

Games Design Principles for Improving Social Web Applications

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Abstract. Most young people (at least in countries where social communication technologies are established from a long run) carry mobile devices, surf the Internet and download music. They are always connected and live in a world where the distinction between virtual and real fade. The design of new interfaces becomes, in this context, a complex activity that involves a series of methodological problems. To one side designers have to create interfaces using basic HCI principles, on the other side they have to merge them with others ICT principles able to support social aspects, bearing in mind that they are addressing the above described generation of younger. In our opinion that designers can find useful suggestion in game design strategies. Looking at games interface design choices, in fact, can help software engineers to improve the usability of other types of - more conventional - applications. In order to demonstrate this we will compare two social web applications: the new Facebook website and a French online game, Hordes.

Keywords: Game Design, HCI, Social Interaction.

1 The Current Zeitgeist: Why We Have to Rethink Web Applications Design

Claiming that technological changes cause cultural changes - and the other way round: cultural changes cause the arising of new technologies - is not an original statement. In particular, we can notice that the current *Zeitgeist* (the spirit of the age and its society) is related to the social use of communication technologies. This is not a surprising finding, either. Long since we have always been connected to the Internet, we used laptops, cell phones with text messaging, consoles with integrated communication capabilities, and any other digital technology that allow us to instantly communicate with the rest of the world.

But if we look more in depth in the current *Zeitgeist*, we realize that we have to modify our way of thinking about cultural changes.

As Peter Sondergaard says in his introduction to [1], since two decades we have catalogued and defined peoples' behaviors using age based models.

Postwar generated "Baby Boomers", born between '50 and '60, followed by "generation X"[12] people, born between 1961 and 1981. Next came the "generation

Y”¹, that include people born between 1981 and 2000. However this way of partitioning generations doesn’t work anymore. *Digital natives* [2] cannot be defined only through vital statistics, but through a set of characteristics and common experiences. Most young people in many societies (at least in countries where social communication technologies are established from a long run) carry mobile devices, surf the Internet and download music. They are always connected, with a preference for multitasking, and using technology in new ways. For instance they use technologies for staying always in touch with friends through Instant Messaging services like Messenger and Skype, for finding old friends lost over time (Facebook), for sharing any kind of material (e.g., using Flickr and YouTube), and so on. This “generation” explore the world in an entirely new way as they interact with these technologies: they live in a world where the distinction between virtual and real fade.

As Palfrey and Gasser claim, *digital natives* “are connected to one another by a common culture. Major aspects of their lives- social interaction, friendships, civic activities – are mediated by digital technologies. And they’ve never known any other way of life.” [3]. We can say that *digital natives* are characterized by a set of common practices, including the amount of time they spend using digital technologies, rather than by their age.

However, being familiar with these technologies doesn’t necessarily implies a deep understand of the used technologies nor implies the desire to understand them. In fact, for *digital natives* Internet and cell phones are “goods” as for other generations were Radio and TV.

What this scenario imply for interface design?

As for the previous generations, the User Interface *digital natives* use influences significantly their impression of any application. However, in our opinion that, because of the pervasive role digital technologies (consoles, internet games, mobile devices, social networks) play in the early life of digital natives, the user interface they are used to see and interact with in these early moments influence their expectations about the interface of any other application they will eventually interact with.

Studies at the Pew Internet & American Life Project [4] show that virtually all college students play video, computer or Internet games and 73% of teens do so (as a result, for example, they become accustomed with a style of learning that takes place informally[13]). This game adoption rate (and its consequences) is, in our opinion, of crucial relevance in order to understand new users expectations. For example, observing that players become frustrated or confused if interfaces don’t give them the right feedback and the right amount of control, we claim that new generation of users (that are often, as we have already said, technologically literate, but that does not necessarily are media literate) feel frustrated if they don’t have the right amount of control over their computer-use experience.

The design of users interfaces becomes then -more than before because of the above described scenario- a complex activity. In fact, on the one side designers have to create interfaces using basic HCI principles -mostly applied to single human-machine interaction, on the other side, they have to merge them with others ICT

¹ Generation Y is a cohort which consists of those people born after the Generation X cohort. Its name is controversial and is synonymous with several alternative names including The Net Generation, Millennials, Echo Boomers, and iGeneration.

principles, able to support social aspects. It is our opinion that, designers of social interactive systems, as social web applications are, can find some useful suggestion in game design strategies. In fact, we believe that looking at games interface design choices can help software engineers to find useful guidelines for addressing interaction problems (as we will show in par.2) and for improving the usability of other types of (more conventional) applications.

1.1 Game Design and HCI

Firstly it is worth recognizing that most of the applications used by digital natives in the above described scenario well fit in the framework of computer-mediated human interaction (i.e. the design of human-computer interfaces that will be used for social interaction). We can think, for example, to social networking software applications in web environments (Facebook, MySpace, and the like – Facebook is also accessible through cell phone), but also to consoles (Windows Xbox live community, Nintendo Wii and Mii channels, and PlayStation Home). Finally, online collaborative game play (e.g. *Everquest* and *World of Warcraft*) has increased dramatically over the last five to ten years with the growth of usage of the internet. The phenomenon has led to over 4 million users of *Everquest* worldwide and 6 million users of *World of Warcraft*. [5]

Because of the focus on user performance and user satisfaction, a lot of interesting ideas about new ways of “communication” between users and interfaces arose in games in order to fulfill users expectations.

Game designers face the challenge of creating games that can be easily learned, effectively played, and emotionally enjoyed by gamers (otherwise the game will not sell). As Ye and Ye claim in [6] no guidelines or well founded principles have been established to help game designers do their work. With limited theoretical foundations and little research or data on gamers, they have to mainly rely on their intuition and experience in order to find solution to their problems. Most of these solutions, are practical, non conceptualized, solutions, which, however, fit perfectly into HCI principles. Moreover, they are more appealing for new generations because of their *look and feel*.

Without any ambition of completeness, we believe worth considering the following basic criteria used in game design:

1. *Ease the learning curve*. Players - as users often do in other settings - do not read the manual, so game designers have developed a quite sophisticated approach to ease the learning curve of a game (and appeal to a more casual gamer). On the one hand, they present the basic instructions as part of the game, on the other hand, they hide instructions in the interface itself, making them available on demand.
2. *Support modifications of the UI*. Game designers enable the gamers to modify and extend their UI and consider this possibility a fundamental feature of the system. For instance, most games allow the player to disable interface features in order to increase the size of the action window.
3. *Avoiding information overload*. Presenting too much information and features to the players all at once causes many players to give up on a game. So, quite often, designers hide non-essential information in places that the player can access when

needed. Since the interface is part of the feedback mechanism, they make sure that the players cannot only access information they need –only when they need it - but also that the information they receive is useful.[7]

In this paper we use the above mentioned criteria to analyze help facilities in web environments, comparing them with help facilities in games environments. In particular, we focus on metalinguistic signs[8]- signs that communicate a message about the use of the application itself - and we analyze in which way these signs in existing websites can be improved using games interfaces ideas.

In particular, we consider the new Facebook (www.facebook.com) interface and the interface of a French online game, Hordes (www.hordes.fr).

This choice is due to the fact that both of them - in different ways - can be seen as social web applications, i.e., applications characterized by dynamic public content that changes on the basis of the input of many people. Facebook private home pages are exactly this. In fact, each homepage is the result of friends posts, comments, and others kinds of inputs (video, links, and so on). In the same way, each game session in Hordes is the sum of the dynamic “real” game part, plus the overall discussions about strategies (we will explain this more in depth in par.4).

1.2 Contextual Help in an Online Social Networking Site: Facebook

Facebook is a popular social networking website that is owned by Facebook, Inc. People can add friends, send them messages, and update their personal profile to notify friends about themselves. The website currently has more than 150 million active users worldwide [9].

Facebook has a number of features for people to interact with. They include the Wall, a space on everyone profile page that allows friends to post messages for the user to see; Photos, where participants can upload albums and photos; Status, which allows people to inform their friends of their whereabouts and actions, and so on. On September 2006, a new feature, News Feed, was introduced, which appears on everyone homepage and highlights information including profile changes, upcoming events, and birthdays related to the user's friends. Initially, the News Feed caused dissatisfaction among Facebook users: most of them were concerned it made it too easy for other people to track down individual activities (such as changes in relationship status, events, and conversations with other users)[10]. In response to this dissatisfaction, developers included appropriate customizable privacy features. Since then, users have been able to control, in all the Facebook applications, what types of information they want to share with friends.[11]

Bearing in mind the above mentioned games design principles, we can claim that this experience demonstrate that Facebook designers understood that people need multiple levels of detail and personalization in their applications (the second principle) and let people customize their interface.

On July 2008, Facebook introduced "Facebook Beta", a redesign of the user interface (one for all: profiles were separated into tabbed sections, and an effort was made to create a "cleaner" look). This upgrade can also be seen as another attempt to give users a (little) more customizable interface. However if we look at the way Facebook implemented in this occasion the help facilities (essential for the transition from the old to the new interface), we find that these feature are totally unaware of the

concept of different level of details. In fact, the developers used a main (textual, static) help (Fig.1) where the users can find what they need by search (however, the link to the help is well hidden in the bottom of the page). Moreover, for a short amount of time, a set of contextual (textual and static) little windows of helps have been available for the new added features (Fig.2). Contextual help can only be closed, but not being opened again if closed by accident.

In this way developers not only were not able to lower the learning curve – the first criteria we listed - but they also weren't coherent in their design choices. While they succeeded in avoiding the information overload, they failed providing the right amount of information. New users' first impression of Facebook was of a complicated service with a complex interface.

1.3 Contextual Help in an Online Game: Hordes

The principles we listed in par.2 were draw basing on “classical” games, with a dedicated client. But what happens to these principles when the client is the web browser? We will try to understand it through the analysis of a website game, Hordes.

Hordes is a game create by Motion Twin, a provider of online games for the French-speaking public. Created in 2001, Motion Twin has 7 million accounts, divided into more than 40 casual minigames, a word game, a RPG, a multiplayer online portal, an arcade platform game, and so on[14].

The game is a strategic game played entirely in a browser. However, unlike the majority of web sites games, Hordes is a social game, where everything depends on the relationship each gamer establishes with other players.

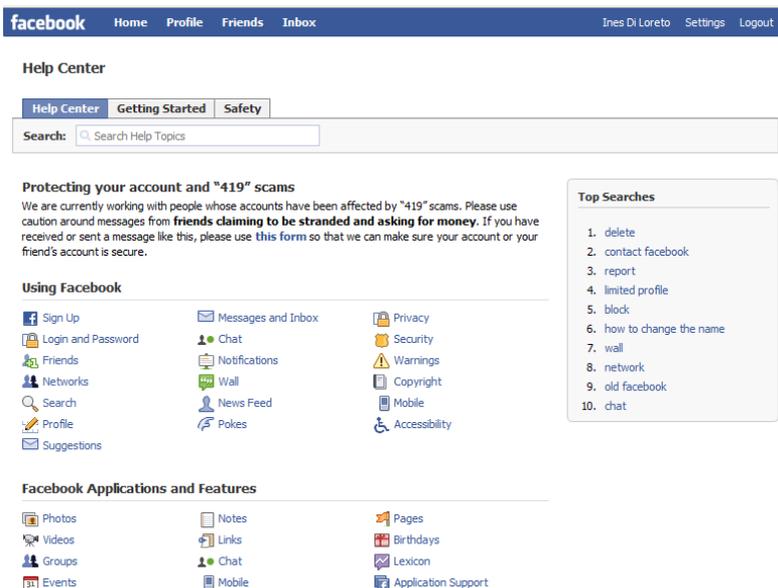


Fig. 1. Classical help in Facebook

The image shows a screenshot of a Facebook profile page for 'Ines Di Loreto'. The page layout includes a top navigation bar with 'facebook', 'Home', 'Profile', 'Friends', 'Inbox', and user options 'Ines Di Loreto', 'Settings', and 'Logout'. The profile header features a profile picture, the name 'Ines Di Loreto', and tabs for 'Wall', 'Info', and 'Photos'. A yellow banner below the header reads 'Welcome to your new profile. Click on the yellow highlights to learn about new features.' with a 'Close' button. Below this is a 'The Publisher' dropdown menu. The main content area has a post creation box with a URL field containing 'http://', a 'Preview' button, and a 'Wall Filters' dropdown menu. The post feed shows several quiz posts from 'Ines' with timestamps and 'Comment' links. On the left sidebar, there are sections for 'Basic Information' (Italy, Università degli Studi di Milano) and 'Friends' (30 friends, See All).

Fig. 2. Interactive help in Facebook

In a few words, Hordes is a game of survival in a world invaded by zombies. The main goal is to take the city you are living in as long as possible, constructing various buildings and defenses to deal with zombies attacks.

By registering, the player joins a town of 40 players (the great majority of the players don't know each other). To maintain the town as long as possible, players must learn to cohabit and to aim towards a common goal. In order to organize themselves, citizens can use a set of tools. The most important one is a forum where every player can freely post. It's very interesting to note that the town's forum reflect different social behavior: some of the players (without a top-down decision or an election) candidate himself as major, deciding the objectives of the town; others refuse the authority; others again report negative actions of the neighbors, and so on.

In this case we are talking about a particular social application -an online game- where a set of features are given to the users in order to accomplish their task (play and chat with others). The set of features developers give to the players are not so innovative (but for an interactive map of the city and of the environment, where all the players are showed), and the interface doesn't offers personalization features. However they found an interesting solution to the problem of the help. They used a main (textual, static) help (Fig.3), with a list of the more frequently asked questions. Moreover, they created also a dynamic step-by-step contextual help (Fig. 4) that can be easily reached every time the user wants and needs (if closed it can be easily opened again).



Fig. 3. Classical help in Hordes

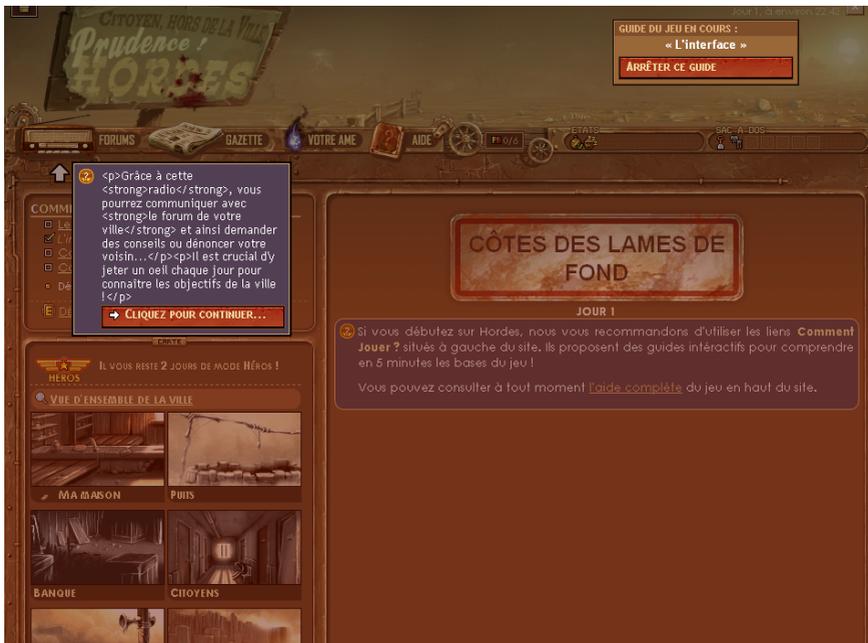


Fig. 4. Interactive help in Hordes

In this case the designers well understood they have to avoid information overload, and they also eased the learning curve. However, they didn't provide a sufficient level of personalization: e.g., not all the players use the supplied tools, while several of

them prefer external applications created by other players. This result in various web-browser tab opened at the same time, and the user have to switch between them while playing. The integration of external application into the game would be an interesting upgrade in the direction of personalization.

2 Conclusions

While it is true that the main purpose of an interface - either for a social networking software, a game, or any other kind of application - is to allow users to communicate with the software[8], we cannot forget that for the kind of applications we are analyzing the main purpose is the communication between peoples, so the interface have to dissolve[15]. With a view on what we have just said, both of the sites developers have to learn something from the game design principles we described in par.2. It is also evident from the analysis, that the use of a web browser as client doesn't allows a straightforward application of game design practical solutions, but require further elaboration.

Finally, from this analysis and comparison, we want now draw some considerations on "good practice" in web applications design. First we suggest that designers have to *take into account the de facto standards* used in interfaces adopted by members of social groups that can become future lead users.

Second, designers cannot forget the HCI assumption *that the functioning of a technology have to be self-evident*. In order to do this, designers have to provide multiple levels of detail, at increasing depth of complexity, allowing people to choose the features they need. More in general, we claim for the re-use of some solution and features developed in games design (as seen in par.2), in order to improve social web applications usability.

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