that the system was novel to the viewers.

3   Future Work

Since this is research in progress, work is put on developing a second prototype that better matches the intended purposes with the ChatterBox. More advanced text processing is being applied, e.g. techniques from research in information retrieval and filtering, as well as more linguistic approaches. Automatic text tagging systems and semantic networks will enable us to use for instance finite automata for generating sentences. We will also try to transform whole sentences or even paragraphs by substituting just a few words, thereby saving more of the original context. As the ChatterBox is designed to furnish certain places, aesthetic considerations will also be important in future work and for instance the visualisation will be improved. Further, the development of electronic ink and similar non light-emitting display techniques might open up new possibilities when creating ubiquitous and calm displays.

In order to find out how well the ChatterBox performs and for whom, we will perform formative evaluations at several different locations using primarily qualitative methods. Especially, finding out how "calm" the ChatterBox can be made without losing the effect of being inspiring, entertaining and useful for conveying awareness, is an important research question in the search for calm technology.

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