

Disintermediating the PC: A Product Centric View on Web 2.0

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Abstract. In this position paper, we chart the internet's transition to Web 2.0 and the accompanying rise in user generated content. We trace back this transition to social needs: people's need for a sense of identity and a sense of belonging. We point out that working with digital content has become near impossible without the use of a PC: the PC has established itself as the 'spider in the web' of content capturing and rendering devices. We then argue that if we accept Web 2.0 leisure activities as a predominantly social phenomenon, these activities belong in the living room. However, for a number of reasons the PC is poorly suited to use in a living room context. As an alternative to a system configuration with centralized, PC-based control, we suggest that a network of dedicated, networked devices may be better suited to the home context.

Introduction

The internet is changing. Traditionally, websites provided a one directional stream of content from website owner to website visitor. In this model, website owners and visitors had distinct roles. Website owners had the more active role of creating or at least sourcing the content and putting it online, whilst the visitors had the more passive role of browsing and downloading this content. Today, however, the most popular sites implement bi-directional content streaming. In this model, users are no longer merely consumers of content, but have become producers as well. Users create content, share this content by publishing it online and react to each other's content.

The Rise in User Generated Content

Websites that build on the notion of user generated content come in many different forms. One of the most popular examples is of course the weblog or blog, websites with a diary-like structure in which the latest entries appear at the top of the page. Visitors can leave comments and start discussions around each of the entries.

On a professional level, many renowned news sites, amongst them CNN and BBC, are actively seeking user contributions such as eye witness reports and photographs.

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Some sites even rely solely on user contributions. Examples are the countless forums, amateur news sites (e.g. Skoeps.nl), photosites (e.g. Flickr) and video sites (e.g. YouTube). On all these, users share and discuss digital content, be it tips, news, photos or video. Even for encyclopedias that once required years of work by elitist teams of scientific editors, user generated alternatives such as Wikipedia now exist.

Social networking sites such as MySpace, Hyves, FaceBook, Friendster, LinkedIn and Orkut are also built from all kinds of user contributed, personal information. These sites emphasize the community aspects and the relationships between members.

The new metaverses (e.g. SecondLife, EntropiaUniverse)—virtual worlds in which users can live out alternative realities—follow a similar model, but executed in three dimensions. These worlds are the result of the collaborative efforts of many users who realize their own designs using the creative toolkits provided to them.

In hindsight, it is apparent that sites such as Amazon and IMDB were forerunners in working with user generated content. Much of their value stems from the user contributed reviews of books and movies. Many stores have copied this model, allowing customers to rate and comment on their services and products.

These examples, whilst not exhaustive, make clear that the concept of users creating, sharing and reacting to web content is now widespread. This concept comes under many monickers, including *Web 2.0*, *users as producers*, *random acts of journalism*, *the wisdom of the crowd* and *the rise of the pro-amateur*. Though not synonymous, they point in a similar direction. Consumers used to be at the receptive end of the content chain, with content creation and quality reviewing being the domain of professional movie studios, record labels, news agencies and publishers. These days, however, an increasing number of users is involved in creating and publishing content themselves, whilst collaborative filtering and rating helps to identify quality content.

Technological and Sociocultural Drivers

Web 2.0 is driven by both technological and sociocultural factors. From a technology point of view, most influential is perhaps the ubiquity of content capturing devices. Digital cameras and audio recorders which once were limited to the happy few are now in the hands of the masses. In fact, such capturing capabilities now often come as standard features of our mobiles, PDAs and laptops. It is not only that these capabilities are available cheaply, in many cases users simply cannot avoid buying them. As a result, users are readily equipped to capture content anywhere at anytime.

From a sociocultural point of view, people in Western society are increasingly free to shape their own lives as they are less and less impeded by state, church, societal taboos and family pressures. Though this freedom is usually seen as a gain, the obligation to make choices can, surprisingly, also be seen as a burden: one no longer has the freedom not to choose. It is argued that documenting their lives—including their needs, desires, values and opinions— allows people to reflect upon their individual life stories and reinforce their identities. This key aspiration behind user generated content, we refer to as re-affirmation.

A Sense of Identity, A Sense of Belonging

At Philips Design, we use this phrase to summarize what we feel is the essence of Web 2.0. The new developments on the web demonstrate people's need to tell stories to express themselves within virtual communities. By creating and sharing these digital narratives, people re-affirm their sense of identity. Reacting to and discussing each other's stories, enhances social cohesion within these virtual communities, thus creating a sense of belonging amongst community members. A sense of identity and a sense of belonging are mutually dependent. Expressing yourself without receiving feedback is disappointing, whilst reacting to the content of others requires you to expose your identity. Virtual communities can work at different scales and could be a family, a peer group, a neighbourhood or a social networking site.

PC: the spider in the content web

Not so long ago, content creation and consumption meant working with standalone devices. Today, processing digital content, regardless of medium, typically requires a PC. In the days of records, cassettes and CDs, listening to music was a matter of buying a carrier and a playing device. In the current era of file based music, however, listening to music is near impossible without a PC to download and organise playlists. With film-based photography, all amateur photographers needed to deal with was a camera, negatives and physical photoalbums or a slide projector. In these days of digital photography, a PC is needed to view, store, share and print photographs. A similar change has occurred in film and video. For digital video, PC-based editing software has replaced the use of multiple recorders and video-mixers. Communication has undergone comparable changes. Postcards and letters have been superseded by PC applications such as email, chatrooms and instant messaging.

The PC has thus become the spider in the web when it comes to working with digital content. The content capturing or rendering devices that once were central to the user experience are relegated to a role in which they are merely peripherals to the PC.

A Product Centric Web 2.0

It needs no saying that the PC's increasingly important role is viewed with concern by the consumer electronics industry. Part of this concern is of a strategic nature and beyond the scope of this article. Yet also from an user point of view, the use of a PC for leisure oriented Web 2.0 activities leaves much to be desired. Here we argue the need for accessing Web 2.0 functionality through elegant, dedicated devices, designed specifically for the home context

From a context point of view, the living room and kitchen are traditionally the favoured locations to socialize within the home. Yet for many consumers the PC's obtrusiveness makes it unwelcome in these spaces. Often, PCs are banned to the study or even a cupboard under the stairs. If PCs do get accepted within the living room it is

reluctantly. PCs are considered obtrusive not only for reasons of visual but also interaction aesthetics. The PC's office roots and productivity oriented interaction style remind consumers of work, strangely at odds with leisurely socializing and sharing. From a social standpoint, PCs were designed with a single user in mind and are therefore poorly suited to collaborative use. Though the appearance of PCs is improving, the issues surrounding interaction aesthetics are likely to be much harder to address.

In terms of usability, PCs are difficult to install and 'keep clean'. Here, the multipurposeness and flexibility of the PC, usually seen as its main advantages, at the same time form its Achilles heel. PCs—especially ones in communal use—tend to be in a continuous state of flux, which compromises the stability of the whole machine.

We already observed that socializing within online communities is highly popular. Whilst this need to 'show and tell' is universal, accessing online communities through the PC is often non-trivial and mainly for the tech-savvy. More inclusive design, in keeping with the Philips brand promise of sense and simplicity, could enable consumers who do not take to the PC to engage in story telling within virtual communities.

In terms of network technology, reliable Wi-Fi home networks are now commonplace with wireless hubs often installed as standard with new broadband subscriptions. There is no longer a need to run all tasks which require a network connection from the single machine which has the network cable plugged in. Applications could just as well be distributed over a family of dedicated, wireless devices.

Conclusion

There appear to be two main social drivers behind the rise in user generated content. With a sense of identity, we described people's need to express themselves using digital narratives. With a sense of belonging, we summarized how user generated content has become a vehicle to socialize within online communities. We then drew attention to the fact that in working with digital content, the PC has gained a central role. We argued that the natural place for Web 2.0 activities is the living room or the kitchen, as this is where socializing has traditionally taken place. We then explained how the PC is poorly suited to working with digital content in these contexts, for reasons of aesthetics, interaction style, maintainability and usability. Developments in wireless technology no longer require a centralized approach to digital content. Our future work will therefore concentrate on a distributed approach to networked devices which allow home users to enjoy Web 2.0 functionality without the use of a PC.

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