

# New-Age Dotcoms: Creative Destruction or Digital Anarchy?

The case is produced by Ranjit Goswami, Associate Professor, Indian Institute of Foreign Trade, Kolkata & Chinmoy Kumar, Faculty Member, Alpha Institute of Business Management, Ranchi. The case is intended to be used as the basis for classroom discussions rather than portraying effective or ineffective managerial decision making. The case is written from the experience of the authors as both take a keen interest on developments in the Internet, and in broader Information and Communication Technologies (ICTs), data sources being mostly of secondary type. Though authors have taken due diligence on verifying the various data and information, the case should not be used as a source of presented data.

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**Teaching objectives of the case:** Rare few innovations in human civilizations of recent times would compare with the Internet evolution in terms of its disruptive potentials, its impacts on business, governance, society and also on individuals' lives. However, Internet still happens to be a 'work-in-progress'. Starting with the 1<sup>st</sup> boom that saw the emergence of e-commerce during the last decade of the 20<sup>th</sup> century, what we see now is the emergence of another category of players that primarily thrive on e-contents, generated through the widest possible democratic means from users itself and surviving on advertisement than on commerce as revenue.

The case examines the macro, meso and micro-trends in the evolving area of the Internet, primarily in the e-media space, and presents this journey as the transformation takes place in business, governance, society, and in individuals' lives. The case is not intended to indicate any specific destination of this journey in mind as it may be pre-matured, and no one would probably have firm ideas on what the final destination of this journey would be. However the developments per se describe the journey that broader Internet has followed so far, and how the '*New-Age Dotcoms*' emerge as important actors in that ongoing evolving play of the Internet in the 1<sup>st</sup> decade of the 21<sup>st</sup> century. Many view the emergence of these '*New-Age Dotcoms*' as foundations of tomorrow's disruptive forces to have significant impact on many of our future products, services and even on broader creative economy, whereas others view it as a passing phase of the original disruptions brought in by the Internet itself.

The essential questions the case therefore asks are:

1. Is Web 2.0 any different from the ongoing Internet evolution?
2. Are the new-age dotcoms more of a fad or they can indeed be the Next Big Thing on the Internet?
3. What's similar between e-commerce and e-media? And what's different between them? E-commerce got hugely adopted by old-economy players, but most new-economy e-commerce players failed to make much of a sustainable mark (the dotcom bust and even subsequently, many B2B, B2C, C2C players collapsed). What's the trend for e-media?
4. Analyze the impact of the overall disruptions due to Internet on established players in sectors like (A) Telecom, (B) Media and also (C) on IT players (desktop/enterprise markets).

# New-Age Dotcoms: Creative Destruction or Digital Anarchy?

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*"The balance of power on the Internet today is more skewed than I've ever seen it."*

**- Jordan Rohan, Research Analyst, RBC Capital Markets<sup>1</sup>**

*"Life is dead, again."*

**The New York Times<sup>2</sup>**

## INTRODUCTION

The Internet continued to evolve in ways never imagined before. The traditional mind space taken by big companies like AOL, Microsoft, and Yahoo! was slowly giving way to many new startups such as Youtube, MySpace, Flickr, Facebook, etc. A web traffic study released by Hitwise on July 11, 2006 reported MySpace as the most visited domain on the Internet (**Exhibit 1**). According to the said report, the company accounted for 4.46% of all Internet visits in the US, a 4300% increase in visits over 2004-2006. Yahoo! Mail was second with 4.42% of total Internet visits, followed by the Yahoo! main site with a share of 4.25%.

To many industry analysts, the rise of MySpace to the top slot didn't come as a big surprise. A survey by IBM in the next year (2007)<sup>3</sup> offered much better picture for Internet as an engaging and interactive media. It reported that the time media consumers in the U.S. devote on Internet for personal use is beginning to overtake the more passive hours of time spend before Television. It stated *'19 percent of respondents said they were spending six hours or more on personal Internet use, versus 9 percent who said they spent that kind of time watching TV. 66 percent reported viewing between one to four hours of TV per day, versus 60 percent who reported the same levels of personal Internet use.'* No doubt a significant % of these users were young, of 'MySpace' generation, and many even dubbed it as another 'fad'(2006)<sup>4</sup>. The convergence of new technologies and media had brought substantial increase in the use of Internet, globally. The Internet no longer remained just a mode for information sharing. Rather, through cell phones, smart phones, digital cameras, audio players, video game consoles and a host of other digital devices and consumer technologies, penetration of which is again notably high amongst the youth, the Internet offered a vast landscape of integrated transactions that impacted virtually all businesses across the globe. New digital services challenged the traditional media and monopolistic market structures, resulting in the emergence of new players, platforms and ways of delivery of digitized content. Life magazine died, and many traditional print media went out of print, and newspaper circulations in developed world declined. Others, like the traditional TV, adopted Internet like never before, both for survival and for synergistic growth.

At stake were trillion-dollar media industry, trillion dollar entertainment industry and trillion-dollar telecom industry, not to mention the stake of future IT industry as well. Business world anyway adopted and carried forward trillion-dollars of transactions over the web starting with the 1<sup>st</sup> wave of Internet, synonymous with e-commerce, during the late 1990s and early part of the 1<sup>st</sup> decade of the 21<sup>st</sup> century.

Remarked the notable staff writer with Washington Post, Leslie Walker, *"Internet is still a space where new brands such as MySpace can suddenly break into the upper ranks, where older brands such as Citysearch can revive themselves after languishing for years, and where established*

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<sup>1</sup> Chris Sherman, Rohan: The Job of an Analyst is Not Easy, <http://searchenginewatch.com/showPage.html?page=3623030>, August 1, 2006

<sup>2</sup> The New York Times: Life Magazine, Its Pages Dwindling, Will Cease Publication, <http://www.nytimes.com/2007/03/27/business/media/27life.html>, March 27, 2007

<sup>3</sup> The New York Times, 'I.B.M.: The Net Trumps Television', <http://bits.blogs.nytimes.com/2007/08/22/ibm-the-net-trumps-television/> dated 22<sup>nd</sup> August 2007

<sup>4</sup> boyd, danah. 2006. "Friendster lost steam. Is MySpace just a fad?" *Apophenia Blog*. March 21, 2006

outfits such as Google often wind up as beneficiaries because they buy or copy services pioneered by upstarts.<sup>5</sup> Yes, there were consolidations, primarily amongst Google, Yahoo! and MSN as they snapped up many upcoming new-age dotcoms<sup>6</sup>. And then on 31<sup>st</sup> January, 2008, Microsoft launched what apparently looked for a hostile bid for Yahoo!<sup>7</sup>

## THE EVOLVING INTERNET

What began as a US military project during the early 1960s took rapid strides in the later years that revolutionized the entire globe. The modern day Internet took formative shape in the 1990s, opening new avenues for communication and information sharing. The facility to easily and quickly share information on a global scale brought with it an entirely new level of communication. Internet not only cut down the cost of communication, it also played a vital role in providing thrust to trade and commerce. New ways of advertising, mail-order sales and customer relationship management emerged that redefined the traditional ways of doing business. Email, online shopping, Internet banking, online auctions, e-governance etc. emerged as new social paradigms. As businesses realized the increasing role of Internet, a number of companies emerged offering a plethora of Internet-based services.

The early dotcom years witnessed tremendous rise in Internet stocks. According to the New York-based securities data firm CommScan, web companies raised a total of US\$ 1 billion from 34 IPO in 1997, US\$ 2 billion from 45 IPO in 1998, and US\$ 24.1 billion from 292 IPOs in 1999.<sup>8</sup> US Commerce Secretary Norman Y. Mineta stated in the Report Finding Progress on Digital Inclusion<sup>9</sup>, *"The Internet is becoming a vital tool in our daily lives, from international business transactions to keeping in touch with family members. Each year, being connected becomes more critical to economic and educational advancement and to community participation."* In 1999, the total revenue from Internet based transactions was US\$ 523.9 billion, more than 62 percent from that of 1998.

Internet did come up a long way since then, impacting probably all areas in a manner unseen before in human civilization. Announcing Microsoft's bid for Yahoo! to the employees of Microsoft, Ray Ozzie, the visionary Chief Software Architect in Microsoft echoed the same thoughts again: 'Over the course of the past ten years, our lives, our businesses, even our society has progressively been transformed by the Web.'<sup>10</sup>

There's not much debate about this 'progressive transformation' amongst practitioners and academicians, the debate lies more on the destination about this 'progressive transformation' of human civilization with the advent of the Internet. The predicament lies in what Bill Keller, the Executive Editor of the New York Times stated in an event of the Newspaper Industry:

*'I can't draw you a neat map from our current predicament (newspaper industry battling with falling sales for survival and the simultaneous opportunity and threat from online news/content) to this new destination. Indeed, I would regard with deep suspicion anyone who claims to have such a map. Isaiah Berlin famously divided the intellectual world into foxes and hedgehogs -- the hedgehog knows one big thing, the more promiscuous fox leaps from idea to idea. The internet is a fox medium, that's fox with a lower case 'f'. It is perilous to get locked too firmly into one big idea - that people will pay for content on the web, or that they won't; that the key to success is brand*

<sup>5</sup> Leslie Walker, New Trends In Online Traffic, <http://www.washingtonpost.com/wp-dyn/content/article/2006/04/03/AR2006040301692.html>, April 4, 2006

<sup>6</sup> Google, Microsoft, Yahoo acquisitions, a blog at <http://www.shmula.com/blog/timelines/google-microsoft-yahoo/g-y-m.htm> nicely portrays these acquisitions graphically across time till July 2007. Microsoft alone as a leading IT company acquired roughly 150 firms since 1990, source BusinessWeek. Microsoft's Urge to Merge, [http://www.businessweek.com/technology/content/may2007/tc20070504\\_119213.htm](http://www.businessweek.com/technology/content/may2007/tc20070504_119213.htm), May 4, 2007

<sup>7</sup> Microsoft.com, Microsoft Proposes Acquisition of Yahoo! for \$31 per Share,

<http://www.microsoft.com/presspass/press/2008/feb08/02-01CorpNewsPR.msp>, 1st February, 2008

<sup>8</sup> David Kleinbard, The \$1.7 trillion dot.com lesson, <http://money.cnn.com/2000/11/09/technology/overview/>, November 9, 2000

<sup>9</sup> The report was released on October 16, 2000.

<sup>10</sup> <http://sec.gov/Archives/edgar/data/789019/000095012308001107/y47867de425.htm> accessed on 15/2/08

*loyalty, or, on the contrary, that it's all about scale. Anyone who gets too declarative about this medium is likely to be hedgehog road kill. But while I can't tell you quite when, or quite how, we reach the Promised Land, I will offer up a few reasons for my optimism that we will get there.*<sup>11</sup>

## **The Dotcom Bust and 9/11 Events**

The dotcom bust was the result of exceedingly optimistic expectations and over-capitalization by several dotcom companies that ultimately led them to collapse under their own weight. One of the driving factors for these dotcom companies was that they felt they could bypass the distribution channels of existing businesses without in any way directly competing with them. However, as the old-economy businesses with stronger brand presence developed their own dotcoms, many of the new and comparatively lesser known new-economy players found it difficult to compete. The bust of the dotcom was so severe that it led to a recession in the US economy, resulting in significant slowdown of the global economy too.

Several companies such as Boo.com, Clickmango.com, Ready2Shop.com, Pets.com and Toysmart.com went from being the pioneers of a phenomenon to mere victims of the final bust. The slowdown ruined hundreds of companies, threw away thousands of people from work (**Exhibit 2**), and led millions of investors go broke (**Exhibit 3**). By 2001, the bubble was fast deflating. A number of dotcoms had already ceased trading after losing their venture capital - some without even making any profit.

Contrary to what was popularly perceived about the survival rates of new-economy players, the problem was later found to be more with the 'irrational exuberance' of investors community as they believed in impossible growths, that too in monetized units, which even the unbelievable Internet growth failed to satiate. The other part was the business models, and too many 'me too' sites. According to a study by the University of Maryland and the University of California, San Diego (2006)<sup>12</sup>, it was found that the bust was not that severe in terms of survival rates as in terms of stock-prices. A study of 700-odd dotcoms revealed that the survival rate of dot com firms was on par with or higher than other emerging industries and the firm survival rate was independent of private equity funding. The studies blamed the bust more on 'Get Big Fast' mentality, highlighting the build-up of high expectations from market.

Another great impact on the Internet came in the days following the 9/11 terrorist attacks in New York and Washington. According to Nielson Net Ratings, the use of Internet increased by 15 percent in September and October, from what it was a year before. People used the Internet as a means to contact relatives, to share their grief, to tell stories of survival and for innumerable other uses. Several new sites also came up in this period, as the demand for news and communication rose higher.

## **Growing Bigger and Bigger**

Despite steady growth from the early 90s, the Internet witnessed radical changes with newer and newer applications in the years following the dotcom bust, which manifested in tremendous growth in users and usages (**Exhibit 4**). As new developments in media convergence emerged, some of the sites like MySpace, YouTube, Blogger, RapidShare and services like VoIP-based voice transfer gained high popularity among netizens. The new ways of communication brought profits not only to the pioneering companies, but also had a cascading effect on others as traditional players from media, telecom and entertainment industry faced a major threat and could lose customers, similar to the threat that e-commerce and B2B/B2C players had brought earlier to brick-and-mortar firms during the 1<sup>st</sup> wave of Internet (e-commerce). E-commerce was a booming

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<sup>11</sup> Bill Keller, Full Text: Bill Keller's Hugo Young Lecture: 'Not Dead yet: the newspaper in the days of digital anarchy in The Guardian dated 29th November, 2007 accessed on 7/2/08 (<http://www.guardian.co.uk/media/2007/nov/29/pressandpublishing.digitalmedia1?gusrc=rss&feed=media>)

<sup>12</sup> Goldfarb, Kirsch & Miller. Was there too little entry during The Dotcom Era, Journal of Financial Economics, Volume 86, Issue 1, October 2007

success if adoption and transactions is any measure as, according to an estimate by Forrester, the global ecommerce (both B2B and B2C) touched US\$ 6.8 trillion in 2004 (**Exhibit 5**). However barring Amazon and eBay globally and Alibaba in China, there were not many success-stories of e-commerce amongst new-economy players.

Contrary to the 1<sup>st</sup> wave of e-commerce where dotcom firms had to market a lot and pay significantly to acquire customers' eyeballs alone, leave aside revenue; the new generation dotcoms spread more by word-of-mouth. And advertisement on the web was also forthcoming through banners or search-engines, so the new-age dotcoms didn't have any acquisition cost and still could have revenue from the beginning. Collaborations between content generators and search-engines allowed revenue sharing models that profited not only the content generator as extra visits meant extra ad-revenue, but also other stakeholders in the process (like search-engines).

Simultaneously, the world also saw the extension of Moore's law in bandwidth availability and its price. More and more people could access Internet as overall penetration of computers to broadband grew by leaps and bounds. By mid 2006, there were around 1.08 billion Internet users worldwide as against 497.7 million in 2001. Between 2000 and 2005, the CAGR of Internet users was around 19%, much less compared to 67% CAGR of spending via the Internet during the same period. Total spending on Internet access (broadband Internet access and dial-up Internet access) in the international markets reached US\$ 113.3 billion in 2005 and was expected to grow to US\$ 221.6 billion by 2009. The pie was growing, and the growing pie offered more and more innovations and applications.

## **DIGITAL REVOLUTION AND THE NEW PARADIGMS**

The continuing evolution and adoption of improved technologies impacted businesses all across the globe. The cost of hardware, software, and Internet access continued to drop, vis-à-vis emergence of newer and better services (**Exhibit 6**). Network computing, Wireless Internet, VoIP, Online advertisements etc. were some of the popular trends that were reshaping Internet.

### **Towards Network Based Computing**

In 1984, John Gage, one of the earlier employees of Sun Microsystems, coined the phrase "The Network is the Computer" to describe the emerging world of distributed computing. Though his vision of network based computing wasn't taken seriously at that time, the development of Internet in the later years gave way to low-cost interconnectivity of computers of different designs and operating systems. Based on client-server architecture, the network computing model was slowly gaining prominence as many big companies such as Sun, Oracle, Google, and Sales Force etc. openly committed themselves to its growth. *"Now we can talk about network computing because it's real. It's here. PCs are not going to be the device that will proliferate to 50 per cent of the world. The goal here is to deploy applications at 50 per cent or (less) cost than today in a client/server world,"* said Oracle President Ray Lane.<sup>13</sup>

### **The end of PC-era**

Many analysts felt that the browser, which for years had continued to be the sole interface to visit websites, may lose popularity with the emergence of new ways of sending and receiving digital information. In place of browser, the market witnessed growth of several Internet connected applications that apart from offering the proprietary services also allowed access to websites. Google's Deskbars was one of the principal threats to the web browser market as it enabled direct Internet searches, without utilizing Internet Explorer or any other browser. According to a report issued by Nielson/NetRatings in December 2003, three out of four home and work Internet users

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<sup>13</sup> Stuart Lauchlan, Analysis: Oracle Open World kicks off with NC push and life after Sedona, <http://www.computing.co.uk/vnunet/analysis/2130511/analysis-oracle-open-world-kicks-push-life-sedona>, 22 Sep 1997

accessed the Internet using a non-browser Internet application. Abha Bhagat, a senior analyst with Nielson/Net Ratings said: *'With 76 percent of the web surfers using Internet applications, overall performance and functionality has grown beyond the browser, to become a fundamental piece of the overall desktop. It has become harder to distinguish when you're on the Internet, blurring the lines between what's sitting on the desktop and what's coming from the world wide web. People should expect that trend to continue and in fact increase over time.'*<sup>14</sup> Microsoft, the undisputed leader of desktop software market itself declared the PC era to be dead<sup>15</sup>.

However as one era approached its end, a new era was already taking over, the predicament was the uncertainty with the new era. The only certainty was about the new era was Internet was at the core of everything whereas sectors like telecom, media, information, IT, communication, entertainment and such-and-such were at the periphery. As the differentiating line across sectors and players got blurred, it was the period of anarchy to new regime formation. The disruptive forces of Internet innovations resonated across trillion-dollar multiple industrial sectors.

## **Product digitization & Wireless Everywhere**

The constant need for mobility and accessibility of information propelled the growth of wireless services. New technologies such as Bluetooth, Wi-Fi, Ultra wideband, RF transmissions were increasingly available not only on devices such as mobile phones or smart phones, but also on wired devices such as keyboards and on mouse. Analysts predicted that the wireless services would continue to grow as more and more homes and corporate networks make use of new consumer devices based on the emergent technologies. According to an In-Stat estimate, the global Wi-Fi hardware market was worth nearly US \$ 5.2 billion in 2005. Further, the sale of wireless enabled laptop was estimated to be nearly 15 million in 2005, compared to 2.9 million in 2001. With wireless gaining increasing popularity, more and more service providers attempted to create hotspot footprints on multiple locations such as airports, hotels, train stations, and cafes. The number of such hotspot locations available for public access was estimated to grow worldwide from 2,000 in 2001 to 42,000 in 2006 (**Exhibit 8**).

Acceptance of digitized products in many segments happened faster than many expected, and even took the most optimists also by sheer surprise. According to market-research firm NPD<sup>16</sup>, Apple ranked 2<sup>nd</sup> in music retailing, trailing behind only Wal-Mart. Convergence were not limited within sectors, but with gadgets also. Accessing Internet from mobile devices had an increase of 100% in 2007, with a low base of 1% penetration in the U.S.<sup>17</sup>, highlighting the potential it has. As telecom and Internet merged, so did the device, in multiple ways, in terms of accessing Internet from a PC or a cellphone, or having voice-transfer from a phone or aVoIP-enabled PC.

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<sup>14</sup> Survey: Three Out of Four People Connect to Internet Without Web Browser, <http://www.techbuilder.org/news/59201700>, Dec. 31, 2003

<sup>15</sup> FT.com Microsoft's Ozzie declares end to PC era <http://www.ft.com/cms/s/2/e381965a-1d8e-11db-bf06-0000779e2340.html> July 27, 2006

<sup>16</sup> Salon.com, No. 2 Only Wal-Mart beats Apple in Music Sales, [http://machinist.salon.com/blog/2008/02/26/itunes\\_sales/](http://machinist.salon.com/blog/2008/02/26/itunes_sales/), Feb 26, 2008

<sup>17</sup> Boston.com, Web-surfing by cellphone doubled in '07, [http://www.boston.com/business/technology/articles/2008/03/05/web\\_surfing\\_by\\_cellphone\\_doubled\\_in\\_07/](http://www.boston.com/business/technology/articles/2008/03/05/web_surfing_by_cellphone_doubled_in_07/), March 5, 2008

## Convergence: IP-based Services and Triple Play

Another visible trend that was slowly gaining prominence, particularly in developing countries was the growth of VoIP as a cheap alternative to the traditional modes of communication. The availability of higher bandwidth and rising popularity of VoIP applications like Skype offered users the ability to communicate at lower costs compared to the normal PSTN or cellular services (**Exhibit 7**). According to a report from Point Topic<sup>18</sup>, the number of subscribers of retail VoIP services increased by 83 percent during 2005 from 10.3 million at the beginning of 2008. Though the market was dominated by Japan, France and US in terms of subscriber numbers, it was primarily witnessing rapid growth in populous developing countries (**Exhibit 8**). And all major Internet firms eventually started offering VoIP services, either through costly acquisitions as eBay did or by more moderate acquisitions or through new applications development.

IPTV was another IP based service that allowed viewers to watch interactive television programs over Internet (**Exhibit 9**). In 2005, the global IPTV revenue was nearly US\$ 880 million. As of June 2006, there were over 1,300 free IPTV channels available on Internet. According to a research report by iSupply Corp., the number of IPTV users is expected to increase by a phenomenal 92.1 percent per year, brining the total number of subscribers to 63 million in 2010, or 26 times greater than its 2005 value of 2.4 million, following what's otherwise knows as 'Internet rate of Growth'. *"The fight to capture the expanding base of IPTV subscribers will put telecom operators on a collision course with existing pay-TV market competitors and with a new class of broadband video portals as they roll-out progressively more sophisticated offerings,"* Mark Kirstein, vice president, multimedia content and services for iSuppli, said in a statement. There were already fierce competition between telecom players, Cable Service Providers (CSPs), and Internet Service Providers to gain the supremacy of the 'pipe' to wire the consumer with the possibilities of landline, broadband, cable and what not.

The IP-based platform offered several advantages in terms of reduced cost, greater interactivity and increased personalization. However, the downside remained that all such services depended heavily on broadband infrastructure. Seeing high growth in the IPTV segment, few communication companies such as AT&T and Verizon were setting up the requisite infrastructure by developing high-speed networks. The commercial bundling of IPTV (clubbed with Video on Demand), VoIP and Internet Access was often called Triple Play.

## Higher Broadband Adoption

The tremendous growth of broadband paved the way for numerous other technologies, products and services. DSL continued to be the most popular technology with nearly 65% market share, globally. In 2005, the total broadband subscriber base reached 209.3 million, 37% more than that in 2004. The USA remained the largest broadband market with over 43.4m lines, followed by China (37.5m lines) and Japan (22.1m lines, **Exhibit 10**).

Increased end-user choice, monthly price cuts akin to the strip-tease of pricing by service providers, and the proliferation of broadband-enabled applications and services propelled the growth of broadband. Amy Harris Lind, program manager, Consumer Broadband Markets said, *'Consumer demand for broadband remains strong, with three out of four global online households connecting to the Internet via broadband in 2010. However, as competition intensifies and new subscriber growth begins to lag, providers will need to focus on bundling, tiering, and promoting applications that take advantage of broadband's faster speeds to differentiate their broadband offerings, increase average revenue per user, and reduce customer churn.'*

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<sup>18</sup> Point Topic was a UK-based company offering information on broadband communication services.

## Content Syndication – RSS

Defined variously as Rich Site Summary or Real Simple Syndication, RSS was used to syndicate news and content over the Internet through information one-liners called feeds. A user, in order to receive RSS feeds, installed an application called RSS Aggregator on his desktop which collected news and information from the subscribed RSS websites. The RSS service grew by leaps and bounds as more and more users used the service for up-to-the-minute information on areas of their interest (**Exhibit 11**). Owing to the rising popularity of online advertisements, many companies had started bringing advertising to RSS feeds as well. For instance, Topix.net (news site), Moreover Technologies (search services) and Feedster (news and blog site) delivered advertisements in their RSS feeds. Rich Skrenta, CEO of Topix, said that with the recent growth of RSS, advertising is likely to stay. *"Folks understand that if there's not a way to monetize content, there's not going to be content,"* he said.<sup>19</sup>

## Web Hosting

Till few years ago, the web hosting industry was a highly resource-intensive business. There were fewer players and the costs of maintenance were exorbitantly high. However, the falling hardware and software prices coupled with new mode of revenues (like online advertisements) saw more number of players entering this business. Most of them differentiated themselves based on value added services such as e-commerce initiatives, up-to-date security measures, speed of Internet access, server size, server speed, size of the data pipe, storage space, user friendly control panels, pricing etc. In 2006, US had the maximum number of web hosting companies (**Exhibit 12**). According to a May 2005 study by IDC, the U.S. web hosting services market stood at \$6.1 billion in 2004, and it was expected that the revenue would grow at CAGR of 13.4% to \$11.4 billion in 2009. With rising competition, the hosting business, quite like that of computer hardware, evolved like a technology commodity, making it difficult for the hosting companies to charge premium for their services. The competition further intensified as the players competed on global rates. According to one Yankee Group senior analyst Sanjeev Aggarwal, *'bundling of tools and services to support online advertising and marketing'* came as the 2<sup>nd</sup> driver after price in the decision making regarding selection of hosting services<sup>20</sup>.

In the emerging business scenario, the players found a new opportunity for growth in the hosted-applications business. Traditionally, web hosts gave their customers server space only, leaving the website development responsibilities on the clients.. However, with a hosted application, web hosts provided customers websites as well, either free or at very low costs. Geocities was a popular hosted application service provider that offered a wide range of services and online web development tools.

## Electronic Publishing

E-publishing comprised technology and business models that involved the production, maintenance, archiving and distribution of documents in electronic form. The advent of electronic publishing broadened the scope and market of the traditional print publishing business in terms of content, and at the same time threatened its delivery model. Electronic Publishing was already 'in' as publishers of books, journals, newspapers, magazines – all adopted the 'e' route to get more eyeballs and ad-revenue and/or publicity/sales opportunities. The demand for electronically published content was driven by the developments in digital storage technology and the use of Internet for information search, business and entertainment. An OECD report of 2005 highlighted the list of e-books that were popular in different countries. In France, most of the e-books sold were on literature, Germany and Japan read mostly non fiction, in UK it was scientific and technical books, South Koreans focused reference books, while Australians mostly purchased educational books

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<sup>19</sup> Cyrus Farivar, RSS Feeds Hunger for More Ads, <http://www.wired.com/news/technology/0,1282,65347,00.html>, Oct, 15, 2004

<sup>20</sup> Jay Lyman, Online Advertising Opens Up, <http://www.thewhir.com/features/lyman-onlineads.cfm>, June 5, 2005

E-publishing offered inherent benefits as it allowed publications to reach global readership at minimum cost. Publishers often followed different pricing models when it came to offering e-books. For instance, parallel print and electronic versions, free electronic versions for print subscribers, selling single articles, time-bound subscriptions etc. While e-publications were generally cheaper compared to print publications (as development and distribution costs were low), still, due to the low levels of Internet connectivity, this business had not seen much success in developing countries. Another important concern in e-publishing was the issue of copyrights and intellectual property rights. A number of countries had enacted legislative laws and ratified international treaties to secure copyright protection. Due to the complexity of intellectual property laws and their enforcement, developing countries lagged behind in this aspect also.

## Rise in Alternative Advertisements

It was in 1994 when the first ad banner was advertised by AT&T. The subsequent years saw massive increase in their popularity with some of the largest advertisers in US resorting to them as a viable, alternative mode of revenue. EBay and Google were considered front runners in this business. Analysts estimated that in 2005 the annual global advertising market was worth nearly US\$ 800 billion, of which US occupied nearly US\$ 180 billion. According to the 2004 report of Interactive Advertising Bureau and PricewaterhouseCoopers, advertisers spent nearly \$10 billion on online advertising, the highest ever spending in the sector since the dotcom bust. Spending on online ads grew at a faster rate compared to the overall ad market. A study by Universal McCann revealed that while the US online ad industry grew at 32 per cent in 2004 (from US \$7.3 billion in 2003 to US\$ 9.6 billion in 2004), the overall ad industry grew by only 5.6%. The newspaper sector was the biggest loser in the media mix in terms of share of all ad dollars. Its readership was declining, and its important base of classified ad revenue faced stiff competition from the online equivalents of eBay, Google, Craig's List, Monster.com and Match.com.

Until 2003, the online ad business was essentially a “*buyer's market*” as the supply of web inventory was larger than the demand from advertisers. As a result, online ads came at very cheap price points. However, with the gradual increase in e-commerce and web based transactions, the industry witnessed significant transformation in price dynamics. In some of the premium categories, such as automobiles, technology and business, the websites hosting online ads earned substantially leeway in offering premium ad services to advertisers (**Exhibit 13**). Thus, there was a gradual shift to “*seller's market*” where the demand for online ad inventory slowly outstripped supply on top web sites.

One observable benefit of online advertising over other formats was that it offered greater accountability and better metrics. Moreover, it also offered greater control to advertisers in attracting target customers within limited budget. For instance, online marketers employed many sophisticated performance metrics such as no. of clicks, usage pattern, effective keywords etc “*The Internet continues to shape the media landscape as more advertising dollars are going online,*” said Peter Petrusky, Director, Advisory Services, PricewaterhouseCoopers. “*It is abundantly clear that marketers are seeing a compelling opportunity to leverage the Internet as a powerful medium that drives both branding and sales results.*”<sup>21</sup>

The importance of online advertisement came as the most important point as Microsoft bid for Yahoo! in January 2008. While clarifying the objectives of the bid to acquire Yahoo! to the employees of Microsoft, Kevin Johnson, President – Platforms and Services Division said<sup>22</sup>:

*‘...a couple of key points about the online advertising industry because I think it's helpful for you to understand why we think this combination is so important. First of all, online advertising is a big*

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<sup>21</sup> Internet Advertising Revenues Close to \$4 Billion for Q1 2006, [http://www.iab.net/news/pr\\_2006\\_05\\_30.asp](http://www.iab.net/news/pr_2006_05_30.asp), May 30, 2006

<sup>22</sup> Security Exchange Commission (SEC) at <http://sec.gov/Archives/edgar/data/789019/000095012308001107/y47867de425.htm> Feb 1 2008

industry. Today, it's a \$40-billion market, and that market is projected to double in the next three years to over \$80 billion. It's not only an economic opportunity, but it's a strategic opportunity.'

## **Blogs, Social Networking and Citizen Journalism**

Another important trend was the growth of blogs and social networking sites that gave tremendous power to Internet users to communicate, interact and share information. According to Technorati, there were 60 times more blogs in 2005 than that, three years ago. The Internet had emerged as a powerful source of information as increasing amount of data went online. As a consequence, there was explosion of freely available content with active participation of netizens partaking in weblogs, citizen journalism and in social networking sites. The advertisement in social networking site alone stood at a whopping \$1.2 billion in 2007, which was expected to grow to \$2.1 billion in 2008<sup>23</sup>.

At the same time, short-term indicators didn't paint a rosy picture about the 'New Big Thing' called Social Networking over the Internet. BusinessWeek (2008)<sup>24</sup> stated: *'MySpace, the largest social network, has slipped from a peak of 72 million users in October to 68.9 million in December, ComScore says. The total number of people on such sites is still increasing at an 11.5% rate, but that's down sharply from past growth rates. "What you have with social networks is the most overhyped scenario in online advertising," says Tim Vanderhook, CEO of Specific Media, which places ads for customers on a variety of Web sites.'* If true, the winner of recent past may no longer be the winner of recent future proving again how evolutionary this 'work-in-progress' of Internet with its new-age dotcoms been. Another piece of statistics with another leading social networking site showed the opposite as Facebook grew its traffic in the same month, January 2008<sup>25</sup>. Even if the social networking sites proved to be a hit with people, it was not so for advertisers as Google co-founder Sergey Brin commented on the loss they made by promising a \$900 million ad-deal with MySpace alone: *"I don't think we have the killer, best way to advertise and monetize social networks yet"*<sup>26</sup>. The battle was back to the one that dotcom boom too faced in the days of e-commerce: converting eyeballs to dollars.

BusinessWeek, in an article titled 'Blogs will change your business'<sup>27</sup> stated: *'It doesn't matter whether you're shipping paper clips, pork bellies, or videos of Britney in a bikini, blogs are a phenomenon that you cannot ignore, postpone, or delegate. Given the changes barreling down upon us, Blogs are not a business elective. They're a prerequisite. (And yes, that goes for us, too).'* And jokes apart, the pain is worst for media giants like McGraw-Hill (owner of BusinessWeek), the New York Times, and others who traditionally had substantial parts of their revenues from offline (print) advertisements.

## **Streaming Media**

The streaming media technology (variably called web casts, pod casts) was a cheap, non-interactive technology that took a single content source and distributed it to many simultaneous listeners or viewers on Internet. Often used to cover live events, such as online music, video, conferences, presentations etc, the streaming media technology was gaining widespread popularity. *"Consumers were already accustomed to downloading music for playback on portable devices - this is a well-engrained activity that precedes online digital music,"* said Freedman. *"However, the downloading of online 'audio blogs' for portable on-demand consumption is certainly new. Yes, the roots of podcasting lie in non-commercial amateur blogging, but podcasting's non-commercial status is changing as more businesses begin to find creative ways to use this new*

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<sup>23</sup> BusinessWeek, Generation MySpace Getting fed up  
[http://www.businessweek.com/magazine/content/08\\_07/b4071054390809.htm?campaign\\_id=rss\\_topStories](http://www.businessweek.com/magazine/content/08_07/b4071054390809.htm?campaign_id=rss_topStories), February 7, 2008

<sup>24</sup> Ibid.

<sup>25</sup> **Vanelsas, A, Social Social networking may be declining, social interaction won't,**  
<http://vanelsas.wordpress.com/2008/02/08/social-networking-may-be-declining-social-interaction-wont/>,  
**February 8, 2008**

<sup>26</sup> Ibid. BusinessWeek, Generation MySpace Getting fed up

<sup>27</sup> BusinessWeek, May 2005, [http://www.businessweek.com/magazine/content/05\\_18/b3931001\\_mz001.htm](http://www.businessweek.com/magazine/content/05_18/b3931001_mz001.htm)

*delivery medium to push audio content.*<sup>28</sup> Web casts relating to computers, technology, and news were immensely popular on Internet. Several broadcasters like BBC, CNN, Vatican Radio, Al Jazeera etc. offered web cast services (**Exhibit 14 & 15**) along with features like Citizen Journalism with more user participations, & interactivity. Most media firms also had feedback mechanism to their articles/videos, and introduced blogs in their sites too where readers can contribute or debate over others views.

## **Customized Search and 3D Search**

The intense competition in the search engine market had prompted the search engines to differentiate themselves in terms of technology as well as service offerings. While, Google focused entirely on its technology, others like Yahoo! focused more on their portal services. A few others (like AOL, a marketing-led organization) continued marketing their brands while farming out their technology to other search providers. Vivisimo, a Pittsburg based company came up with a clustering technology, that could classify search results based on clustering and meta-search technology. The company made active use of business intelligence and data mining techniques to explore its database and to bring out the veiled and hidden relationships therein. Groxis Inc., founded in 2001, created Grokker, a knowledge mapping and information visualization tool that not only sorted search results into categories but also “*mapped*” the results in a holistic way, showing each category as a colorful circle. Within each circle, subcategories appeared as more could be clicked and zoomed in on. Eureka Inc., a startup launched in January 2004, specialized in providing highly personalized search results to users through its proprietary Search Party technology. Its search engine was capable of analyzing the search behavior of its users and supplied results based on their preferences and interests.

In early 2005, a beta search engine from Los Angeles based Inozon was introduced that offered users a new way to search the Internet for products and information. Based on advanced 3D technology, the company offered a highly interactive and dynamic search service that allowed users to search for Internet content in a virtual environment. The site could be accessed only by downloading a free plug-in offered by the company that enabled 3-D view. Quite similar to video games, Inozon’s search service generated a block of 100 to 130 results for a given search trigger. While viewing results, users could retrieve information from multiple search arenas such as, shopping networks, paid listing networks, directories, the web - all without exiting the environment. The company claimed that the advertisers could benefit from its service by displaying 3D models of their products and making use of unlimited voice advertisements played at selected locations. Ashkan Bashy, founder of Inozon, said, “*Searching for information has become a part of our daily life, and yet the full power of our computers and the Internet was not being harnessed by today’s search engines. With decreases in the cost of computing and increases in processing power and high-speed Internet access, Inozon is harnessing these new capabilities to revolutionize the search industry.*”<sup>29</sup>

## **FUTURE OUTLOOK**

Analysts opined that the knowledge economy that started around early 1990s was slowly giving way to intangible electronic economy (**Exhibit 16**). Knowledge assets and collaboration assets formed an important part of the intangible economy and many of the emerging Internet companies relied on this emerging economy.

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<sup>28</sup> Podcasting Users to Approach 60 Million US Consumers by 2010, <http://www.tdgresearch.com/press044.htm>, June 15, 2005

<sup>29</sup> Web Optimizer, New 3D search engine from Inozon, [http://www.weboptimiser.com/search\\_engine\\_marketing\\_news/13013332.html](http://www.weboptimiser.com/search_engine_marketing_news/13013332.html)

## Web 2.0

Web 2.0 was a phrase coined by O'Reilly Media in 2004 for several second-generation of Internet-based services such as social networking sites, wikis and communication tools — that let people collaborate and share information in entirely new ways. The dotcom bubble bust was followed by the evolution of new generation of technology applications that relied more on web for offering services to customers (**Exhibit 17 & 18**). Many analysts felt that the effects of Web 2.0 could be far reaching, as it had the power to bridge the digital divide and the gap between the haves and the have nots.

However there were others who felt Web 2.0 is all nonsense. The definition of Web 2.0 (MRPA, 2007)<sup>30</sup> itself admits that there's no 'technical innovation' in the so-called 2.0 over its 1.0 version:

*'Tim O'Reilly created the term Web 2.0 in 2004 as a title for a developer conference. Actually, there is not a clear-cut definition for Web 2.0 but it typically describes a form of user-to-user communication over the Internet. For unlike Web 1.0, Web 2.0 is not a technical innovation.'* Tim O'Reilly (2005)<sup>31</sup> himself agrees that 'like many important concepts, Web 2.0 doesn't have a hard boundary, but rather, a gravitational core.' He goes on to add 'One of the key lessons of the Web 2.0 era is this: Users add value.'

## Network Neutrality

'Democracy' and 'Innovation' were the two main propellers of Internet. The democratic structure gave the users full and fair access to online data irrespective of the network owner or bandwidth speed. This was often called network neutrality as the owners of the various cable and telecom services did not infringe on the users freedom to access any website that was available online. However, this model of providing unrestricted access to any website seemed to enter troubled waters as some of the world's largest cable companies such as AT&T, Comcast, Verizon and Time Warner expressed intentions of becoming Internet gatekeepers by offering differential service or speed of service on data access. These companies believed that while they built the Internet pipeline, major profits were being derived by search engines and other ecommerce sites. In the new scenario that was emerging, these cable companies sought to tax online websites for speedy access of data. This was resented by many supporters of net neutrality who felt that such a discriminatory practice would go against the spirit of a democratic Internet that allowed users full access to any website without providing any differential bandwidth. Many felt that without net neutrality, the Internet would look more like cable TV, with customers having a limited role of choosing from among the choices offered by network owners. A website supporting network neutrality noted at one place, *"The choice we face now is whether we can choose the content and services we want, or whether the broadband barons will choose for us. Decisions being made now will shape the future of the Internet for a generation."*<sup>32</sup> The cause of Net Neutrality had brought several companies together (including Microsoft, Google and Yahoo!), as none of them wanted to lose their online user base.

At the same time, Comcast<sup>33</sup> and other telecom giants owning the pipe often justified their stand of 'discriminatory broadband throttling activities' on the ground that some customers may choke the pipe by downloading video whereas others may face slower speed even in accessing more basic services like text-mails. Commenting on the issue, Michael Copps, Commissioner of the Federal

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<sup>30</sup> MRPA 'Implications of Web 2.0 for financial institutions: Be a driver, not a passenger' [http://mpr.ub.uni-muenchen.de/4316/01/MPRA\\_paper\\_4316.pdf](http://mpr.ub.uni-muenchen.de/4316/01/MPRA_paper_4316.pdf)

<sup>31</sup> O'Reilly, Tim 'What is Web 2.0' 2005

<http://faculty.fims.uwo.ca/nickerson/FIS%201311/Lecture%20Notes/Session%2004/What%20is%20Web%202.doc>

<sup>32</sup> Save the Internet, <http://www.savetheInternet.com/=faq>

<sup>33</sup> Internetnews.com, FCC continues to wrestle with Net Neutrality,

<http://www.internetnews.com/infra/article.php/3730191/FCC+Continues+to+Wrestle+With+Net+Neutrality.htm>, February 25, 2008

Communications Commission (FCC) stated *"Network operators are making choices right now that will determine how consumers will use the Internet now and in the future... Some choices may be right and some may be wrong... These are hard and complex questions."*

## Ubiquitous Computing

Ubiquitous computing referred to a scenario where embedded and universal computation would be a part of normal, everyday life of people. The role of computers would increase profoundly in the daily activities of the people, as the more developed computer networks become adaptive and self-organizing. According to a prediction by Ernst and Young, there would be nearly 10,000 telemetric devices by 2010 for transmitting and receiving data for every person on earth. Intel had taken initiatives to enable *"a future in which computing will be ubiquitous, woven seamlessly into the fabric of everyday life."*<sup>34</sup>

## Future of Media and Mass Media

Media as a sector, the primary vehicle for branding has been undergoing through 'creative destruction' by this online evolution. For example, in 1985, advertisers could reach 80% of Americans aged 18-49 by running TV commercials on only CBS, NBC and ABC. By 1994, the "big four" broadcast networks (with Fox) commanded a 52% prime-time audience share. By 2004, that share was down to 31%. Referring to this declining reach by mainstream media, Jim Stengel, Global Marketing Officer of Procter and Gamble stated: *"We must accept the fact there is no 'mass' in 'mass media' anymore, and leverage more targeted approaches. We must better understand who we are reaching as media plans become more fragmented"*<sup>35</sup>.

Media traditionally had two streams of revenue – ad-based and subscription-based. The onslaught of online media, more with the new-age dotcoms, resulted in both declining or stagnating until they embraced the online media as old-economy giants embraced e-commerce during the onslaught of 1<sup>st</sup> wave of Internet. Old-economy firms eventually own that battle as 'B2B' eventually became 'Back to Basics' as an extremely rare species of B2B firms that flourished during the dotcom boom survived to make the mark which looked so real during dotcom boom days. Marketing Managers along with media professionals in developed countries have been struggling to adjust to this new-age reality, again. In this age of 'Relentless upheaval of the media'<sup>36</sup> that exemplifies 'the creative destruction'<sup>37</sup> that Schumpeter talked about; mainstream media firms are engaged in a different race to the bottom to maintain their individual identities by collaborating with 'Frenemy'<sup>38</sup> like-elements of search-engines like Google for their very own survival.

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<sup>34</sup> Intel Corp. , Moving toward a future of ubiquitous computing, <http://www.deviceforge.com/articles/AT4466660629.html>, May 31, 2005

<sup>35</sup> A Decade in Online Advertising, [emea.doubleclick.com](http://emea.doubleclick.com), April 2005

<sup>36</sup> Goswami, Ranjit 'Relentless Upheaval in the Media' OhmyNews, November 2006, [http://english.ohmynews.com/articleview/article\\_view.asp?menu=c10400&no=330794&rel\\_no=1](http://english.ohmynews.com/articleview/article_view.asp?menu=c10400&no=330794&rel_no=1)

<sup>37</sup> 'Innovation by the entrepreneur, argued Schumpeter, led to gales of "creative destruction" as innovations caused old inventories, ideas, technologies, skills, and equipment to become obsolete.' The Concise Encyclopedia of Economics, <http://www.econlib.org/Library/Enc/bios/Schumpeter.html>. The term 'Creative Destruction' is from the 1942-book titled 'Capitalism, Socialism Democracy', by Joseph Alois Schumpeter

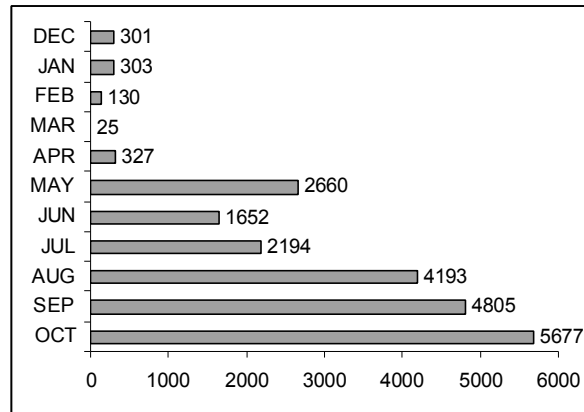
<sup>38</sup> 'Sir Martin Sorrell, the chief executive of the advertising giant WPP, had called Google a frenemy in public last fall' Valleyspeak, <http://valleywag.com/tech/valleyspeak/frenemy-261774.php>.

**Exhibit 1**  
**Weekly Market Share of Visits (U.S.)**  
**(Week Ending July 8, 2006)**

Rank	Name	Domain	Market Share (%)
1	MySpace	www.myspace.com	4.46
2	Yahoo! Mail	mail.yahoo.com	4.42
3	Yahoo!	www.yahoo.com	4.25
4	Google	www.google.com	3.89
5	MySpace - Mail	mail.myspace.com	2.85
6	MSN Hotmail	www.hotmail.com	2.39
7	MSN	www.msn.com	1.92
8	eBay	www.ebay.com	1.59
9	Yahoo! Search	search.yahoo.com	1.36
10	MSN Search	search.msn.com	0.93

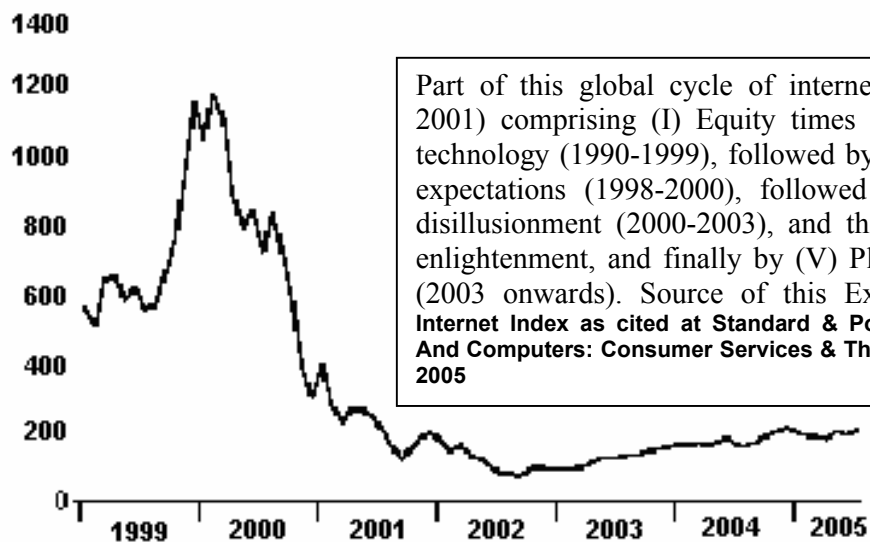
Source: Hitwise, as cited at <http://www.clickz.com/showPage.html?page=3619306>

**Exhibit 2**  
**Dotcom Job Cuts (December 1999 – October 2000)**

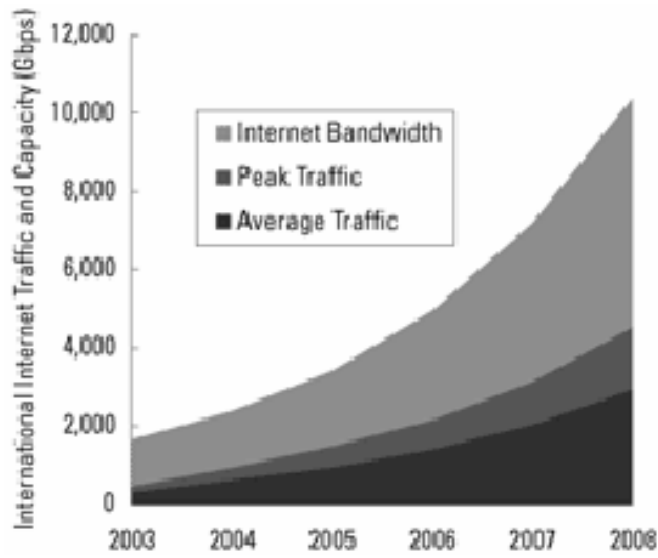


Source: Challenger, Gray & Christmas, Inc., as cited at <http://money.cnn.com/2000/10/24/technology/dotcom/>

**Exhibit 3**  
**The dotcom meltdown: Performance of Internet Stocks**

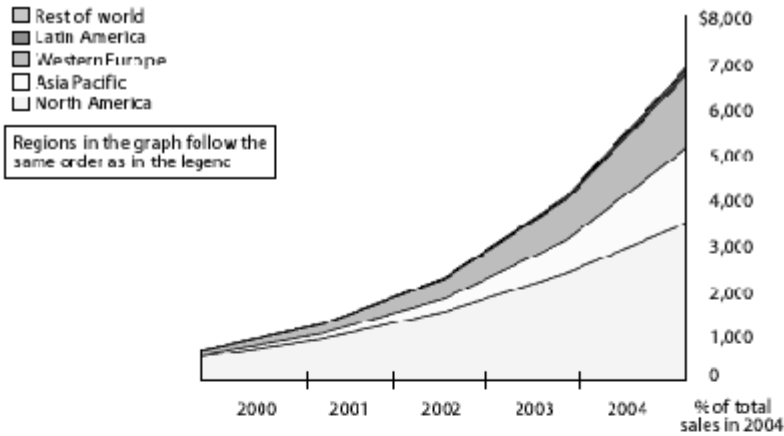


**Exhibit 4**  
**International Internet Traffic Forecast**



Source: <http://www.telegeography.com/press/releases/2005-08-23.php>

## Exhibit 5 Worldwide Ecommerce Growth



Total (billions US\$)	2000	2001	2002	2003	2004	% of total sales in 2004
<b>Total</b>	<b>\$657.0</b>	<b>\$1,233.6</b>	<b>\$2,231.2</b>	<b>\$3,979.7</b>	<b>\$6,789.8</b>	<b>8.6%</b>
<b>North America</b>	<b>\$509.3</b>	<b>\$908.6</b>	<b>\$1,495.2</b>	<b>\$2,339.0</b>	<b>\$3,456.4</b>	<b>12.8%</b>
United States	\$438.7	\$864.1	\$1,411.3	\$2,187.2	\$3,189.0	13.3%
Canada	\$17.4	\$38.0	\$68.0	\$109.6	\$160.3	9.2%
Mexico	\$3.2	\$6.6	\$15.9	\$42.3	\$107.0	8.4%
<b>Asia Pacific</b>	<b>\$53.7</b>	<b>\$117.2</b>	<b>\$205.6</b>	<b>\$724.2</b>	<b>\$1,649.0</b>	<b>8.0%</b>
Japan	\$31.9	\$64.4	\$146.8	\$363.6	\$806.3	8.4%
Australia	\$5.6	\$14.0	\$36.9	\$95.7	\$207.6	16.4%
Korea, Republic of	\$5.6	\$14.1	\$39.3	\$100.5	\$205.7	16.4%
Taiwan	\$4.1	\$10.7	\$30.0	\$80.6	\$175.8	16.4%
All other	\$6.5	\$14.0	\$60.6	\$139.5	\$197.1	2.7%
<b>Western Europe</b>	<b>\$87.4</b>	<b>\$194.8</b>	<b>\$422.1</b>	<b>\$853.3</b>	<b>\$1,533.2</b>	<b>6.0%</b>
Germany	\$20.6	\$46.4	\$102.0	\$211.1	\$386.5	6.5%
United Kingdom	\$17.2	\$38.5	\$83.2	\$165.6	\$288.8	7.1%
France	\$9.9	\$22.1	\$49.1	\$104.8	\$206.4	5.0%
Italy	\$7.2	\$15.6	\$33.8	\$71.4	\$142.4	4.3%
Netherlands	\$6.5	\$14.4	\$33.7	\$59.5	\$98.3	9.2%
All other	\$25.9	\$57.7	\$123.4	\$240.8	\$410.8	6.0%
<b>Latin America</b>	<b>\$3.6</b>	<b>\$5.8</b>	<b>\$13.7</b>	<b>\$31.8</b>	<b>\$81.8</b>	<b>2.4%</b>
<b>Rest of world</b>	<b>\$3.2</b>	<b>\$6.2</b>	<b>\$13.5</b>	<b>\$31.5</b>	<b>\$68.6</b>	<b>2.4%</b>

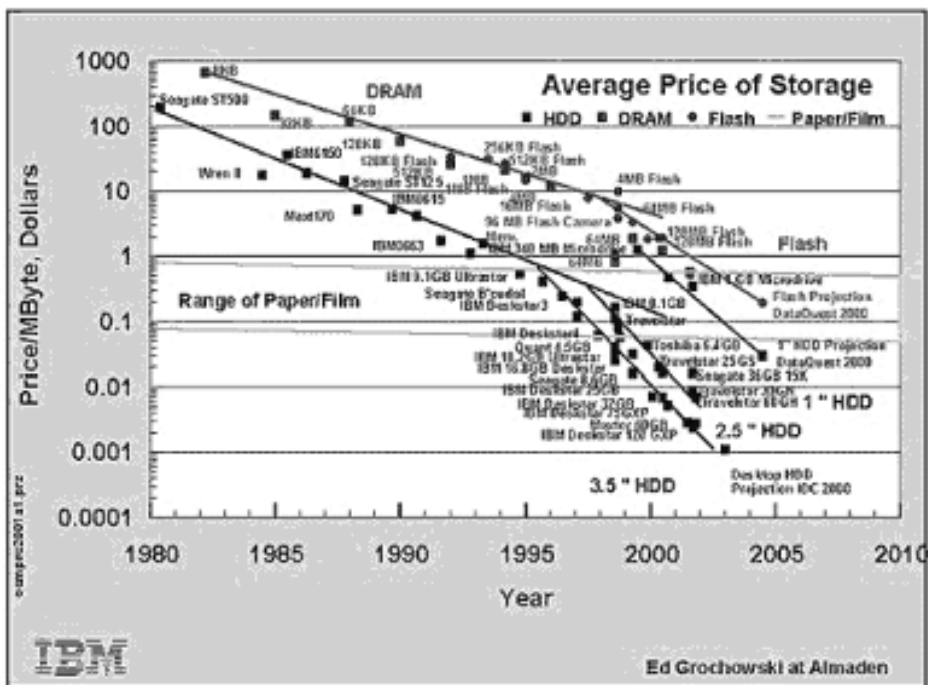
(Totals may not equal sum of rows due to rounding)

Source: Forrester Research, Inc.

Source:

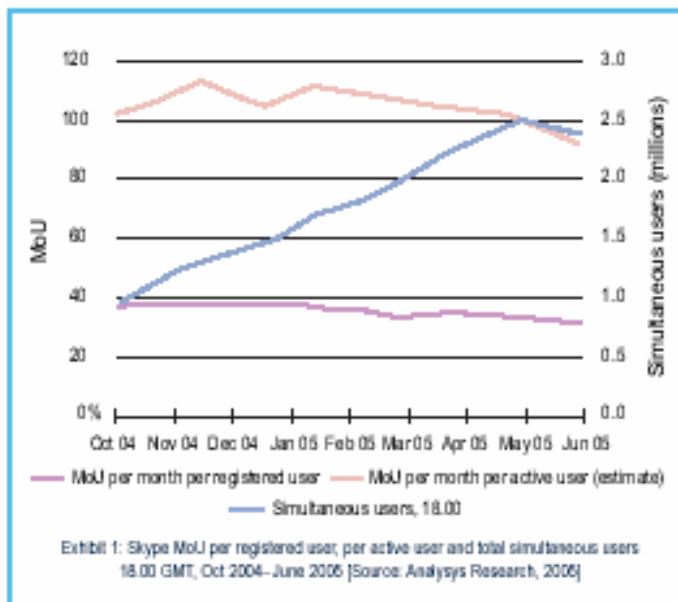
<http://web.archive.org/web/20020210142542/http://www.forrester.com/ER/Press/ForrFind/0,1768,0,00.html>

### Exhibit 6 Hardware Costs – The Declining Trend



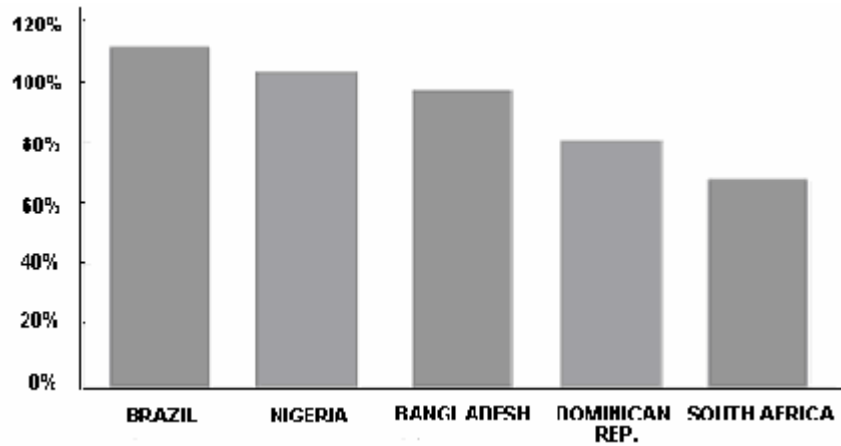
Source: IBM as cited at [http://www.lockss.org/lockss/For\\_Librarians](http://www.lockss.org/lockss/For_Librarians)

### Exhibit 7 Growth in Minutes of Usage in Skypeworld



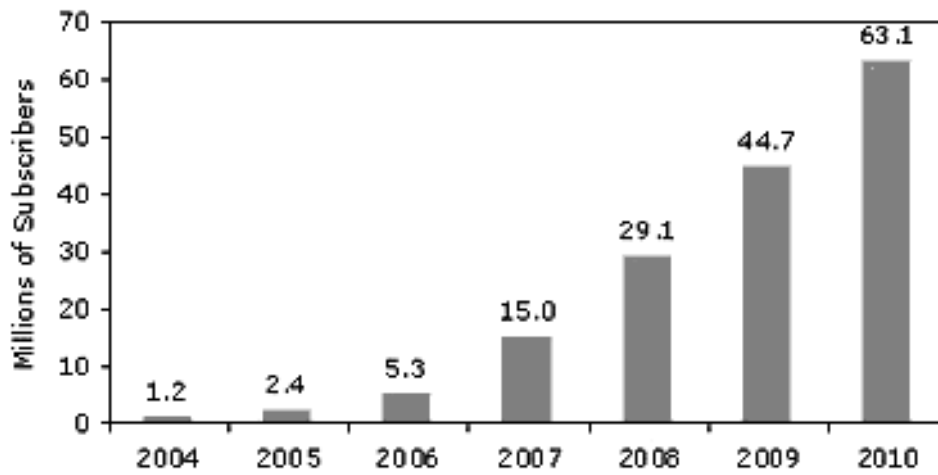
source: [www.analysis.com](http://www.analysis.com)

**Exhibit 8**  
**Top International VoIP Destinations by Growth, 2004**



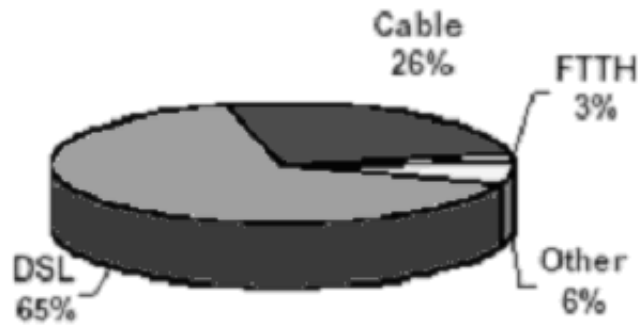
Source: <http://www.telegeography.com/press/releases/2005-12-15.php>

**Exhibit 9**  
**IPTV Subscribers**



Source: <http://www.ibtimes.com/data/articlethumbs/2564.jpg>

**Exhibit 10**  
**Global Broadband Subscribers by Type, 2Q05**



Source: [www.broadbandtrends.com/Report%20Summary/2005/BBT-2Q05BBTrends\\_051190\\_TOC.pdf](http://www.broadbandtrends.com/Report%20Summary/2005/BBT-2Q05BBTrends_051190_TOC.pdf)

**Exhibit 11  
RSS Growth**

<b>Month</b>	<b>Number of feeds (in thousands)</b>
January 2004	307
February 2004	382
March 2004	347
April 2004	382
May 2004	429
June 2004	478
July 2004	577
August 2004	644
September 2004	701
October 2004	758
November 2004	946
December 2004	2,746
January 2005	4,316
February 2005	5,295
March 2005	6,099
April 2005	6,497
May 2005	8,468
June 2005	10,439
July 2005	12,007
August 2005	13,605

Source: [http://www.businessweek.com/technology/tech\\_stats/rss050923.htm](http://www.businessweek.com/technology/tech_stats/rss050923.htm)

**Exhibit 12  
Country-wise Web Hosting Companies (Sep. 2006)**

<b>Country</b>	<b>Rank</b>	<b>Hosting Companies</b>
United States	1	24,726
Canada	2	2,689
United Kingdom	3	2,566
Germany	4	2,028
Spain	5	1,365
France	6	1,087
Italy	7	1,050
Netherlands, The	8	1,046
Turkey	9	1,030
Korea	10	898

Source: <http://www.webhosting.info/webhosts/globalstats/>

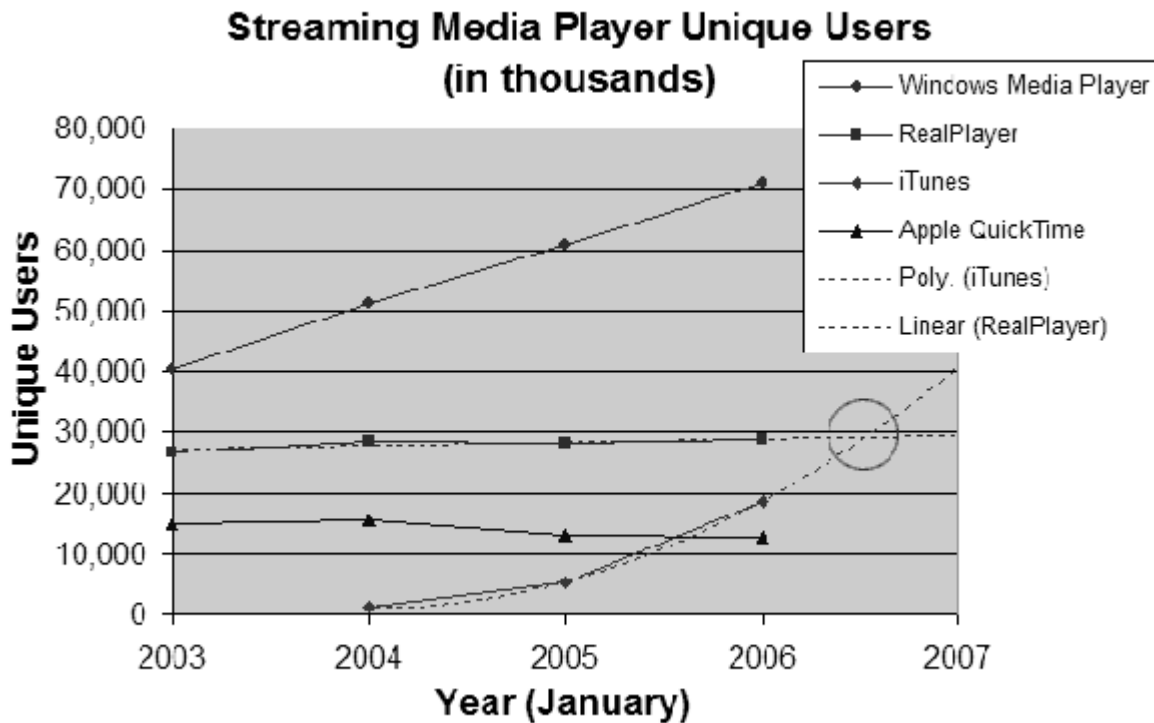
**Exhibit 13**  
**Top 10 Advertiser Categories (October 2004 figure)**

Rank	Category	Estimated Expenditures	Impressions
1	Technology	\$187,259,200	17,140,490,000
2	Business	\$90,043,820	8,287,853,000
3	Retail	\$87,508,700	8,564,552,300
4	Finance	\$79,679,330	7,125,604,000
5	Sports & Leisure	\$59,005,300	6,737,880,700
6	Travel	\$51,874,700	4,069,423,000
7	Entertainment	\$43,628,300	3,052,458,000
8	Home	\$42,691,000	3,156,248,000
9	Health	\$28,142,900	2,187,791,000
10	Automotive	\$23,160,000	1,792,670,000

Source: AdZone Research, Inc

Source: <http://www.clickz.com/showPage.html?page=3450261>

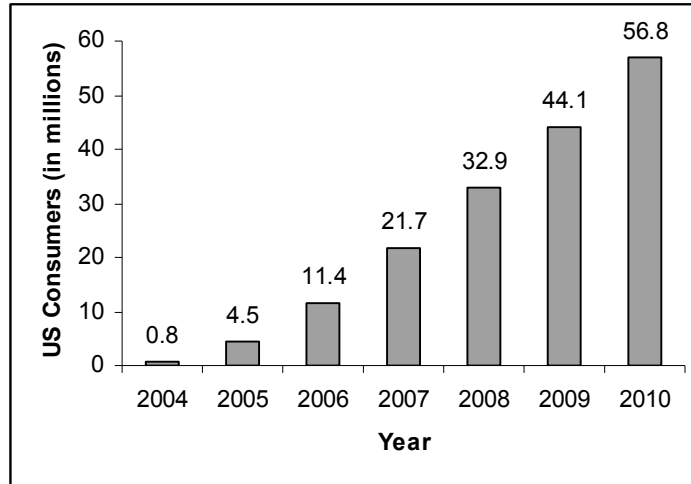
**Exhibit 14**  
**Streaming Media Players - Unique User Trends**



(Source: Nielsen//NetRatings, extrapolated by Web Site Optimization, LLC)

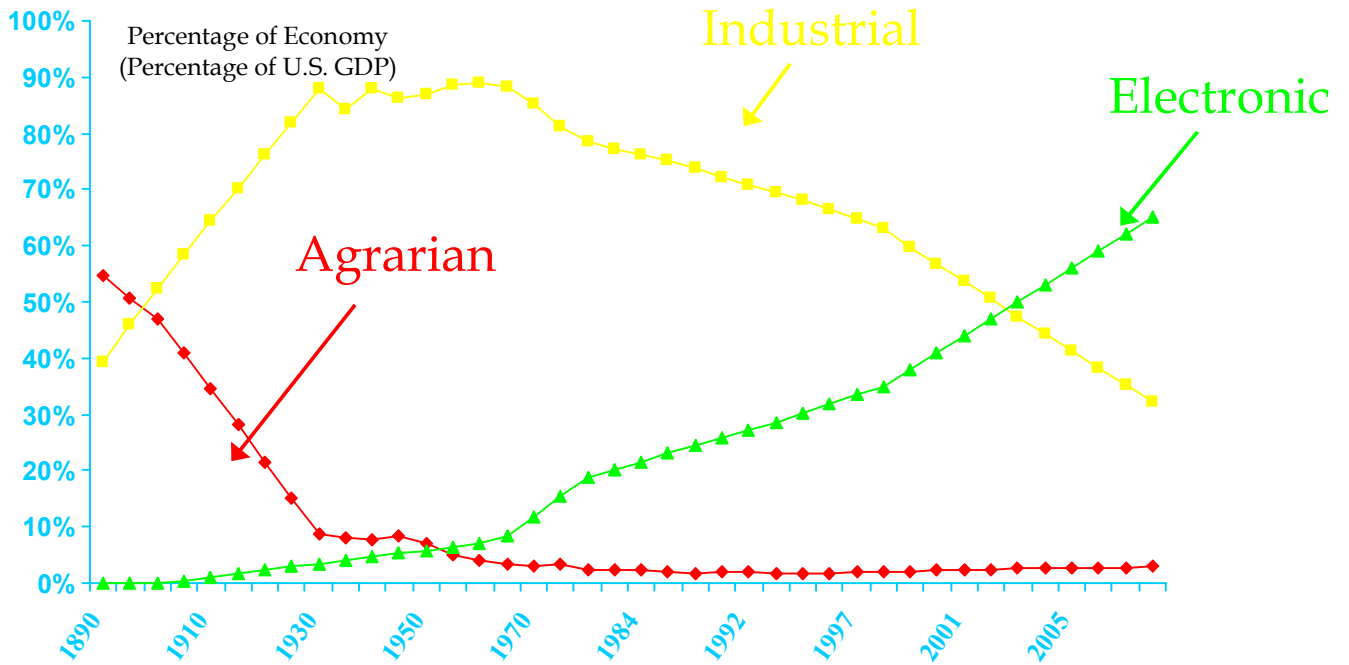
Source: Nielsen/Net ratings as cited at <http://www.websiteoptimization.com/bw/0603/>

**Exhibit 15**  
**Growth in Podcast Usage among US Consumers: 2004 - 2010**



Source: [http://www.tdgresearch.com/images/chart\\_podcasting.jpg](http://www.tdgresearch.com/images/chart_podcasting.jpg)

**Exhibit 16**  
**The fundamentals of the global economy are undergoing dramatic transformation**



Source: Marvin Zonis & Associates

**Exhibit 17**  
**Web 1.0 and Web 2.0**

<b>Web 1.0</b>	<b>Web 2.0</b>
DoubleClick	Google AdSense
Ofoto	Flickr
Akamai	BitTorrent
mp3.com	Napster
Britannica Online	Wikipedia
personal websites	blogging
evite	upcoming.org and EVDB
domain name speculation	search engine optimization
page views	cost per click
screen scraping	web services
publishing	participation
content management systems	wikis
directories (taxonomy)	tagging ("folksonomy")
stickiness	syndication

Source: <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>

**Exhibit 18**  
**How Respondents Assessed Predictions about the Impact of the Internet in the Next Decade**

	<i>Agree</i>	<i>Disagree</i>	<i>Challenged the prediction</i>	<i>Did not respond</i>
Network infrastructure: At least one devastating attack will occur in the next 10 years on the networked information infrastructure or the country's power grid.	66%	11%	7%	16%
Embedded networks: At computing devices become embedded in everything from clothes to appliances to cars to phones, these networked devices will allow greater surveillance and businesses. By 2014, there will be increasing numbers of arrests based on this kind of surveillance by democratic governments as well as authoritarian regimes.	59%	15%	8%	17%
Formal education: Enabled by information technologies, the pace of learning in the next decade will increasingly be set by student choices. In ten years, most students will spend at least part "school days" in virtual classes, grouped online with others who share their interests, mastery, and skills.	57%	18%	9%	17%
Families: By 2014, as tele work and home-schooling expand, the boundaries between work and leisure will diminish significantly. This will sharply alter everyday family dynamics.	56%	17%	9%	18%
Creativity: Pervasive high-speed information networks will usher in an age of creativity in which people use the Internet to collaborate with others and take advantage of digital libraries to make more music, art, and literature. A large body of independently-produced creative works will be freely circulated online and will command widespread attention from the public.	54%	18%	9%	20%
Personal entertainment: By 2014. All media, including audio, video, print, and voice will link to networked devices around the household, replacing the television's central place in the home.	53%	18%	10%	19%
Internet connections: By 2014. 90% of all Americans will go online from home via high-speed networks.	52%	20%	8%	20%
Digital products: In 2014, it will still be the case that the vast majority of Internet users will easily be able to copy and distribute digital products freely though anonymous peer-to-peer network.	50%	23%	10%	17%
Extreme communities: Groups of zealots in politics, in religion, and in groups advocating violence will solidify, and their numbers will increase by 2014 as tight personal networks flourish online.	48%	22%	11%	19%
Civic engagement: Civic involvement will increase substantially in the next 10 years, thanks to ever-growing use of the Internet. That would include membership in groups of all kinds, including professional social, sports, political and religious organizations-and perhaps bowling leagues.	42%	29%	13%	17%
Health system change: In 10 years, the increasing use of online medical resources will yield substantial improvement in many of the pervasive problems now facing healthcare – including rising healthcare costs, poor customer service, the high prevalence of medical mistakes, malpractice concerns, and lack of access to medical care for many Americans.	39%	30%	11%	19%
Social networks: By 2014 use of the Internet will increase the size of people's social networks for beyond what has traditionally been the case. This will enhance trust in society, as people have a wider range of sources from which to discover and verify information about job opportunities personal services common interests and products.	39%	20%	27%	15%
Politics: By 2014 most people will use the Internet in a way that filter out information that challenges their viewpoints on political and social issues. This will future political discourse and make it difficult or impossible to develop meaningful consensus on public problems.	32%	37%	13%	18%
Democratic processes: By 2014 network security concerns will be solved and more than half of American votes will be cast online resulting in increased voter turnout.	32%	35%	15%	18%

Source: Pew Internet & American Life Project Experts Survey, 2004, [http://www.pewinternet.org/pdfs/PIP\\_Future\\_of\\_Internet.pdf](http://www.pewinternet.org/pdfs/PIP_Future_of_Internet.pdf)

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