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Best Practices of WEB 2.0

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***Abstract* - In this paper the author describes about what is Web 2.0, how It evolves from Web 1.0, differences between Web 1.0, 2.0 and 3.0 and how we can use Web 2.0 in best practice manner. The author analyses how Web 2.0 can be used in Web Personalization and site structure. There is considerable excitement about the notion of 'Web 2.0', particularly among Internet business people. In contrast, there is an almost complete lack of formal literature on the topic. It is important that movements with such energy and potential be subjected to critical attention, and that industry and social commentators have the opportunity to draw on the eCommerce research literature in formulating their views. The author assesses the available information about Web 2.0, with a view to stimulating further work that applies existing theories, proposes new ones, observes and measures phenomena, and tests the theories. The primary interpretation of the concept derives from marketers, but the complementary technical and communitarian perspectives are also considered. A common theme derived from the analysis is that of 'syndication' of content, advertising, storage, effort and identity.**

***Keywords* - Web, AJAX, RSS, Modeling, Personalisation.**

I. INTRODUCTION

As the Web usage continues to grow, users expect WebApps to be more mature with regard to the functionalities and contents delivered for their intended tasks at hand. Moreover users expect these functions and contents be relevant, accurate, suitable, usable, secure, personalised, and ultimately with perceived quality. Despite the major breakthrough in Web methods and technologies there are some Web Engineering branches still in their infancy: Modelling of quality requirements at different lifecycle stages is one of them. In this paper we propose, based on related research literature and a bunch of ideas published in, an integrated approach to specify quality requirements for contents and functionalities to WebApps. WebApps were conceived as content-oriented artefacts from the very beginning. Few years later, Websites started to provide not only contents but software-like functionalities and services as well. Since then, WebApps have at a fast pace emerged for many different sectors as e-commerce, e-learning, e-entertainment, and so forth. After that era named Web 1.0, a recent era that considers a set of strategies and technologies focusing on social networking, collaboration, integration, personalization, etc. is emerging – currently called Web 2.0. We argue that WebApps will continue being centered on functionalities, services and contents independently of the new technologies and collaboration strategies. However, as aforementioned a challenging issue still is how to specify and assess the quality and the quality in use of WebApps since their intrinsic nature will continue being both content and function oriented. In the present work, by reusing and extending the ISO 9126-1 quality representation, we discuss how to model internal, external quality, and quality in use views taking into account the previous concern. Particularly, we thoroughly discuss the modeling of the content characteristic for evaluating the quality of information – so critical for the whole WebApp eras.

II. WEB 2.0 – AN OVERVIEW

The concept of “Web 2.0” was born in the first Web 2.0 Conference organized by O’Reilly and MediaLive International in 2004. The concept was further elaborated in the article “ What is Web 2.0 Design Patterns and Business Models for the Next generation of Software” published by Tim O’Reilly in 2005. Generally, Web 2.0 denotes the paradigm of employing the Web as the platform to deliver and use software. Nevertheless, what user experiences, design patterns and technologies Web 2.0 actually encompasses are not concretely bound and they keep evolving. As described in Wikipedia, “Given the lack of set standards as to what ‘Web 2.0’ actually means, implies, or requires, the term can mean radically different things to different people.” Web 2.0 is a set of internet services and practices that give a voice to individual users. Such services thereby encourage internet users to participate in various communities of knowledge building and knowledge sharing. This has been made possible by the ever-extending reach of the (world wide) 'web'. Meanwhile, navigating and exploring this web of knowledge has been greatly facilitated by the increased functionality of the web 'browser'. The browser has thereby become the network reading/display tool that offers a universal point of engagement with the Web. More than that it has become a platform for using a wide range of digital tools and taking part in a wide range of community interactions. But why '2.0'? An explanation comes from the common practice of technology versioning where decimalised numbers are appended to the names of an evolving software application: as in 'mygame 2.1'. By convention, changes in the integer part attached to the name of a program signal major evolutions in its design or implementation. Changes in this decimal part (from '0' upwards) signal refinements within those steps. It is this that prompts the contemporary allusion to 'Web 2.0'.

III. EVOLUTION FROM WEB 1.0 TO WEB 2.0

As companies increasingly rely upon their Web sites to contribute to top-line revenues and maintain brand loyalty, they are finding that sophisticated site functionality and fresh Web site content are critical to maintaining

consumer interest and encouraging return visits. Fortunately, today's Web site technologies support these objectives. For example, in an April 2006 eMarketer survey, 27% of U.S. online retailers said they plan to implement interactive tools and 41% intend to use personalization on their sites.

A brief look at the evolution of the delivery of content to distributed users provides insight into the reasons that today's Web sites offer a new level of interaction between businesses and consumers. In the 1980s, enterprises relied upon the client/server model to deliver rich content to users. A fat-client GUI played a key role in the consumption of this content. While successful in its own right, this model required a significant investment in administration and infrastructure maintenance. With the advent of the Internet in the 1990s, organizations could deliver content to a broader audience without these time-consuming and costly maintenance requirements. While the Web interface essentially served as a thin client, the ability to deliver rich content was still limited by Web technologies, Web browser functionality, and end user access speeds. The result is that yesterday's Web sites were mainly composed of static content that rarely changed—each site visitor was largely a passive consumer looking for information.

A closer look at the Yahoo! site offers insight into the evolution of Web content. The original home page, launched in 1994, was little more than a directory listing of hyperlinks. Web visitors would click on the links and read the page content-that was the extent of their online experience. Today's Web sites, comprising a mix of static and dynamic content, are more dynamic and richer in nature, allowing site visitors to increasingly interact with site content, as evidenced by Yahoo!'s newest design, unveiled in May 2006 (see figure 1). The directory listing is now one of multiple tabs at the top of the page. In addition to browsing everything from news to video, users have access to localized and personalized services such as Yahoo! Messenger, Yahoo! Mail, and Yahoo! Movies.

IV. Differences Between Web 1.0 2.0 3.0

Web 1.0: The Internet before 1999, experts call it Read-Only era. The average internet user's role was limited only to reading the information presented to him. The best examples are millions of static websites which mushroomed during the.com boom. There was no active communication or information flow from consumer of the information to producer of the information.

Web 2.0: The lack of active interaction of common user with the web lead to the birth of Web 2.0. The year 1999 marked the beginning of a Read-Write-Publish era with notable contributions from LiveJournal (Launched in April, 1999) and Blogger (Launched in August, 1999). Now even a non-technical user can actively interact & contribute to the web using different blog platforms. This era empowered the common user with a few new concepts viz. Blog, Social-Media & Video-Streaming. Publishing your content is only a few clicks away! Few remarkable developments of Web 2.0 are Twitter, YouTube, eZineArticles, Flickr and Facebook.

Web 3.0: It seems we have everything whatever we had wished for in Web 2.0, but it is way behind when it comes to intelligence. Perhaps a six year old child has a better analytical abilities than the existing search technologies! Keyword based search of web 2.0 resulted in an information overload. The following attributes are going to be a part of Web 3.0:

- contextual Search
- Tailor made Search
- Personalized Search
- Evolution of 3D Web
- Deductive Reasoning

Other features of web 3.0

* It will be more portable and personal.
* More focused on the preferences of individuals
* Advertising oriented.
* Widgets with drag and drop facilities.
* Dynamic content.
* User behavior, user engagement etc.

V. Impacts of Web 2.0

Taken together, these developments in Web 2.0 create four broad forms of impact, which can be summarised as:

- Inquiry
- Literacies
- Collaboration
- Publication.

On the more cognitive side, Web 2.0 invites users to develop confidence in new modes of inquiry and new forms of literacy. Web 2.0 users must acquire the skills that are necessary to navigate and interrogate this new knowledge space. They must also become literate in digital formats for expression: formats that go beyond the familiar medium of print. On the more social side, effective Web 2.0 users must be comfortable with collaborative modes of engagement. They must also welcome new opportunities for publication on the internet and the audience attention that this entails.

To support these activities, a range of new internet tools have emerged. Most of them exist as web-based services that are accessible through a traditional browser. Most of them are also free to use. These tools have stimulated considerable growth in young people's recreational use of the internet. Much of this has been concentrated on gaming, communication, and shaping online spaces for the expression of personal identity.

Online games with this Web 2.0 flavour allow the internet to coordinate the actions of geographically separated players. Interest in network communication has concentrated on text-based chat systems. While the celebration of personal identity has been through so-called 'social networking' sites, within which users can develop an online biography and discussion space to be shared with selected friends. Some of these uses inevitably are a source of concern in relation to the protection of young people from predatory contacts or from reckless commercial marketing.

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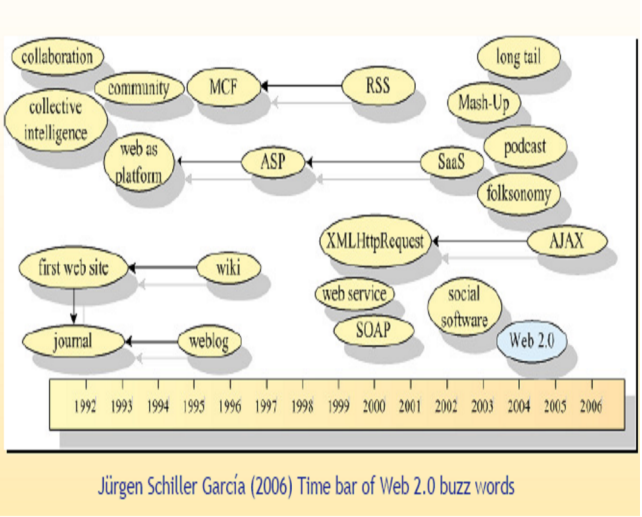
V. FEATURES OF WEB 2.0

Despite its fuzzy definition, Web 2.0 also has a number of features that have gained general acceptance. Here these features are classified into the following two aspects: (1) social / business aspect and (2) technology aspect. The new technology model supports the new social / business model in this new Internet age. The Table explains that web 2.0 in user behaiour and software design aspect.

User behavior aspect	Architecture of participation
	Personalization of web resources
	Power of the *Long Tail*
Software design aspect	Deployment of rich applications
	Perpetual beta release
	Syndication of information and services

VII. PERSONALIZATION IN WEB 2.0

In the Web 1.0 model, web resources, i.e. information and services provided on the web, are delivered on websites in the format decided by the service providers. Users are given limited flexibility to select what web resources to consume and how they are well presented to meet the needs and preferences of specific users. In the Web 2.0 model, users play the active role to manage web resources that are only relevant to their needs. Feed readers, such as Google Reader and Bloglines, allow users to subscribe the web feeds relevant to individuals' interests, and organize and navigate the feeds in users' preferred ways. My Yahoo! offers personalized homepages to users for placing regularly used web services (e.g. stock quotes, weather information) on a page. In Web 2.0, users need not follow the navigation structures pre-designed for all users by service providers. The figure represents that collaboration of web 2.0 with RSS, AJAX, ASP and XML.



Jürgen Schiller García (2006) Time bar of Web 2.0 buzz words

VIII. WEB PERSONALIZATION

A growing number of websites are recognizing the value of personalization based on a user's context and social network. As more websites become personalized, the resulting experience for users can be rather fragmented. We aim to facilitate a seamless Web personalization experience across websites by enabling personalization to take place at the client and thus allowing personal information about people to reside locally with people. If websites are to script a personalization experience that draws on information held by the user, it is imperative that this information be easily comprehensible by heterogeneous websites. In this paper, we demonstrate how Semantic Web technologies can be used to realize a vision of client-side Web personalization. The contribution of this paper is an architecture that demonstrates the feasibility of our approach and a prototype implementation that establishes its viability. A common perception is that there are two competing visions for the future evolution of the Web: the Semantic Web and Web 2.0. A closer look, though, reveals that the core technologies and concerns of these two approaches are complementary and that each field can and must draw from the other's strengths. We believe that future Web applications will retain the Web 2.0 focus on community and usability, while drawing on Semantic Web infrastructure to facilitate mashup-like information sharing. However, there are several open issues that must be addressed before such applications can become commonplace. In this paper, we outline a semantic weblogs scenario that illustrates the potential for combining Web 2.0 and Semantic Web technologies, while highlighting the unresolved issues that impede its realization. Nevertheless, we believe that the scenario can be realized in the short-term. We point to recent progress made in resolving each of the issues as well as future research directions for each of the communities.

IX. WEB 2.0 IN E-LEARNING

The traditional approach to e-learning (e-learning 1.0) has been to use a virtual learning environment for content delivery and consumption by students – an approach often driven by the needs of the institution rather than the learner. The experience of e-learning for many has been no more than a hand-out published online, coupled with a simple multiplechoice quiz. Hardly inspiring, let alone empowering. The emergence of new tools and services are facilitating knowledge creation, management, sharing and dissemination.

In moving to e-learning 2.0 there is greater emphasis on creation, collaboration and communication. …e-learning has developed from a state of 'automation' (putting 'static' courses online) to one of 'innovation'...We are moving into a new era of sharing content, collaborating and syndicating learning materials online. This is not just about learning content but about developing new ways of learning.

X. BEYOND WEB 2.0

By going beyond Web 2.0, to draw connections to other application types, such as P2P and Skype, and analyze the impact of wider adoption of Web 2.0 paradigms. Implicit Social Applications. Skype, which offers voice calling over the Internet, now has over 80M users globally, and is constantly adding new features (conference calls, voice mail). There is no reason not to think of it as a social network that allows people to exchange voice bits and text and form a community of interest (call list). As such, it can be modeled and viewed through the same lens as the Web2 sites which we present in this paper, and many of the same questions apply (some initial measurements are in. It differs from other examples we have identified in the main content (voice conversations) and hence the volume of bits involved. Peer-to-peer and Web 2.0. A P2P peer who supplies content of interest is not be a friend in the social networking sense. Friends in real life may share interests in similar content (books, music etc.) but often they share pointers in the form of recommendations. In the P2P sense, friends in real life act as .torrent files. There may well be interest in consuming the bits simultaneously and interacting as people do now over the phone while watching a sports event.

The Web 2.0 Electronic Fence. Web 2.0 can bring balkanization—people in one social network may not communicate frequently with some of their friends who spend more time on other social networks. Artificial separation into tribes is encouraged by some of the Web2 sites who want to maximize and retain the set of members inside their "electronic fence". However, there is a counter-current due to the prevalent link-based nature of the Web—users will constantly link to sites outside the fence. This will be sufficient to prevent complete balkanization. More sites are inviting users to "add friends", but there are only so many times that a user wants to find which of their friends on the same site. If this is not necessary to use the site, then users can ignore this, or use a 'bugmenot' equivalent. But for some sites (such as Facebook), all value comes from connecting to friends. Sites currently offer the highly dubious (in terms of both security and accuracy) technique of users sharing their email addressbooks in order to find contacts via email address matching. One proposal is to allow users to record their "social graph" (encoded in XML formats such as FOAF) once, and allow different sites to access this information, essentially linking up all the currently isolated graphs (the MySpace graph, the Facebook graph, the Flickr graph). More insidiously, 3rd party sites can tap into a user's social connection via open APIs and cookie-sharing agreements with a Web 2.0 site acting as an identity manager, akin to a widened notion of the Microsoft Passport.

XI. CONCLUSION

The author concludes that most WebApps, besides the increasing support to functionalities and services will continue aiming at showing and delivering content. This basic feature stemming from the early Web 1.0 applications is currently empowered by the Web 2.0 and follow-on applications. Web 2.0 applications rely strongly on actual users sharing, collaborating and performing content tasks in real contexts of use. So evaluating the quality of WebApps is still a challenge.

In the present work, we have proposed how to specify quality requirements for functionalities, services and content for WebApps employing an integrated approach. By reusing and extending the ISO 9126-1 quality models' characteristics, we have discussed the need of modeling and adding the content characteristic for evaluating the quality of information. Specifically, we have argued that the internal and external quality models with the set of six characteristics, i.e. functionality, usability, reliability, efficiency, maintainability and portability, and their subcharacteristics respectively, are not sufficient to specify WebApps' information quality requirements. As a consequence, we have proposed to include in both models the content characteristic and its subcharacteristics. Besides, from the quality in use perspective, we have proposed to use the same ISO model. Ultimately, we have tried to give a minimalist and systematic solution to the current concern which is how to identify and model WebApps' quality and quality in use requirements at different lifecycle stages.

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