

## **Bubble or Future? The Challenge of Web 2.0 in China**

Na Yang, Communication University of China

The Internet industry in China has been developing for over a decade. With a scale of 162 million Internet users and 1.31 million Websites in 2007 (CNNIC, 2007), the industry has grown at an astonishing speed and it is deemed a sunrise industry in China. Nevertheless, the development of the Chinese Internet industry has not all been smooth sailing; it has gone through ups and downs. 1994 was the starting point for the Chinese Internet industry with the milestone that China achieved full-functional access to the Internet. Since then, China has become a member of the Internet family and the Internet industry has begun to flourish.

### **The First and Second Internet Booms in China**

From 1994 onwards, the rapid expansion of the Internet industry led to its climax when China's top Internet companies Sina, Sohu and Netease were listed on NASDAQ in 2000. However, this first Internet boom in China turned out to be the reflection of a global dot-com bubble. When the dot-com bubble burst around 2001, the Chinese Internet industry experienced a recession. Tens of thousands of Internet-based companies were closed down in China, and stocks of the three Internet companies on NASDAQ lingered as junk. A half-decade later, in 2005, the Chinese Internet industry began to recover when a great deal of investment flowed into the Chinese Internet market. In 2005 and 2006, 44 Chinese Network companies disclosed venture capital financing totaling 414 million dollars (Seekfortune, 2007). Notwithstanding the significant and profound restructuring of the Chinese Internet market during 2005-2006, this second Internet boom cooled down very soon. Since the 3<sup>rd</sup> quarter of 2006, many Chinese network companies have cut back on staff (e.g. Bokee, Baidu, Blogcn, Zhongsou and Oak Pacific Interactive) and the price of Chinese Internet stocks on NASDAQ has declined rapidly.

The second Internet boom in China was stimulated by the concept of Web 2.0. The success of Myspace, Youtube and Facebook in America provided the Chinese network market a promising model, and the speedy growth of netizens in China revealed a huge online potential for Web 2.0. Not only did the startups regard the concept as a great commercial opportunity of challenging the dominant position occupied by portal websites and set up a lot of Web 2.0 sites, but the investors also agreed with the startups, and most of the venture capital they provided to Internet companies was related to the Web 2.0 concept (Seekfortune, 2007). As well as the sudden surge, the quick subsequent relapse was also caused by the Web 2.0 concept. Since the second half of 2006, most Web 2.0 startups have found it difficult to cover the cost of websites. Moreover, investors have lost patience with continuing the investment yielding little profit and they have become more and more prudent. According to the statistics released by Dow Jones VentureOne and Ernst & Young, the equity investment in Chinese Web 2.0 companies fell 25% from 2005 to 2006 (Fang, 2007a). With reduced capital and many Web 2.0 companies having reduced staff, Chinese Internet stocks were affected and declined.

Following this fluctuation, two opposite opinions were presented. The pessimists compared the recent development with the dot-com bubble in the beginning of the 21<sup>st</sup> century, and concluded that there was a second dot-com bubble, namely Bubble 2.0 (Xin, 2006; Zhang, 2006). The optimists indicated the fruitful example of the American Web 2.0, which not only attracted increasing investment (Fang, 2007a), but also made considerable profit from commercial advertisements (Fang, 2007b). Besides, the optimists considered the decline as accommodation of the market and predicted that the Web 2.0 market would expand to a scale of 300 million U.S. dollars by year-end 2008 (Analysys International, 2006).

The debate between these two opposite opinions was not merely limited to the market sphere; they also argued over the social affects that the Web 2.0 concept would produce. The optimists defined Web 2.0 as a revolution of the Internet and projected that Web 2.0 would overturn the existing system of information communication (CJR, 2006). They believed that Web 2.0 would enable a broad flow of information, and the mass netizen and convenience access companied with the Web 2.0 concept would promote the achievement of true democracy in China (Wei, 2006). However, the pessimists insisted Web 2.0 was simply a continuation of Web 1.0 and that many of the technology components of Web 2.0 had existed since the early days of the Internet. They declared that the innovations made by Web 2.0 companies would only strengthen the existing structure (Wang, 2006).

In the Chinese Internet market, while startups, entrepreneurs and researchers crowd into forums and conferences to discuss the development of Web 2.0, the awareness of this concept is very low. Only 26.7 percent of respondents know what Web 2.0 is, according to an ISC survey (ISC, 2006). At the same time, there are 17.49 million bloggers and 33.75 million blogs in China (CNNIC, 2006). None of the entrepreneurs have announced that they can make a profit from the service. While U.S. Web 2.0 websites overtake Web 1.0 websites, the Chinese Internet market is still dominated by portal websites and even the Chinese version of U.S. Web 2.0 sites can hardly challenge them. So what is wrong with the Chinese Web 2.0? Will the Web 2.0 concept stimulate another dot-com bubble or represent the future trend of Internet development in China? By studying the ecosystem and characteristics of the network in China, this paper will contribute insights into the challenges that Web 2.0 faces in the Chinese network market. A clear understanding of such challenges will be vital in order to generate innovation and strategies that realize the creative and economic powers of new Web technologies in China.

### What is Web 2.0?

The term Web 2.0 was originally brought forward by the first O'Reilly Media Web 2.0 conference in 2004. In a brainstorming session before the conference, O'Reilly VP Dale Dougherty noted that with new applications and Websites exploding with regularity, the Web had become more important than ever. Then people attending the session brought about the notion of Web 2.0 to make sense of the development trend after the collapse of the first dot-com bubble (O'Reilly, 2005). The term Web 2.0 gained currency following the conference, although there is no precise agreement over what Web 2.0 means.

Tim O'Reilly's definition of the Web 2.0 concept is based on an assumed premise that Web 2.0, as the second generation of the World Wide Web, is radically different from Web 1.0. He explains the concept by citing examples of what belongs to Web 1.0 and Web 2.0. For

instance, under the Web 1.0 catalogue there are DoubleClick, stickiness, Publishing and content management systems; correspondingly, within the Web 2.0 catalogue there are Google AdSense, syndication, participation and wikis (O'Reilly, 2005). The table framed by Jim Cuene (2005) illustrates the contrast more transparently:

Table 1: The differences between Web 1.0 and Web 2.0

	<i>Web 1.0 (1993-2003)</i>	<i>Web 2.0 (2003-beyond)</i>
Major characteristics	HTML pages viewed through web browsers	Web pages, plus a lot of other "content" shared over the Web, with more interactivity; more like an application than a "page"
Mode	"Read"	"Write," "Contribute"
Primary Unit of content	"Page"	"Post/record"
State	"static"	"dynamic"
Viewed through Architecture	Web browser "Client Server"	Web browser, RSS readers "Web Services"
Content Creator	Web Coders	Everyone
Domain of	"geeks"	"mass amateurization"

Source: Suene (2005)

O'Reilly concludes that "Web 2.0 is the business revolution in the computer industry caused by the move to the Internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them" (O'Reilly, 2006).

The technologies and applications which carry out the Web 2.0 concept include blogs, RSS feeds, Web service, APIs (Web application programming interfaces), wikis, tags, social bookmarking, SNS (social network software), AJAX (Asynchronous JavaScript and XML), XML, and interface protocol. All these applications are conducted by, or generated from, such thoughts and theories as six degrees of separation, long tail, social capital, decentralization, and so on (ISC, 2006).

Although technologies and applications are the main symbol of Web 2.0, it is not purely technologies or applications. Supporters of the concept emphasize that Web 2.0 is a set of executive principles that practice the ideal of Web socialization and personalization (ISC, 2006). As Stephen Fry (2007) described in an interview:

Web 2.0 is an idea in people's heads rather than a reality... It's actually an idea that the reciprocity between the user and the provider is what's emphasized. In other words, genuine interactivity if you like, simply because people can upload as well as download. (Fry, video interview, 2007)

However, critics question whether the term "Web 2.0" is more than a buzzword. As Tim Berners-Lee (2006) said in an interview,

Web 1.0 was all about connecting people. It was an interactive space, and I think Web 2.0 is, of course, a piece of jargon, nobody even knows what it means. If Web 2.0 for you is blogs and wikis, then that is people to people. But that was what the Web was supposed to be all along... So Web 2.0, for some people, it means moving some of the thinking client side so making it more immediate, but the idea of the Web as interaction between people is really what the Web is. That was what it was designed to be as a collaborative space where people can interact. (Laningham,2006)

While we examine technologies and applications which are entitled Web 2.0, the representative models and relevant technologies indicated by them do not present any update to technical specifications. For instance, AJAX, instead of supplanting the underlying protocol HTTP, is just an amendment of adding an additional layer of abstraction on top of it. Indeed, they are merely renewed technologies and applications of the existing ones. Furthermore, when we look around the Web market, the features of both Web 1.0 and Web 2.0 always merge with each other instead of one replacing the other. For instance, many portal websites begin to provide blog service nowadays, while many professional blog and social network websites put the popular content on the front pages just like the portal websites always did before. Also, the BBS (Bulletin Board System) forum, which is the typical mode of Web 1.0, started to use tag applications and declared that they are heading into BBS 2.0. Thus, some critics have stated that Web 2.0 is an evolution but not a revolution. As Huang Shaolin (2006) indicates,

The phrase of 2.0 usually causes such opinion that Web 2.0 is definitely different from Web 1.0. People always neglect that between two Web editions, there still exist Web 1.7354, Web 1.212, and so on. The phrase makes people believe that Web 2.0 is evolution but not revolution. In fact, even the Web 2.0 is a transition, but not the finish of a revolution. (Shaolin, 2006)

Compared with other kinds of mass media, the Internet is the most interactive one. However, its advantages are not apparent at first sight. In Web 1.0, as shown in Jim Cuene's comparison above, content is created by only a few people, while most people just read and give some feedback. With the barrier of technologies and limited thoughts, the Internet is more like an imitation of other media. The communication process of the Internet is still a broadcast, and its huge potential of interactivity has not been fully displayed. Step by step, new technologies and applications facilitate the end users' communication in that they can contribute content and not only read. In this sense, the communication process of the Internet turns into a kind of interpersonal communication with a wide scope and convenient means. Therefore, the core component of Web 2.0 is people but not content. In Web 1.0, the main production of the Internet is information. In Web 1.0, people use the web as a medium to acquire information, and how to deal with the information explosion is the dominant issue. By contrast, the aim of Web 2.0 is to build up relationships. People utilize content and the Web as tools to generate relationships. Learning how to create and maintain effective social networks become the key issue (Huang, 2007).

In conclusion, Web 2.0 is an evolutionary form of computer-based communication, which enables and encourages more people to get together on the Web platform and

communicate with others in an effective way. In short, as concluded by Dion Hinchcliffe (2006), the read-write Web, plus lots of people using it, equals Web 2.0.

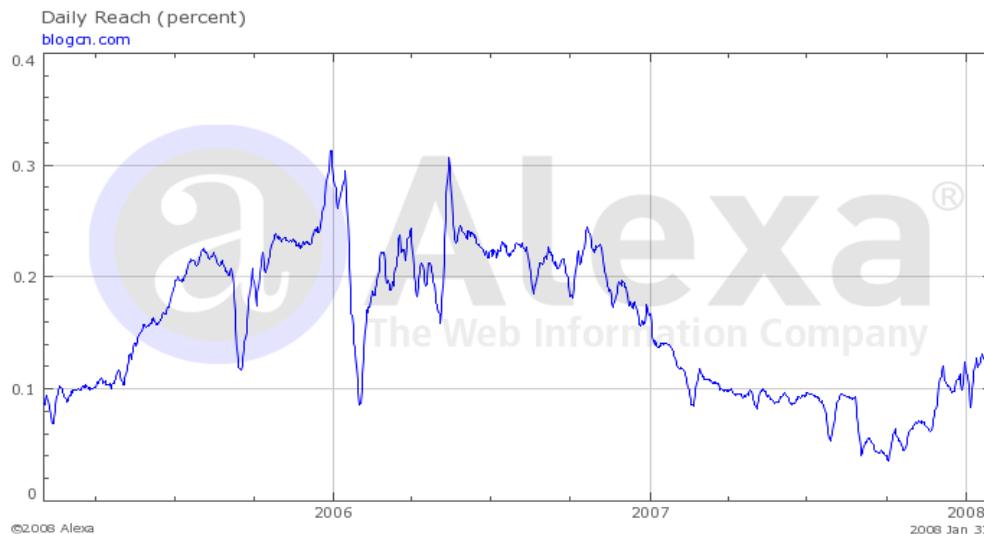
### The Challenges of Web 2.0 in China

#### *Users*

According to the survey report of CNNIC (2007), China already has the second largest netizen population in the world, only behind that of the U.S. Moreover, the report predicts that the number of Chinese netizens will sharply increase in the next three to five years. The huge number and the optimistic predictions spur both domestic and foreign Web entrepreneurs. It seems that China has already had a lot of netizens participate in the Web 2.0 movement. Unfortunately, this assumption is not correct in practice.

The 1.63 million netizens only amount to 12.3 percent of the population in China, and all these people have a relatively low income (CNNIC, 2007). To advertising clients, those statistics are disappointing compared with the universality rate of television, newspaper and radio. Therefore, it is hard for websites to generate revenue from advertisements.

Figure 1. Daily reach statistics of Blogcn, Tudou, Youtube and Myspace.



Source: Alexa (2007)

For Web 2.0 websites, this situation is more serious. The Web 2.0 ideal requires that netizens should be active in the communication process; they should not only read but also write. In other words, people should regard the Internet as a tool to facilitate their active communication, but not merely in terms of mass media from which they receive information rather than make a creative contribution. In this sense, the number of netizens that can actively participate in communication is not that large. Compared with the statistics two years

ago (CNNIC, 2006), the amount of Chinese netizens has increased by 59 million, which means that over 36% of Chinese netizens are fresh to this medium. New netizens often have a preconception that the Internet is a medium similar to television or radio, because they have little experience with surfing on the Internet and only a cloudy idea of what a transactional medium could be. The graph in figure 1 above measures the daily reach statistics of Blogcn (famous blog website in China), Tudou (famous video share website), Youtube and Myspace. While Youtube and Myspace rapidly gained an increasing number of users, they have begun to attract advertising clients and have started making profits. However, their parallels in China just maintain a fairly stable amount of users despite the increase of Chinese netizens.

Unlike U.S. Web 2.0 websites, which use English as the communication language, Chinese websites have a language barrier in terms of attracting users from around the world. Therefore, the target users of Web 2.0 websites in China are limited. To the domestic Web 2.0 market, though the future is promising with optimistic predictions of expansion, the number of active users will not increase so quickly. Before it matures as a market, a transition period of cultivation and patience will be required.

### *Websites*

Chinese startups regard the Web 2.0 age as a rare opportunity of entering the market and changing the existing market structure which is dominated by major portal websites. However, after several years of development, most startups find that they can hardly survive in the market and many of them disappear. The biggest problem facing startups is the lack of innovation, both in website models and in sources of revenue.

A common stereotype is that Chinese startups always copy the Silicon Valley model. Sometimes, startups present a copycat without any change except the language. As the core component of Web 2.0 is people, their own social and cultural backgrounds cannot be neglected, because these features have an effect on motivation and on the dynamics of establishing relationships and being active in virtual communities. Although the mechanism of a website corresponds with people's traditional value of relationships, it will appeal to more people and spur their creation and vice versa. Although successful U.S. models offer a helpful parallel, they do not always suit Chinese needs. A clone of a U.S. website may attract attention at first because of its fresh model, but its neglect of Chinese characteristics will cause failure of generating relationships between users as well as locking in users. For example, the definition of keywords is very important for SNS websites, because it helps people to find others who have similar interests. However, the keywords definition system of the U.S. is inefficient in China. Chinese are living in a complex cultural and social context; thus, their characteristics are complex and ambiguous which makes them difficult to include in a limited keyword system. While the keywords tool in a copycat of a U.S. social network website fails to work efficiently, people who join it will soon lose interest in the website, for it can do little to help them establish real relationships, but will instead burden them with a crowd of undesirable strangers. The clone of U.S. models also results in tough competition in China's market. The market is swarmed with varieties of Chinese "Facebooks" and hundreds of Chinese "Youtubes." With little innovation, those websites resemble each other and have few differences that can attract more users.

The development of revenue sources is another problem that startups face. The main revenue sources of Web 2.0 sites in China are user charges, wireless value-added services and advertisement, though none of these are promising from a business perspective. As regards user charges, people in China are unwilling to pay for Web 2.0 services. For instance, according to CCW Research (2007), only 28% of users consent to pay services for online videos, while others declare that they only watch free ones. Regarding wireless value-added services, these are based on mobile penetration which is well developed in China. However, not only is this sector of the market keenly competitive, it also has a high entry barrier because of government regulations. Finally, in terms of advertisements, the network advertising market in China is comparatively small. As the report of iResearch Consulting Group (2007) predicted, the advertising revenue of the Chinese network market was set to grow to 10 billion RMB in 2007, which is merely equal to 6.44% of the American network market. Moreover, the advertising clients prefer Web 1.0 sites which have a mature system with diverse ways of pasting advertisements, while Web 2.0 sites have still not found a satisfactory model. For instance, some video sharing websites try to stick advertisements before the videos start. As the videos are contributed by users, the quality and content of videos are so diverse that this affects the control of advertising efficiency.

Furthermore, the Web 2.0 concept encourages a lot of people to use the web platform and to contribute content. With the expansion of end users and a growing amount of content, the costs of broadband and storage facilities become more and more expensive. As their own revenue can barely cover the increasing costs, startup entrepreneurs begin to seek venture capital funding. However, investors are disinclined to provide financial support for those websites because of the lack of good revenue sources and high risk in the market. Even the investors who have already entered this market will soon withdraw while their expensive investments bring them little profit. This eventually shortens the development cycle of Web 2.0 sites. With high costs and a lack of viable business models, many of them disappear.

Big companies, which have gone through the first dot-com bubble, still dominate the market. They have lots of loyal users and stable revenue sources, which mainly rely on wireless value-added services, online games and advertisements. Therefore, with their own financial support and accumulated experience of the Chinese market, they can easily copy the ideas which are generated by Web 2.0 startups and then bypass the startups, as Zhang Chaoyang, the CEO of Sohu, said: "No matter what Web 2.0 companies are doing now, we can copy all their innovations as soon as possible"(Qtd. in Wei, 2006). Whenever they enter the scene of Web 2.0 services they win market share quickly. For instance, in the blog hosting market, during the third quarter of year 2007, Sinablog occupied 19.84% of the market share, while the most successful first mover of this sector, Bookee, just achieved 9.07%, which is very close to another big company, Sohu's, share of 8.9% (CIIS, 2007).

### *Regulations*

The government policy and regulations of the Network industry are a potential risk for entrepreneurs, especially for startups without stable revenue sources. Although China has already issued in succession a set of administrative regulations, state council decrees and normative documents on network management, a complete regulation system of the network management has not yet been devised. As the Chinese building of a legal framework is still

underway, Internet regulation always changes and alters. Besides, the lack of long-term objectives means that short-term practices of network regulations always exist. Above all, the adjustment of regulations is obviously behind the development of the market. This problem is grave for Web 2.0 sites because since they entered Chinese territory there have been few regulations that define their development. A frequently revised regulation may cause loss to initial investment. Moreover, with increasing regulatory risks, venture capital will be much more cautious in investing in Web 2.0 sites. As an example, the Ministry of Information Industry (MII) and the State Administration of Radio, Film and Television (SARFT) recently released a regulation on online video sites. According to the new rule, Internet sites have to get licenses to offer online video service, and only state-owned and state-controlled businesses can apply for these licenses. This means that most video sharing websites cannot get the permission of running this business, because they are mostly private companies without any state share. Before this regulation took effect on January 31, 2008, they were told they had to shut down. However, none of the websites were suspended, and on February 3, 2008, the government announced that all video sharing websites could still run their businesses.

The Web 2.0 concept indicates that content could be communicated among people freely and directly through the Internet. In Web 1.0, there still existed gatekeepers to select the content and filter information. With Web 2.0, everyone can be a broadcaster and bring content to the masses. However, the fact is that Internet censorship in China still plays the role of a gatekeeper. The censorship is conducted under a wide variety of policies and regulations and is mainly enforced in two ways – technological and artificial means. The technological means involve software which automatically checks the content and stops the sensitive ones. This device is enabled by verifying keywords (e.g. relating to matters such as illegal groups, banned BBS and some historical events). Whenever these keywords show up in a message, whether the opinion of the content is pro-government or not, the whole message will be blocked. However, this censorship block is easy to evade. Most users avoid it by adding dashes between Chinese characters or replacing the words with the first letters of pronunciation. People can understand it, but the software can not. The artificial means is executed by a group of people, including editors and webmasters of websites, Internet policemen, governors, and so on. This way monitors a wider scope of topics than the technological means. Besides the message relates to sensitive keywords, the artificial means also deletes content, including word, video and audio texts, which are regarded as offensive and considered to have negative social effects by the government. Website companies are assigned to implement this means; if they fail to do so, they face the risk of being shut down. However, the government has never released a list of so-called sensitive content. The definition and borders of what are problematic content are ambiguous. The usual way that the government announces banned topics is through interpersonal ways, such as meetings and through the telephone. The technological means are efficient but not strict, while the artificial means are inefficient but very strict. In these two ways, the Internet censorship system has proven to be efficient and profound.

## Social Effects

One of the most important social effects of Web 2.0 is the decentralization of power, especially in China, where power is highly centralized. Web 2.0 reduces the intermediate links of communication, and provides a platform for people to talk to the masses directly. The power to speak in public, which was centralized to a small group of people before, now has the possibility to be extended to the masses. Although the existing censorship system still impedes such decentralization in some ways, the voices of the grassroots become more and more strong and begin to challenge the old authority. For example, on October 12<sup>th</sup>, 2007, the Shanxi Forestry Department published a photo of a wild Huanan (South China) tiger taken by a local peasant. The photo suggested that the believed-to-be-extinct wild Huanan tiger still existed. Just a few days later, some netizens suspected that the photo was a fake and posted their analyses on the Internet to question it. With the participation of more netizens and experts of different fields, these doubts turned into a national controversy centered on the truthfulness of the photo. Though the governors of the Forestry Department insisted the photo was real, netizens searched for proof everywhere to oppose their judgment. As more and more proof had been found, netizen action broke down the myth of authority of the governors and the department they represented. One of the governors exclaimed in grief: "How can the netizens show no confidence to the news that is released by the government?" (Xinhua News, 2007).

However, decentralization does not inevitably induce equal power. In China's case, it empowers new authority. In the Huanan tiger event, the news presented by netizens set the media agenda of television, newspaper and radio. But the messages which were delivered by netizens were merely regarded as opinions, not as evidence or facts. While other media, especially the television, repeated these messages and drew conclusions, people believed that their judgment was fair. Media were empowered as a new authority, and their judgment decided whether news from the netizens was factual or only rumors.

The Web 2.0 concept believes that the mass debate will generate diversified opinions and eventually result in consensus. However, the spiral of silence theory is still effective in Web 2.0. The raising of a topic always causes two opposite opinions and others turn to silence. Moreover, rather than result in consensus, people with divergent views deviate from the main theme and ultimately induce personal abuse. As an example, a young writer, Hanhan, and a musician, Gao Xiaosong, started a debate over "what is a literary circle" on their blogs in 2006. With thousands of fans joining the debate, there only remained two kinds of voices: pro-Han or pro-Gao. Their respective fans attacked every different idea, and finally the debate turned into personal abuse between two celebrities with the support of their fans.

The diffusion of Web 2.0 also raises the issue of media literacy. With means of blogs and free upload video sites, some people broadcast rumors, distorted news, false blogs of celebrities and offensive videos on the Web. The credibility of the Internet is increasingly becoming a concern. In addition, Internet mobs arouse considerable attention in China. When one's behavior provokes the netizens, they get together and take revenge. They hunt the Internet to find every conceivable private detail of the person, such as real name, address, telephone number, and so on, and then release all this information on the Internet and encourage everybody to disturb and harass the person. With more and more people joining in this group of Internet mobs, violence is extended from the virtual world to reality. Always,

the cause of the event is moral issues which can hardly be sanctioned by law. Mobs make their own judgments and implement revenge. In this sense, the Internet becomes a panopticon over society, in which rules are made by the judgment of mobs. Some researchers propose that a real name system (i.e. abandoning anonymity) could settle the questions of media literacy. However, others argue that such a system might restrict the variety and freedom of expression (Sina, 2005).

### Conclusion

Regarding Web 2.0 as an evolution but not a revolution, the development of Web 2.0 is still in its infancy. With regulation risks and the advantages of big companies, startups face a tough situation of surviving in the market. Only those who make innovations based on the features of the Chinese market can achieve success. The diffusion of Web 2.0 applications enables the masses to obtain freedom of expression. However, it also brings a lot of side effects to Chinese society. The ideal Web 2.0 scene has not yet been fully achieved in China, but it is the future of network development.

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