Healthy persuasion: web sites that you can trust

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Abstract. Health websites are an abundant and frequently used source of information and advice. How are users of such sites persuaded to trust the advice they read and to act upon it? In this short paper we outline a model of trust in online health advice and highlight the key features in relation to both traditional web 1.0 websites and web 2.0 health sites. Findings from two recent studies are reviewed to provide examples of the ways in which persuasive technology is influencing health behaviour in complex and subtle ways.

1 INTRODUCTION

Health applications are a key target for developers of persuasive technology. Computers, websites and increasingly mobile applications have the potential to change attitudes and behaviours through persuasion and social influence. Encouraging certain positive health behaviours and discouraging negative behaviours has long been the goal of health psychologists, the medical profession and policy makers in general. Health websites offer a way of providing consumers with information and advice about a range of conditions, diseases and lifestyle choices. Who provides this information, the way in which it is presented and the characteristics of the consumer themselves all affect the extent to which the advice is seen as trustworthy and hence the extent to which they are persuaded to act upon it.

In this paper we review the major trust issues associated with e-health and outline a staged model of trust in this domain. This model is then used to highlight two key drivers of persuasive technology: firstly the role of credibility in persuasion and its reliance on design where traditional web 1.0 sites are concerned and secondly the role of people as persuaders in web 2.0 health sites.

2 TRUST ISSUES IN E-HEALTH

Despite its unregulated and often unreliable nature, the Internet is rapidly becoming a new "object of trust" [1]. Research indicates that internet users' rate trust as an important issues within the health domain [2]. They are interested in health advice which is independent and impartial and want websites to be easy to use [3]. Recently health consumers have been turning away from more regulated sites (i.e. those run by government bodies) and towards more personalized sites, often maintained by interested individuals [3] Users are keen to explore other patients experiences online [4] and the rise of sites social networking sites such as myspace and facebook facilitates the disclosure of personal health information. Of course this raises important issues concerning the way in which people evaluate the trustworthiness of health information and advice online and how they choose to engage with health websites.

Various factors appear to be influential in fostering trust. For example, some researchers argue that consumer trust (or a related construct, credibility) is primarily driven by an attractive and professional design [5]. Others argue that trust reflects the perceived competence, integrity predictability and/or benevolence of the site [6] and a few authors also highlight the importance of personalization in the formation of trust judgments [7]. A staged model of trust helps to reconcile the differences in the literature.

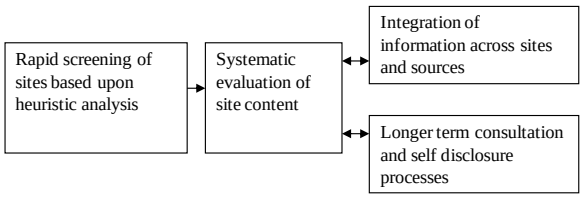

Figure 1. Staged Model of Trust

A number of authors [8, 9] have suggested that three phases are important: a phase of initial trust followed by a more protracted exchange which then may or may not lead to a longer-term trusting relationship. If one considers trust in this developmental context then some of the findings in the literature make more sense. In particular, consideration of a developmental context helps to reconcile the tension between those models of trust which suggest that it is a concept grounded in careful judgment of institution and process factors such as vendor expertise and experience, process predictability, degree of personalization and communication integrity and those models that suggest trust decisions depend much more heavily on the attractiveness and professional feel of a site. A framework built upon one such model [8] proposes three stages of trust development in online health domains (see figure 1). The first stage consists of a heuristic screening process in which sites are rapidly rejected on the basis of their design appeal. This is followed by a second stage in which users undertake a more careful content evaluation of the site noting for example, authorship and credibility issues. The third stage consists of a process of longer term engagement with the site through source integration and self-disclosure processes. This model highlights elements that are important to both traditional web 1.0 health sites and web 2.0 sites. In the remainder of this paper we explore those elements in more detail. Firstly the importance of trust and design cues in changing health behaviour and secondly the role of people as persuaders in an online cancer support group.

3 PERSUASIVE HEALTH WEBSITES

Large scale survey data as well as in-depth qualitative studies suggest that consumers are persuaded by the design elements of health websites [4, 5]. People are more likely to find information and advice on a well designed website credible. Finding

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information credible is one thing but being persuaded to act upon the advice is another. Do these design cues actually persuade people to change their health behaviour? In a recent study [10] we assessed the extent to which website design elements or trust cues could influence health behaviour. Participants were shown one of two versions of a website describing the genuine link between alcohol consumption and breast cancer. The Web sites contained the same high-quality content but crucially included design elements or cues known to be either positively or negatively associated with trust. Examples included a TRUSTe seal (positive) and advertising content (negative). Initially participants were persuaded by the material on both websites, One week later, there was a significant interaction between condition and baseline consumption on reported alcohol consumption, the women with higher levels of alcohol consumption who had been presented with positive trust cues reported greater levels of alcohol reduction than those presented with negative trust cues.

4 PERSUASIVE TECHNOLOGY AND WEB 2.0

So in web 1.0 the key to persuasion is credibility. Notions of credibility or trust (in its related active form) are highly dependent on design factors, at least initially. We also know that users are likely to treat computers in a social manner that is to treat the technology as if it was a real person [11]. Is this the case in web 2.0? Web 2.0 is a 2nd generation of web based communities and services such as social networking sites and blogs and aims to facilitate creativity, collaboration and sharing amongst users. The notion of Web 2.0 encompasses a vision of genuine interactivity in which web users are as actively engaged in creating and uploading information as they are downloading and reading web material. Here it appears to be the users themselves that are involved in persuading, rating and recommending so how does this play out in a health context?

People prefer information and advice that is targeted at and written by people like themselves. People viewing health websites are more likely to trust advice that comes from someone based in the same country or from someone who has a similar medical history or lifestyle [4]. Other people can act as powerful instruments of persuasion within health websites. Sillence et al [4] detail how one study participant was persuaded by an online account from a fellow hypertension sufferer to go back to his family doctor to have his medication altered

It also seems that people are far more likely to seek out and be persuaded by very like minded people. In a recent discourse analysis of a cancer support group we explored how participants manage to ask for and offer advice within a peer setting [12]. The support group have developed mechanisms for portraying their competence and trustworthiness and advice seekers seek out very like minded others to provide support for their pre-existing views, thus being more easily persuaded by people with similar views and developing elaborate ways of subtly disregarding information and advice that is not congenial with their way of thinking.

5 SUMMARY AND FUTURE WORK

Persuasive technologies are changing. The migration from the traditional top down approach of web 1.0 to the participant driven web 2.0 health sites has implications for the ways in which people will be persuaded to act upon the information and advice they read. In turn this will influence their health behaviour. A simple heuristic for users is that poor design is indicative of an untrustworthy website. Even the effects of this rule of thumb appear to be more subtle than first thought. Whilst design features can influence responses to health risk information the effects of these trust cues may be slow to manifest themselves influencing health behaviour only with time. With web 2.0 users themselves are the persuaders. They upload content, give advice and make recommendations. The ways in which people respond to health risk information and advice again appears to be complex with information processing styles coming into play. A user with a defensive processing strategy will not be open to persuasion from all sides of the debate. Understanding the ways in which these factors influence responses to information and ultimately health behaviour remains one of the most interesting and important challenges for persuasive technology.

With this in mind we are currently embarking upon a research plan which will explore a key issue associated with Web 2.0 that of patient experience. We already know that some studies have shown that anecdotal, narrative evidence increases perceptions of personal risk and intention to change behaviour [13]. However we still know little about the types of patient experience information that consumers prefer and the ways in which engagement with such material informs their decision making. Over the coming months we will be exploring a number of related questions which aim to increase our understanding of this aspect of Web 2.0 and health advice.

1. What cues do consumers use to guide their searches for patient experience material?
2. Which kinds of patient experience formats do consumers engage with?
3. How do consumers process patient experience material and how can we assess its impact upon decision making? How do they integrate this material with other sources of information e.g. doctors advice, friends and family?
4. To what extent does the processing stance of the consumer influence their preference for patient experience material over Web 1.0 style health advice?
5. What recommendations can we make for the provision and integration of patient experience material in an online environment?

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