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“Overview on Web 2.0 and Social Software”

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Management Summary

Web 2.0 and Social Software are two buzzwords frequently mentioned in the context of the internet and electronic commerce. This paper attempts to outline and describe both terms. By briefly looking at the patterns of change in private and commercial internet usage, we provide illustrations for a shift in conceptual design and online technology that can generally be labeled as Web 2.0.

The concepts behind Web 2.0 and Social Software aim at deploying the internet in new ways that define a new set of core competencies for internet companies and transform the online behavior of users who become increasingly involved in generating content themselves. Understanding these principles may provide interesting strategic insights and competitive advantage for firms.

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1 Introduction

The term Web 2.0 was initially coined in 2004 and attempts to capture the shift in user behaviour and corporate activity on the internet. To be clear, there is no definition available as to what precisely Web 2.0 means. The number of scientific sources on the topic is close to zero whereas public press contributions exist in abundance. Opponents consider Web 2.0 a massive hype built around empty phrases because the technologies and principles Web 2.0 supporters refer to have already been introduced and debated a while ago.¹ Nonetheless, a few papers and real world case studies give rise to the idea of certain core competencies that provide commercial leverage for companies that have adopted business models or technologies that qualify them to be pioneers of a new kind of electronic commerce.²

Building on a paper issued by O'Reilly, Web 2.0 should be interpreted in the following fashion: Web 2.0 is as a verbal container that comprises a set of ideas and concepts like user empowerment, social software etc. as well as a bundle of technologies like Ajax, RSS, etc. Web 2.0 may offers no clear-cut definition but regarding it as a "gravitational core"³ of these ideas appears as a favourable approach to this issue. Foremost, Web 2.0 has provided an impulse for a reconsideration of the potential that is inherent in the internet and, as a consequence, a fundamental reconstruction of online business models. With respect to wording matters, the suffix 2.0 misleadingly indicates the relaunch of a software product – however, Web 2.0 is neither a single technology, nor revolutionary software.

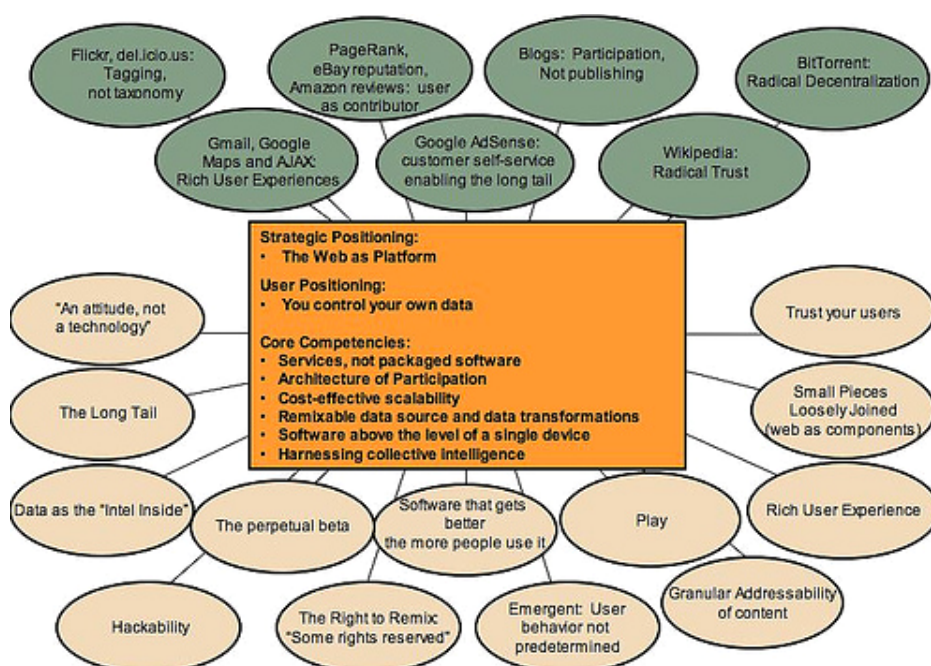


Figure 1: Ideas radiating from Web 2.0 (© by O'Reilly)

Web 2.0 does not imply an internet revolution but encompasses the observation that the very structures of web usage have been transformed, complemented and enriched.

¹ See Roth, W. (2006), p. 1

² See Duscha et al. (2007), pp. 44-45

³ See O'Reilly, J. (2005), p. 2

Technologies like Ajax and the idea behind concepts like social software disperse increasingly as technological restrictions gradually vanish. In general, connecting to the internet has become less costly but more convenient because fast broadband connections allow for much more data to be downloaded at an acceptable speed. Users have become more familiar with using the internet and are beginning to add online content themselves. More than 84 percent of international web experts agreed that the interactivity of the internet has grown significantly and is increasingly penetrating social life. A few examples should help to illustrate this change.

Online networks like MySpace, Facebook or the web encyclopaedia Wikipedia, which is jointly edited by millions of users, have framed the terms social web and social software. Social software refers to software systems that support the communication, interaction and cooperation between individuals. Essentially, social software channels the contributions of individual users into the creation of incremental value for all participants. Online retailer Amazon's awareness for user added value has helped them to improve their business: Peer reviews on the products offered by Amazon increase the transparency for yet undecided potential buyers and provided a degree of convenience and trust other internet vendors could not deliver.

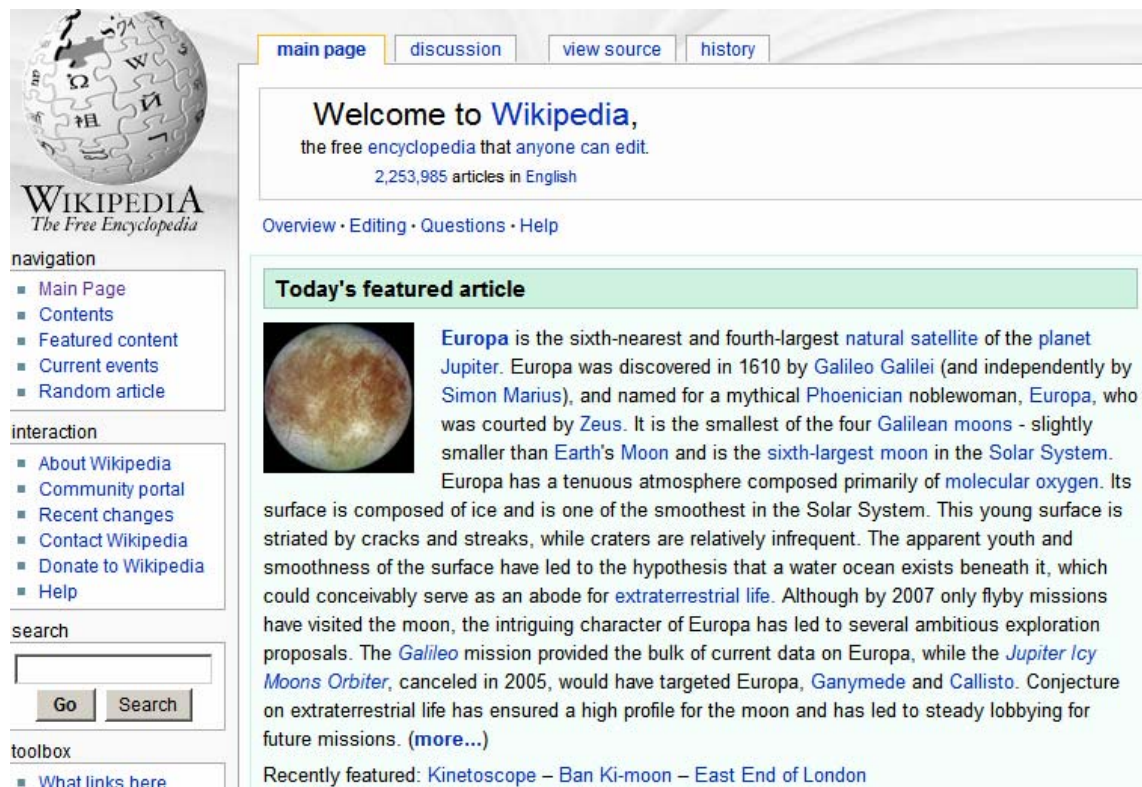


Figure 2: Online encyclopaedia Wikipedia

Along with the increased user activity appears a shift in the way pure internet and traditional companies design their web appearances and functionalities. An important notion here is that successful companies reach out to the long tail of the internet, meaning the large bulk of smaller pages the WWW consists of. Google AdSense that places advertisements on pages according to the content that is displayed is an excellent example. By extending advertisement to smaller websites they are able to present their ads to a larger number of visitors than advertisers that only implement ads on highly visited sites. In a similar vein, eBay exploits this observation. By offering an open platform for the supply and demand they get a share in transactions from mainstream

products like iPods to niche goods that would otherwise be hard to sell. The lesson is that websites should be designed to penetrate the WWW and reach out to this so called long tail.

Briefly said, Web 2.0 attempts to put a label on the emerging phenomena social software, reaching out to the long tail and many other concepts that aim at using the full potential of the internet by creating services that leverage internet architecture, user participation, openness, platform design etc. Below, we provide a brief outline of the key concepts from the O'Reilly paper on Web 2.0 and illustrate them with examples.

2 Web 2.0 Concepts

2.1 The Long Tail

Small sites make up the bulk of the internet's content; narrow niches make up the bulk of internet's the possible applications. *Therefore:* Leverage customer-self service and algorithmic data management to reach out to the entire web, to the edges and not just the centre, to the long tail and not just the head. Example: Google AdSense places ads on any website, regardless of the traffic it generates, if only the administrator signs up for the service.

Figure 3: Google AdSense

2.2 Data is the Next Intel Inside

Applications are increasingly data-driven. *Therefore:* For competitive advantage, seek to own a unique, hard-to-recreate source of data. Example: NavTeq is the single source of data for providers of routing services, e.g. maps.yahoo.com, maps.msn.com, or maps.google.com!

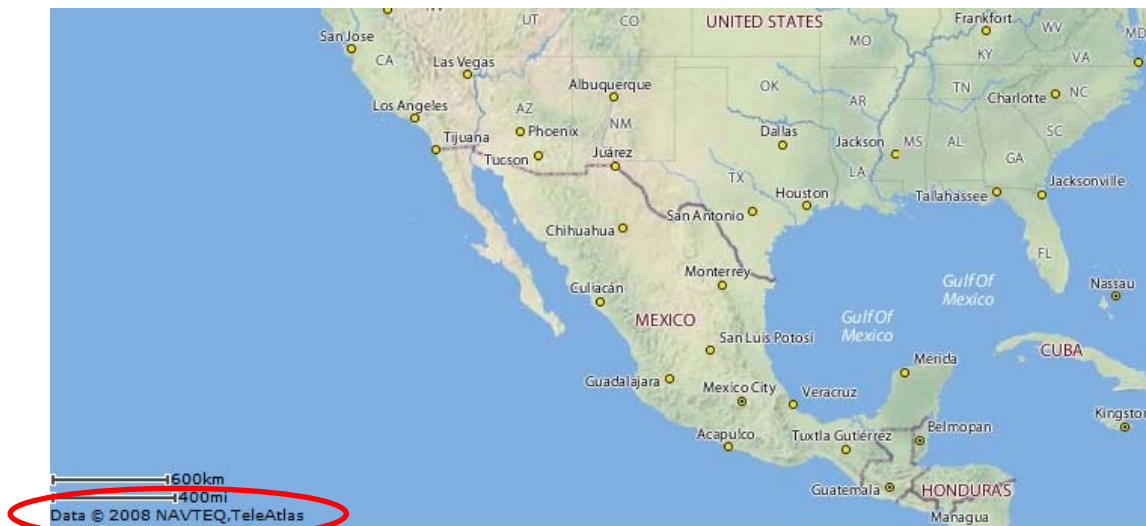


Figure 4: NavTeq copyright on maps.yahoo.com

2.3 Users Add Value

The key to competitive advantage in internet applications is the extent to which users add their own data to that which you provide. *Therefore*: Don't restrict your "architecture of participation" to software development. Involve your users both implicitly and explicitly in adding value to your application. Example: Amazon incorporates customer reviews to improve the quality of their online offers.



Figure 5: Amazon product site with customer reviews

2.4 The Perpetual Beta

When devices and programs are connected to the internet, applications are no longer software artefacts, they are ongoing services. *Therefore*: Don't package up new features into monolithic releases, but instead add them on a regular basis as part of the normal user experience. Engage your users as real-time testers, and instrument the service so

that you know how people use the new features. Example: Google Mail maintains a beta status, allowing developers to frequently add and remove functionalities.

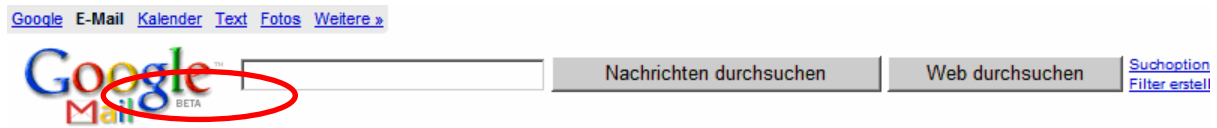


Figure 6: Google Mail beta status

2.5 Software Above the Level of a Single Device

The PC is no longer the only access device for internet applications, and applications that are limited to a single device are less valuable than those that are connected. Therefore: Design your application from the get-go to integrate services across handheld devices, PCs, and internet servers. Example: Apple's iTunes allows seamless music downloads to MP3 players.



Figure 7: Apple iTunes online store

3 Web 2.0 Technology

3.1 Ajax

Apart from improvements in infrastructure and hardware, internet entrepreneurs were confronted with the introduction of numerous technologies in terms of software. The first to be mentioned in this context is Ajax. Ajax is an acronym for Asynchronous JavaScript and XML and, in most cases, serves as a collective term that summarizes

alternative approaches to the classic architecture of websites.⁴ As indicated by the name, Ajax incorporates several technologies, some that were already being used a decade ago, XHTML, CSS, Document Object Model, XML, XSLT and JavaScript. What Ajax basically achieves is to break with the request-response cycle of client server interaction. With a traditional web application users would have to click on a link to request data from a web server. The server sends the data that is being transformed into a website and displayed by the browser. Any time a user intends to access a certain website he has to initiate the client-server-interaction and wait until the exchange has been processed. With Ajax, however, requests can be sent to the server without having to reload the page after every transaction. An Ajax engine is run on the client that allows performing activities like data validation or editing while processes that require accessing the server are run asynchronously. The main benefit is that the user interface is not stalled during data transfers. Ultimately, Ajax smoothes website access by cutting down response times of web applications and thus enriches user experience. For instance, e-commerce provider "Elastic Path introduced a new component of its e-commerce application that uses Ajax to let users go through an entire shopping cart check-out experience on a single interactive screen".⁵ Unease is uttered because the functionality of the back button in browsers may be inhibited and uploading fewer pages means that there is less opportunity for advertisement. Of course, on the one hand there are going to be less site visits because users need not load a new page after every single interaction but, on the other hand, they should spend more time per page as compared to before.

3.2 RSS

RSS stands for Real Simple Syndication or Rich Site Summary and allows users to subscribe to certain websites or parts of it. Any time new information is uploaded to the website, the data will be retrieved by the recipient's computer or other devices such as cell phones, PDAs or mobile gaming platforms. This functionality is not limited to pure text based contents; subscriptions are also available for video or audio files. For the technology to work, the supply side needs to provide a RSS feed. This RSS feed basically consists of an XML file that contains pure structured content without any layout, navigation or additional information. On the demand side users rely on a feed reader program that automatically downloads those headlines and short descriptions the user has previously signed up for and that are provided by blogs or content sites. Obviously, the innovative change is caused by the fact that users may now quit the process of manually scanning websites for news. Instead, the feed reader application centrally accesses, sorts and archives the news so that the strenuous task of searching for news becomes superfluous. Due to different companies taking a stake in enhancing RSS there are several versions that are partially incompatible. As a consequence, some developers suggested a new format which is referred to as Atom but has not yet gained the same weight as RSS with its different versions.

4 Social Software

Very much like Google's through its unrivalled skill in analyzing webpage link structures, firms can profit from network effects from social software. Some authors purport that most technical Web 2.0 applications are unsuited for companies due to stability and

⁴ Alby, T. (2007), pp. 135-137

⁵ See Karpinski, R. (2006), p. 1

functionality concerns. Nevertheless, these restrictions no longer hold for blogs or wikis.⁶ Some firms have already implemented wikis to foster inter-firm knowledge transfers and collaboration, e.g. in projects of automotive suppliers. There are numerous social software applications that have received a great deal of attention. US company LinkedIn or its German equivalent Xing have established online networks where users can acquire new business contacts, join communities, or simply keep in touch.

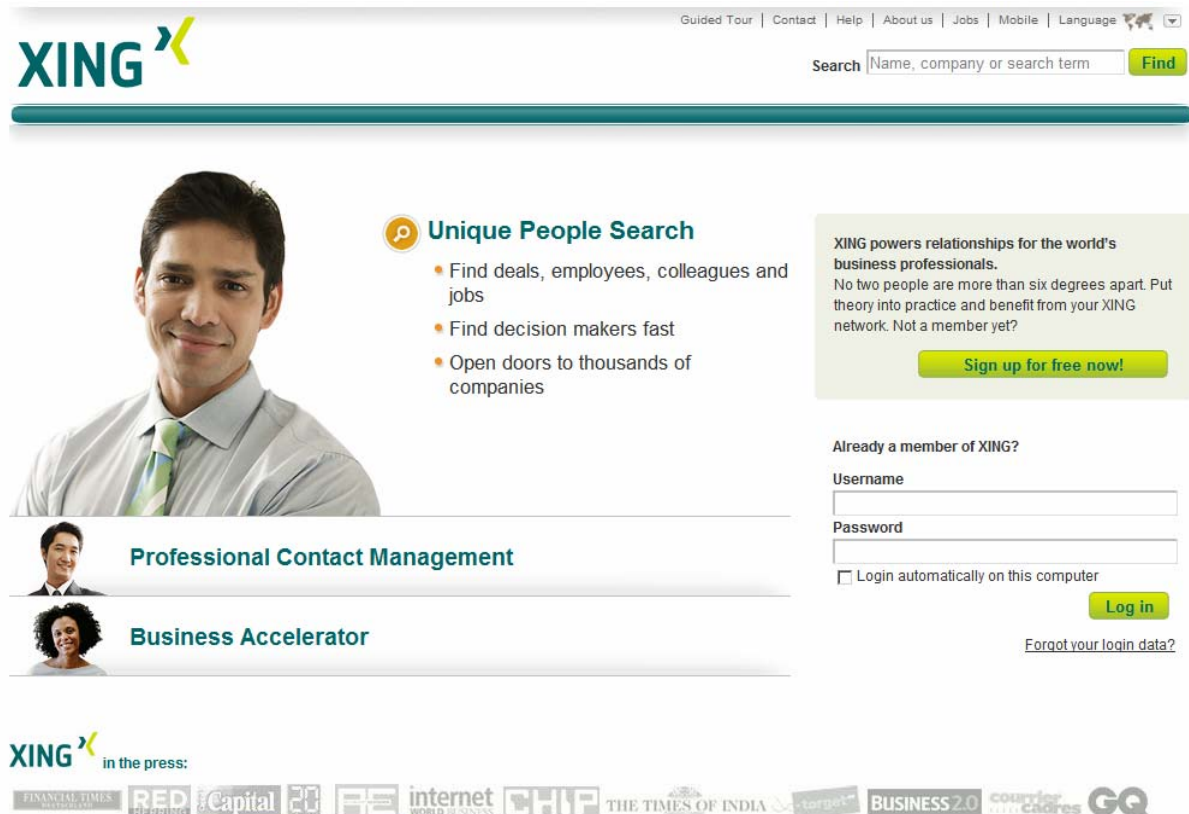


Figure 8: Xing online business network

A recent study supports these findings by providing particular evidence for B2B markets. According to a survey among 4.500 persons affiliated with B2B firms, blogs, podcasts and RSS have joined "top-rated communication tactics like [...] web casts and white papers."⁷ 80% of respondents asserted to be blog readers, with 51% reading content on a weekly basis. More than half reported that a blog has already influenced a technology purchase decision. The massive growth of web logs has turned the so called blogosphere into a mainstream medium that gives companies the chance to use the WWW as a bidirectional channel instead of a simple "one-way pipe". For firms like IBM, Microsoft, Google, Yahoo or SAP blogging has already become a matter of course.⁸

Analogously, podcasts enjoy increasing popularity among B2B firms. Studies substantiate that podcasts enjoy increasing utilization among B2B companies: 32% of the respondents said their usage of podcasts has "increased" or "significantly increased" in the last six months. Moreover, 58% of respondents said if information on

⁶ See Schütt, P. (2006), p. 154

⁷ See KnowledgeStorm (2006), p. 3

⁸ See Fösken, S. (2007), p. 27

business or technology topics they currently receive as a white paper or analyst report were delivered as a podcast, they would expect it to be more interesting. Furthermore, 55% purported they would be more likely to consume such information as a podcast rather than in a white paper format.⁹

In this sense, firms arrange with the fact that businesses increasingly need to avail structures to the left and right of communication media used in conventional marketing strategies. The majority of blogs promotes the exchange of thought and perspective between users by offering commenting or discussion functions. As can be inferred from the B2B surveys, almost 50% of blog readers seized the opportunity to contribute content to commercial blogs at least once a month.¹⁰ Hence, it is an architecture of participation companies need to design to find their distinct positioning, establish trust as well as public interest, and communicate their USP. The tools are readily available and range from RSS feeds to wikis.

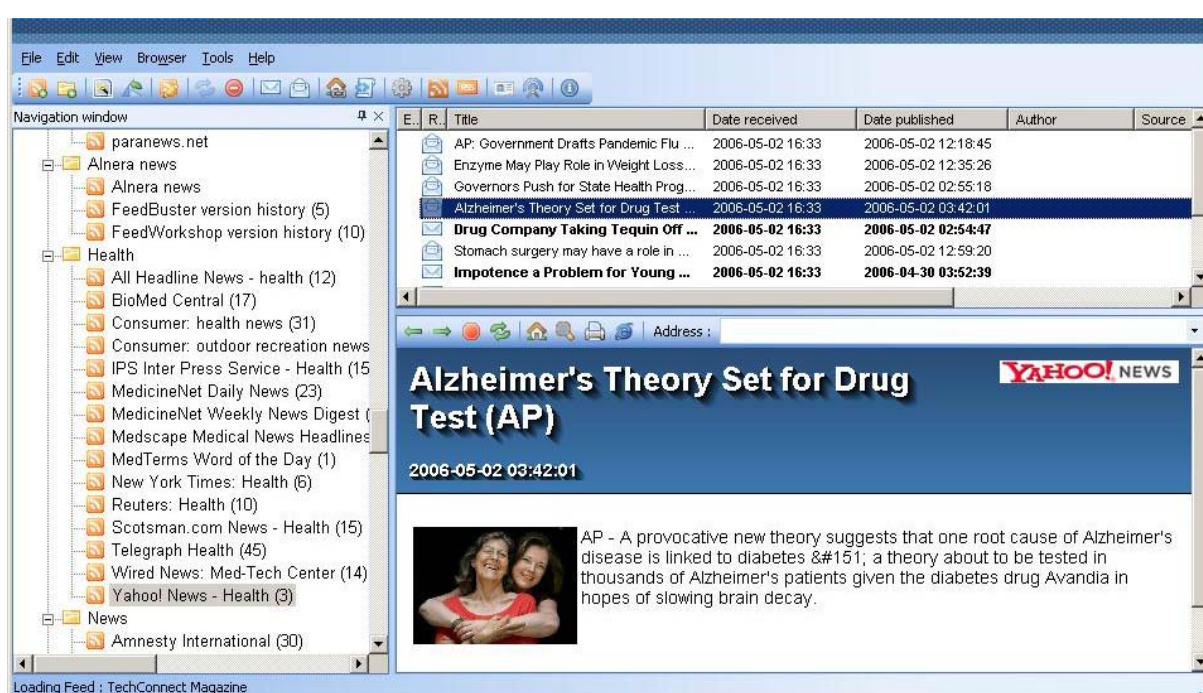


Figure 9: RSS Reader to display content from different websites

Other examples for software that derives its value from user activity is the game Second Life where people use avatars to interact online. Basically, Second Life provides users with a virtual playground where they can communicate, interact, and socialize. Activities range from normal chatter to building houses or selling goods that are paid in the fictitious currency Linden dollars. Following a number of TV reports and articles, public interest in Second Life had risen and business, embassies and universities have established representations.

⁹ Martin, H. (2006)

¹⁰ See KnowledgeStorm (2006), p. 4



Figure 10: Dell store in Second Life

5 Conclusion

The changing behaviour and demand of internet users puts pressure on companies to redesign their online marketing plans. Different competencies allow firms to adapt to and to benefit from the new emerging patterns of communication, commerce and information seeking on the internet. Companies need to review their business model to achieve strategic fit with the new trends in their online environment. New requirements range from the basic functional design of their website, e.g. implementing Ajax or providing incentives for increased user interaction, to enriching their marketing channels, e.g. blogs or podcasts have the potential to become standard marketing tools. B2C but also B2B are both affected by the impact of Web 2.0. Particular applications, e.g. social software like wikis, spill over from their internet origin to intrafirm purposes, for instance as knowledge management tools.

6 Literature

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