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2020 media futures trends package

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2020 Media Futures Trends Package

November 16, 2010

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Summary and Acknowledgements

2020 Media Futures is a multi-industry strategic foresight project designed to understand and envision what media may look like in the year 2020; what kind of cross-platform Internet environment may shape our media and entertainment in the coming decade; and how Ontario firms take action today toward capturing and maintaining positions of national and international leadership.

The project asks: In the face of sweeping and disruptive changes driven by the Internet, how can we help companies in the book, film, interactive, magazine, music and television industries – Ontario’s Creative and Entertainment Cluster – to better identify emerging opportunities, create more resilient strategic plans and partnerships, boost innovation, and compete in increasingly demanding global markets?

This document is a product of our ‘horizon scanning’ process. Trends and Countertrends represent directional patterns in data, a rising tide of signals, in which, for example, a critical mass of headlines about people using Facebook to call for help in emergency situations points to a larger trend regarding the increasing mission-critical importance of social networks. To date we have identified more than sixty trends at the project website: <http://2020mediafutures.ca/Trends>

This Trends Package has been developed by:
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Draft trends from which the package was developed were collected via two Trend Workshops held 29 June and 6 July 2010, at Strategic Innovation Lab (sLab), OCAD University, Toronto. Workshop contributors included participants from the project partnership and from the Cluster. The initiative has been lead by:

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2020 Media Futures Trends Package

SOCIAL

<http://2020mediafutures.ca/>

Super Ordinary Lab
& Changeist

Social Trends

- **Remix Culture:** Remix Culture describes the emergence of cultural artifacts and processes created to include recombination of other works, enabled by the digitization of media, as well as the availability of knowledge about others' creations provided by open global networks.
- **Education 2.0:** New technologies in the classroom, and the dynamics of the Web, are transforming the ways in which students and teachers interact with educational media and practices, opening the learning experience up to many new approaches.
- **Game of Life:** As the "social web" embeds a layer of additional data on our day-to-day lives, playfulness and competition are assuming larger roles in driving behaviors, connections and discovery.
- **Attention Fragmentation:** The fragmentation of content into smaller bits, consumed rapidly and frequently, has both been driven by and is causing further shifts in cognitive patterns, toward shorter attention spans.
- **Language Clash:** While English has been the dominant language of online content for the past two decades, shifting demographics of technology usage, as well as changing national populations, means this dominant position may be relinquished in the next two decades.

Remix Culture

Trend type: Social

Industries: All

Remix Culture describes the emergence of cultural artifacts and processes created to include recombination of other works, enabled by the digitization of media, as well as the availability of knowledge about others' creations provided by open global networks.

Wikipedia defines a remix as “an alternate mix of a song made using the techniques of audio editing...” Remix was a feature of recorded music long before “new media” appeared but has grown in importance because of the ease with which digital content can be remixed. We expand this definition to incorporate the contemporary practice of creating new cultural artifacts by remixing prior cultural elements to create something new.

Although remix has always been an aspect of human culture the phenomenon takes on more significance in the digital age, because of the ease with which a creator of a new cultural artifact can “steal” to use the term from Stravinsky’s observation that all composers steal and the great composers steal the most. Music, text and images are easily transferred from one digital device to another especially because of the Internet which allows this phenomenon to take place on a global scale.

Signals:

- The rise of, and subsequent success of, hip-hop music from the 1980s to the present has relied in part on the creative re-use of sampling from other works, recombined in new ways to form new work. This has become a mainstay of both mainstream music in the 2000s, with

the tools to create it increasingly easy to obtain and manage.

- The mashup, a type of application, service or content made famous by the rise of Web 2.0 technologies, recombines other pieces of content, programming and experience to generate a new experience or capability.

Implications:

- Remix culture has encouraged openness as producers of remixed materials place their own creations back into the realm of public use. This has also driven growth of remix culture and created opportunities for new creative voices and entrepreneurship as more creators seek to leverage existing content to create new product.

- The popularity of remix culture has driven a rethink of intellectual property frameworks. Lessig’s Creative Commons framework, which provides different levels of permission for remix and reuse of material, has become an established platform for managing rights in remix culture.

Remix Culture

Countertrends:

- Some countries and industries have taken steps to tighten intellectual property frameworks and aggressively pursue alleged copyright violators to slow loss of revenues and maintain control of content.

Extrapolations:

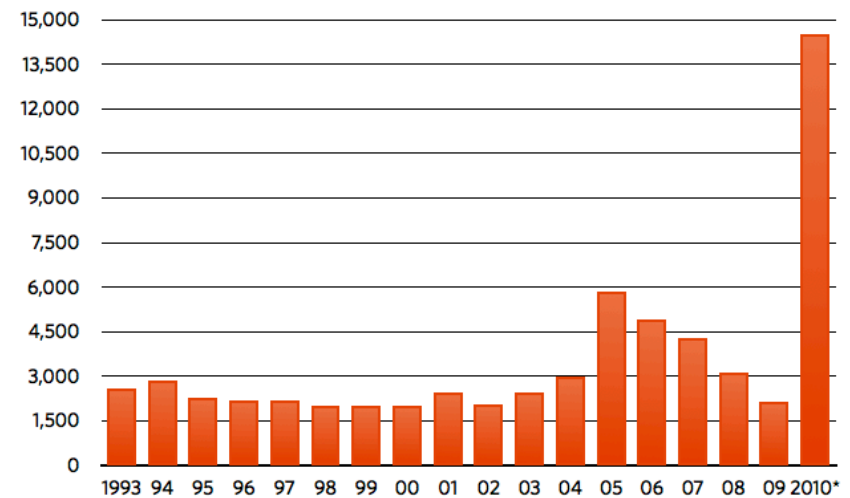
- Continued expansion of remix culture could radically alter intellectual property frameworks and mechanisms such as digital rights management in areas not yet touched by it as content protections in core media industries shift to accommodate further openness. Producers would have to look to new revenue sources as the ability to capture full “return” for created works would be weakened, as we are already seeing with some categories of content such as music and video.

Other Resources:

<http://www.henryjenkins.org/> — Blog of Dr Henry Jenkins, Provost's Professor of Communication, Journalism, and Cinematic Arts at the University of Southern California and expert on convergence and fan culture.

<http://aramsinnreich.typepad.com/> — Blog of Dr. Aram Sinnreich, author of “Mashed Up” and visiting professor at NYU’s department of Media, Communication and Culture.

Federal copyright lawsuits by year



* Lawsuits filed by US Copyright Group alone



US lawsuits for illegally copied media surged in 2010 as legal and media groups developed a new strategy for defending copyrights. Source: ars technica <http://arstechnica.com/tech-policy/news/2010/06/the-riaa-amateurs-heres-how-you-sue-p2p-users>

Education 2.0

Trend type: Social

Industries: Books, Interactive

New technologies in the classroom, and the dynamics of the Web, are transforming the ways in which students and teachers interact with educational media and practices, opening the learning experience up to many new approaches.

Text alone will not hold the attention of today's school children who are digital natives. Google, blogs, social media and collaborative knowledge management mean students are not only exposed to more information they can also easily search and access any information or knowledge they desire, access expert knowledge and collaborate real-time over distances. The amount of information available outside the classroom today is greater by an order of magnitude compared to what was available just 10 years ago. More recently, textbooks are beginning to face pressure from e-books and the Web, as more institutions look to both leverage digital media and cut costs as budget pressures grow.

Signals:

- The global market for e-learning market reached an estimated USD \$27 billion in 2009, according to Ambient Research, a figure expected to double by 2014. Of this, North America is and will continue to be the highest spending region globally for the foreseeable future.
- Investment in digital education initiatives are gaining an increasingly high profile as public education metrics weaken across major countries and budget shortfalls become more frequent. Major foundations, such as the Bill and Melinda Gates Foundation, have put forward grants to help further develop digital learning to help education meet 21st century needs.
- With the advent of inexpensive netbooks and e-readers, regional education authorities in many areas have begun to look at digital textbooks as a low- or no-cost way of delivering up-to-date curricula to students already savvy in technology usage.

Implications:

- Use of digital education tools and content has the potential to completely reorder the education “supply chain” in many areas, with curriculum creators needing to shift to new development processes, sources of content and delivery structures to feed electronic learning.
- Traditional one-to-many models of learning will increasingly need to shift to one-to-one and collaborative models of teaching and learning as technology allows students, teachers and others involved inside and outside the classroom to interact in many different ways.
- Digital education divides may be exacerbated as school systems with access to funding and resources pull further ahead of resource-poor areas.
- Digital education initiatives will give a boost to innovation around content and collaboration, and will also draw in other industries.

Education 2.0

Countertrends:

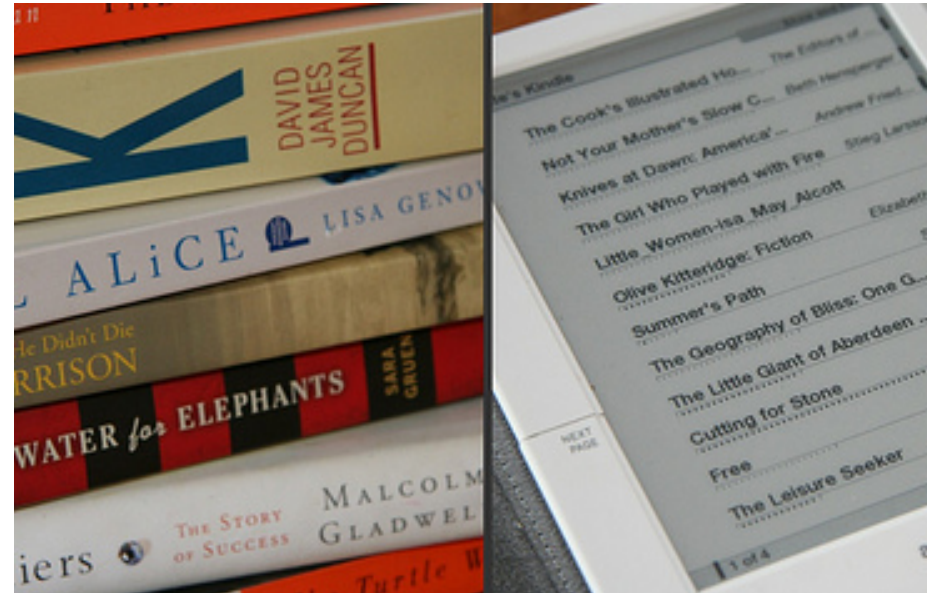
•Conservative governments in developed countries are pushing for smaller government and less investment in public services, of which education is one. As a result, development of education 2.0 may be slowed or even halted in some areas due to a desire to focus on other services, or on perceived core education building blocks, such as the old “3Rs”.

Extrapolations:

•Full implementation of digital education would mean a complete reworking of education systems, away from the Fordist model of the 19th and 20th centuries, toward a more co-creative system that provides cradle-to-grave access to both learning and teaching. Educational institutions would more closely resemble media startups and laboratories than today’s schoolrooms.

Other Resources:

- The Golden Swamp, <http://www.goldenswamp.com/>
- Mobile Learning Foresight, <http://mamk.research-update.info/>
- Future Now, Institute for the Future: <http://future.iftf.org/education/>



Libraries and classrooms in educational institutions may see fewer books and more digital devices in future, as cheap e-readers and electronic books create the ability to store, move and collaborate around thousands of available texts. Source: Flickr/Katerha

Game of Life

Trend type: Social

Industries: Interactive, TV

As the "social web" embeds a layer of additional data on our day-to-day lives, playfulness and competition are assuming larger roles in driving behaviors, connections and discovery.

Playfulness has expanded beyond the traditional realms of gaming and learning into many new social applications on the Web, on our mobile devices, and through linkages between interactive media and traditional media such as television, and even beyond into health care, transportation and other new areas. This has been driven in part by the desire to appeal to younger consumers of content and technology, and also to find new ways of persuading and engaging social usage of technology in ways that engender positive behaviors and outcomes through harnessing of our natural inclinations toward both competition and cooperation. Leading edge manifestations of this trend including augmented reality (AR), alternate reality gaming (ARG), geo-cache games, location-based social media and the reward and point-based accomplishments associated with these interactions.

Signals:

- So-called mobile social location applications, such as Foursquare, Gowalla and the newer SCVNGR encourage users to “check in” to locations as a means of notifying others nearby. By rewarding check-ins with badges or other awards, these services encourage both individual users and groups of users to coordinate behaviors or compete for rewards, including promotion offered by businesses. Foursquare had an estimated 2.8 million registered users in August, 2010.
- Using the driver’s sense of play, Toyota designed the visual feedback system for its Prius hybrids to engage the driver with his or her interaction with the vehicle and its energy consumption. It’s

instrument console makes drivers aware of how their driving behaviour affects energy consumption, and has been noted to encourage friendly competition among owners. Ford has expanded this to provide positive visual feedback of leaves growing in one instrument display as driving patterns become more fuel efficient.

- A number of emerging health and wellness applications are harnessing gaming dynamics to encourage healthy behavior through competition. Nike’s + system for runners now allows group sharing of running data to instill an element of play in social groups of casual runners.

Implications:

- Use of playful interfaces, gaming dynamics and reward systems is opening up increasing overlap among disciplines such as game design, medical research, and behavioral economics, cross-pollinating ideas from other disciplines into technology and media.
- Adding casual gaming elements to technology and media has expanded user populations from traditional “core” technology adopters to broader “shoulder” markets such as women, youth and seniors. Nintendo has been particularly successful doing this through its Wii and DS gaming platforms.

Game of Life

Countertrends:

- Using playfulness in technology and media as described in this trend does not have a long track record, and may be simply a phase of commercial innovation that declines as users become more sophisticated. Even as services such as Foursquare's base grows, there is evidence that many registered users fail to stay with these applications over time.

Extrapolations:

- Playful interfaces could follow their push into areas such as automotive design and health care into other "serious" industries and areas, such as law enforcement, enterprise software, government and beyond as a generation familiar with and embracing of these game dynamics ages.

Other Resources:

- Claire Cain Miller, "Cellphone in a New Role: Loyalty Card," New York Times, May 31, 2010, http://www.nytimes.com/2010/06/01/technology/01loopt.html?_r=1&hpw

- Alexia Tsotis, "Facebook Places vs the Location-based World," TechCrunch, August 19, 2010, <http://techcrunch.com/2010/08/19/facebook-world/>

THE TOP TIER LOCATION BASED SOCIAL NETWORKS COMPARED

	foursquare	gowalla	brightkite	loopt	yelp	where	POOYAH!	Facebook Places
Users	2.6 MILLION	390 THOUSAND	2.2 MILLION	4 MILLION	2 MILLION	3 MILLION	2.5 MILLION	Just Launched
Game Mechanics	Points & Badges	Pins & Items	Badge Levels	Rewards & Achievements	Badges and Royalty Levels	None Currently	Monopoly-Like with Points, Locations, Buildings & Products	None Currently
API?	YES <small>Limited to check in data</small>	YES <small>Limited</small>	YES <small>Limited</small>	NO	YES <small>Limited to Review and Ratings</small>	YES <small>In beta—limited</small>	NO	YES <small>Read & Write</small>
Business or Retailer Dashboards?	YES	NO	NO	NO	YES	NO	NO	YES
Platforms	iPhone, Android, BlackBerry, Palm, iPad	iPhone, Android, BlackBerry, Palm, iPad	iPhone, Android, BlackBerry, Palm, Other	App Store	iPhone, Android, BlackBerry, Palm, Other	iPhone, Android, BlackBerry, Palm, Other	App Store	iPhone, Android, BlackBerry, Palm, iPad
Primary User Benefits and Perks	Coupons & Freebies to Mayors	Free Gifts, coupons & specials	Reward based programs	Instant Friend meet-up, retail discounts	Coupons, comprehensive restaurant reviews and rating guide.	Comprehensive business reviews, mobile coupons	Great real world game, some product discounts	Photo tag your friends to check in. See what businesses are hot or not
CEO	Dennis Crowley	Josh Williams	Jonathan Liner	Sam Altman	Jeremy Stoppelman	Walk Doyle	Keith Lee	Mark Zuckerberg
In Ten words or less	Get rewarded for exploring your city	Discover new places and earn rewards	Location based social recommendation service	Find friends, go places, rate them, get rewarded	Share local business reviews and tips with friends	Mobile Citysearch and recommendation service	Where Monopoly & SimCity & real life meet via mobile	Check in to local businesses and share moments

By Mark Fidelman @markfidelman SeesOmega.com, Techorati, CloudAve.com

A number of competitive social location applications have emerged in recent years—the most recent from Facebook—which reward users' checkins and other location-based behaviors. Source: TechCrunch.

Attention Fragmentation

Trend type: Social

Industries: All

The fragmentation of content into smaller bits, consumed rapidly and frequently, has both been driven by and is causing further shifts in cognitive patterns, toward shorter attention spans.

“Snacking” is the term most used today to describe the media and information consumption patterns of average Internet users, spreading time across multiple media, often at the same time. While the hyper-connected Web established this behavior with the digital generation, the advent of smartphones, bringing instant delivery of mobile media and messaging to almost any location, has exacerbated this fragmentation of attention, leading us to fill any empty moment with Twitter, Facebook, YouTube, e-mail, text messaging, casual games and dozens of other distractions.

Signals:

- Multitasking on digital media is on the rise. Data from 2009 suggested that over 80% of US Internet users in a survey were also consuming some other form of media at the same time they were online. Almost two-thirds of respondents to the Burst Media study were watching TV while surfing the Web.
- The average US teen between 13 and 17 sends and receives over 3,000 texts per month, according to Nielsen data.
- Globally, average time spent per month by Internet users on Facebook, Twitter and other social networks topped five hours per day at the end of 2009.
- Time spent viewing video on mobile devices, typically on the move, rose 600% between 2009 and 2010, according to ComScore data.

Implications:

- Traditional media consumption behaviors that have driven television, newspaper and radio advertising models for the past 50 years are

fragmenting along with attention, disrupting advertisers’ and media companies’ abilities to develop consistent revenue models that can predict behavior.

- Content creation and production must take into account changes such as shorter formats, new forms of portability, cross-media connectivity with other forms of content and communication, time-shifting and place-shifting.
- Consumers may begin to “burn out” on fragmented media consumption and cut back time spent on digital media. Already academics and psychologists are beginning to track forms of Internet-driven burn out and dislocation thought to be driven by constant connectedness and the stress of keeping up with so many available media and information sources.

Attention Fragmentation

Countertrends:

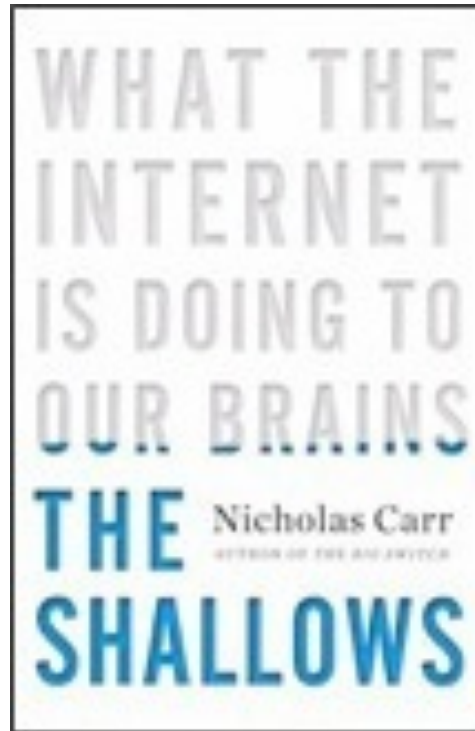
- A small number of consumers are reporting cutting back on connection time as a response to this fragmentation.
- Local and national authorities in some areas are implementing bans on mobile phone use, including bans on texting while driving, in response to the impact of fragmented attention in causing accidents.

Extrapolations:

- Content may continue to be broken down into micro-episodes and other very small packages to be delivered on any screen at any time, intended to follow continuously shifting consumption.
- New forms of media tracking and consumption measurement may be developed, including forms of neurological and biometric measurement that directly track users' behavior and reactions.

Other Resources:

- “The Three Screen Report,” NielsenWire, September 2, 2009, http://blog.nielsen.com/nielsenwire/online_mobile/three-screen-report-media-consumption-and-multi-tasking-continue-to-increase/
- Nicholas Carr, “The Shallows: What the Internet is Doing to Our Brains,” WW Norton & Co, June 2010.



In his 2010 book *The Shallows*, author Nicholas Carr contends that current information and content consumption habits are having negative impacts on the human brain, potentially rewiring cognitive processes and limiting so-called “deep engagement” with information.

Language Clash

Trend type: Social

Industries: All

While English has been the dominant language of online content for the past two decades, shifting demographics of technology usage, as well as changing national populations, means this dominant position may be relinquished in the next two decades.

The rise of Internet usage in Asia, South America and Africa is bringing millions of new users online each year, and with it a change to the balance of languages used in content and communication. Chinese language usage is counted among some 440 million users as of 2010, just behind the 550 million English language users online today. With peaking penetration in developed countries that count English as a major language, and major growth still to come in countries such as China, India, Brazil, and parts of Africa, the shape of content and communication will change as new languages take on more weight on the global network.

Signals:

- ICANN, the body charged with managing Internet domains, switched on capabilities earlier this year for new multilingual domains, initially in Cyrillic for Russian, and Arabic. This is the first time non-Roman characters have been used in top-level domain names.
- Google's Eric Schmidt last year forecasted an Internet that will be dominated by Chinese language content in the next five years. Google and other search companies have made great strides in recent years developing non-English search technology, and Facebook has seen its growth explode worldwide as it adds native language versions of the dominant social network. 48% of Facebook content was estimated to be in languages other than English, with Turkish and Indonesian among the top six languages used on the network.

- A study conducted in early 2010 showed only 50% of all Twitter messages are in English. Japanese, Portuguese, Malay and Spanish make up next most frequently used languages.

Implications:

- Areas such as search and social media emerging in new languages will have a disruptive effect on the development of Internet content as these changes will reach into the semantics of these networks, from search engine optimization to advertising to content tagging and beyond. Advertising in particular will see significant changes in coming years to adapt to new languages.
- Real-time translation will become an increasing necessity as users access material in other languages across the tightly integrated links of global platforms. Tools such as Google Translate, already offering automatic translation within the browser, and this is likely to be developed into additional tools that reside closer to the native content.
- Technical considerations around domain management, content management and content design will have to take into account new character sets, such as Mandarin, Cyrillic and Arabic.

Language Clash

Countertrends:

The principal countertrends are primarily around growth of English language education worldwide, and the continued use of English as a neutral language among cultures. This won't slow languages such as Chinese or Arabic as much, as many new users are coming from less educated social groups and rural regions less likely to use English as a bridge language.

Extrapolations:

•Design accommodations, particularly for Chinese and Arabic, will begin to impact visual design on content and media. Spending power within these language groups will dictate the level of this change, from shifting page layouts to how extensive translation will be applied for English language audiences, if at all. This also applies to technologies such as e-readers, which will need both hardware and software accommodations to multiple languages.

Other Resources:

•Susan Su, "Facebook's Top 10 Languages," Insidefacebook.com, May 24, 2010,

<http://www.insidefacebook.com/2010/05/24/facebooks-top-ten-languages-and-who-is-using-them/>

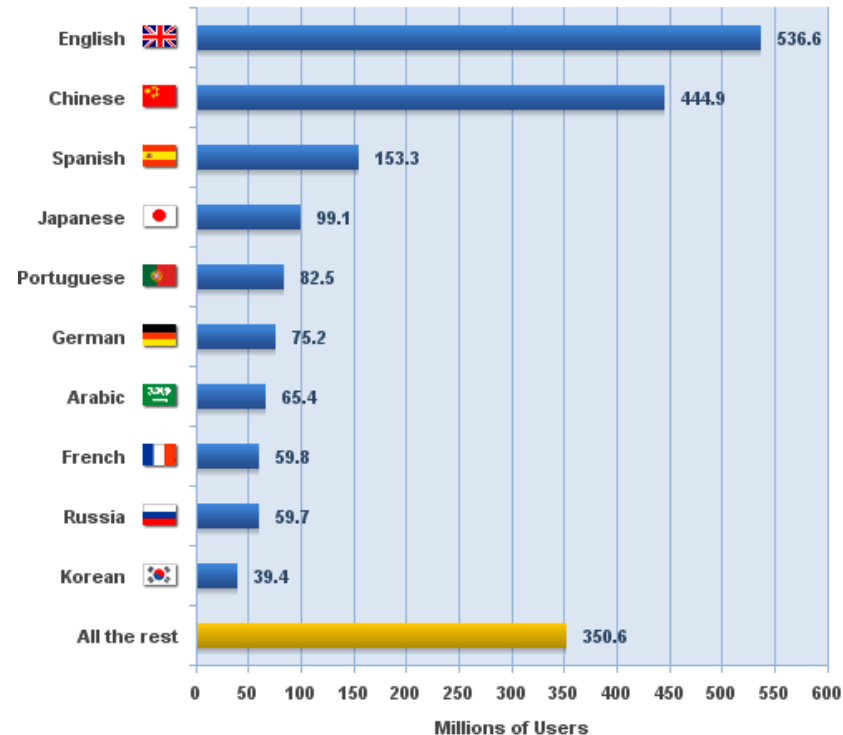
•Robin Wauters, "Only 50% of Twitter Messages are in English, Study Says, February 24, 2010,

<http://techcrunch.com/2010/02/24/twitter-languages/>

•Top 10 Internet Languages, Internetworldstats.com,

<http://www.internetworldstats.com/stats7.htm>

**Top Ten Languages in the Internet
2010 - in millions of users**



Source: Internet World Stats - www.internetworldstats.com/stats7.htm
Estimated Internet users are 1,966,514,816 on June 30, 2010
Copyright © 2000 - 2010, Miniwatts Marketing Group

The Internet is finally becoming a truly multilingual platform as new users join the network from developing markets, forming a linguistic long tail of content and communications.

2020 Media Futures Trends Package

TECHNOLOGICAL

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Technological

- **Hybrid Technologies:** Powerful new platforms are beginning to emerge through the hybridization of two or more technologies or media, such as Internet TV, portable video, or mobile messaging, creating new possibilities to modify and extend media in new ways.
- **Network as Platform:** The second major wave of technology innovation on the Web, known as Web 2.0, positioned the network as the primary platform for computing. This is pushing media with it out onto the so-called “cloud,” making locally stored and played media more and more irrelevant.
- **Atoms to Bits:** More and more content is being converted from both physical or non-digital formats to digital ones for easier distribution online.
- **Data Traffic Crunch:** Numerous forecasts show demand for digital media, coupled with the massive amounts of storage required to host both professional and DIY content, may drive us toward a bandwidth crunch in coming years.
- **Portability and Mobility:** Mobile devices are permeating more and more areas of our lives, strongly shaping the consumption and communication behaviors of society, changing how we interact with location and each other.

Hybrid Technologies

Trend type: Technological

Industries: Film, Interactive, TV

Powerful new platforms are beginning to emerge through the hybridization of two or more technologies or media, such as Internet TV, portable video, or mobile messaging, creating new possibilities to modify and extend media in new ways.

While technology analysts often speak of a trend toward convergence, a trend toward simpler “hybridization” of media and technologies has evolved over recent years, where several key functions are embedded in a device or media that allows it to serve not just one but several key uses, without becoming fully convergent. While these devices and media may be capable of more fully convergent behavior, the simple flexibility and utility of serving a limited number of important functions is the defining factor, often dictated by the optimal storage, processing or form factor of the device.

Signals:

- The integration of data carriage capabilities into the simple mobile phone, initially designed for voice only, has created a boom in development of mobile devices toward the smartphone, allowing these powerful portable computers to be used for several key functions—voice when needed, or messaging and data communication when necessary. While the modern smartphone has evolved into a highly capable computing device, billions of users worldwide simply use the mobile phone for these two basic capabilities.
- Internet-capable televisions, of which a new generation is emerging, also provide similar functionality as the mobile phone—in this case designed for video delivery, but also capable of basic interactivity through Internet access. Likewise, simple devices like Apple TV and Roku can stream both video and music to TVs, and the Wii and Xbox

play games and also stream video.

- The newest generation of e-readers bring not only the capability to store and read digital books, but also have data access to give them simple access to interactive services.

Implications:

- Most if not nearly all future media devices will have data access to allow them to send and receive content, and possibly connect with networks of other consumers’ content and devices. The phrase “_____ and Internet access” will become a common descriptor of new products’ capabilities.
- The nature of how we think about basic behaviors—reading, communicating, shopping, watching, listening—is steadily being shifted to include other possible functions, or how that behavior is defined in context of access to others doing the same, or to vast libraries of content or services beyond the simple action.
- The ability to store large quantities content or media will become as important as data access in new devices.

Hybrid Technologies

Countertrends:

- A countertrend toward single function devices, particularly for emerging markets, or where space, cost or other constraints dictate functionality be limited. Storage-only USB keys, voice-only phones for the elderly, or types of dumb data access terminals may still be the most appropriate technologies for certain situations.

Extrapolations:

- The so-called Internet of Things is one important extrapolation of hybridization, where most everyday objects also have an IP address and read-only data access, enabling them to report location, status or otherwise be queried. In each networked object, it has its primary nature or function, and the additional hybrid function of being a data reporter.

Other Resources:

- Scott Smith, "Don't Judge a Book by It's Coverage Area," Changeism, April 23, 2009, <http://www.changeist.com/changeism/2009/4/23/dont-judge-a-book-by-its-coverage-area.html>



Simple TVs are likely not to continue to be so simple, as Internet access becomes an expected feature. Source: Flickr / Re-ality.

Network as Platform

Trend type: Technological

Industries: Interactive, TV, Music

The second major wave of technology innovation on the Web, known as Web 2.0, positioned the network as the primary platform for computing. This is pushing media with it out onto the so-called “cloud,” making locally stored and played media more and more irrelevant.

Technology analyst Tim O’Reilly, one of the early proponents of Web 2.0, defines it thusly, “Web 2.0 is the network as platform, spanning all connected devices; ...delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users...” Similar to Sun Microsystems’ declaration in the 1990s that the “network is the computer,” Web 2.0 and related evolutions of programming, software development, network architecture, and media have put the network at the center of the system map, with media, content, computing power and data increasingly residing in what is commonly referred to as “the cloud” of Internet-connected servers and applications, delivering whatever consumers want, wherever they need it. Increases in access speeds for many consumers, and falling costs of storage and processing, has accelerated this trend to a point where now the network is a substantial “platform” for media delivery itself.

Signals:

- Peer-to-peer media services such as Pandora, Napster and Last.fm applied a similar network-as-platform strategy as Internet telephony service Skype by borrowing both files and bandwidth from users to turn the public Internet into a platform for media delivery. This model has been continued by dozens of smaller, similar media networks that

deliver content from the network as host.

- Companies such as Microsoft, Sun, HP, and IBM have made extensive investment in developing and distributing various new networked computing tools and applications to reinforce the network as platform for both consumer and business use.
- Apple is expected to push its dominant platform for media, iTunes, to a cloud platform in the next year, and has already made investments in technology and infrastructure to power this. Such a move would trigger a new wave of movement to the network by competing players, further powering this trend. It has already opened up the system to social networking, allowing the network to be the platform for media as social object.

Implications:

- Using the network as platform will increase both media portability and the reach of many media companies, as it lessens the reliance on physical infrastructure.
- This trend has implications for controlling flows of media, as networks cross borders. Storage and transmission of media in the cloud now has to take careful consideration of national and regional rights structures, and implement new technologies to manage this.

Network as Platform

Countertrends:

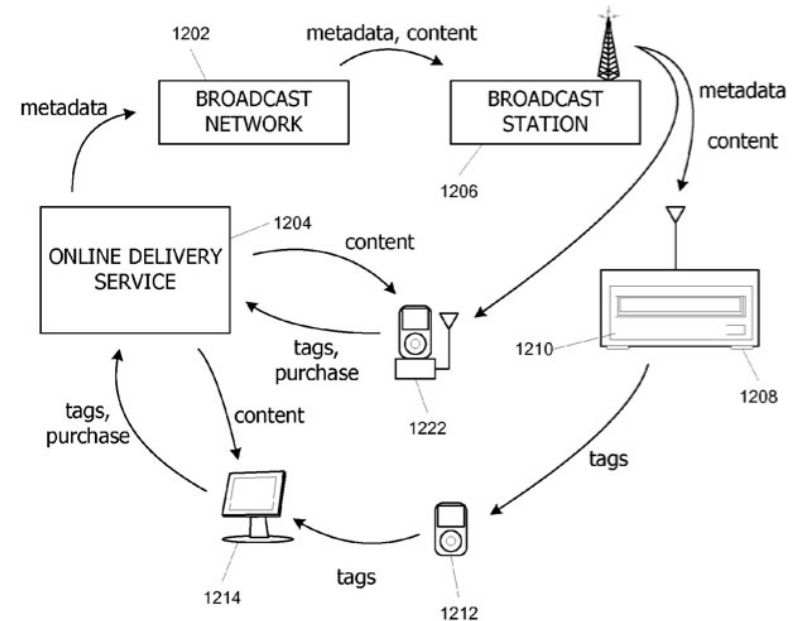
- Growing capacity and falling price of local networks and storage represent a minor countertrend, which, along with local media ecosystems, could encourage some measure of re-localization of media.

Extrapolations:

- Location of media sources would become unimportant as consumers chose to trade this for access to media anywhere, on any device. This would result in a shift of media devices toward quality of playback and breadth of access (i.e. iPad) and away from the local storage (i.e. iPod).

Other Resources:

- Matt Buchanan, "The Seeds of Apple's Cloud," Gizmodo, September 3, 2010,
<http://gizmodo.com/5628255/the-seeds-of-apples-cloud>



This image from a patent application by Apple for a tagging system for cloud-based media shows the complex flows that are emerging in the virtualized network world.

Atoms to Bits

Trend type: Technological

Industries: All

More and more content is being converted from both physical or non-digital formats to digital ones for easier distribution online.

The emergence of both convergent (smartphone, PCs, tablets) and specialized devices to store and play digital media has driven the digitization of billions of bytes of physical and analog media into digital form, adding hundreds of thousands of new articles, songs, chapters and episodes to digital libraries and stores. As described in Chris Anderson's blog and book by the same name, *The Long Tail*, digital formats open up vast new niche markets interested in narrow topics or little-known artists, creating a boon for digital media producers.

Signals:

- Movie and TV production studios have been steadily adding to back catalogs of available digital versions of their properties as the main aggregators and distributors of digital video have stabilized. Major digital distributors such as iTunes, Amazon, Netflix and Hulu have grown substantially as online video content consumption has accelerated growth, creating a more viable business case for direct-to-online release.
- With the emergence of the blockbuster Amazon Kindle e-reader platform, e-book libraries have swollen to meet demand for both current bestsellers and back catalogs of publishers. One estimate at the beginning of 2010 put the number of e-book titles available at around 10 million, including 500,000 made available as public domain by Google.
- While most major magazines and newspapers have been available via the Web for the past decade, the advent of tablets such as Apple's iPad, as well as larger format e-readers, has magazine publishers rethinking how they adapt their content, advertising and overall

format to the similar form factor of these devices. Wired, the New York Times, the Wall Street Journal, the Guardian and several other high profile global titles are trying different design innovations to appeal to their reader base, an increasing percentage of which is mobile and armed with these devices.

Implications:

- The shift from physical presentation to digital delivery is putting pressure on traditionally successful titles to innovate in areas they are not yet fully familiar with, giving the lead to those which are able to define the online reading or viewing experience early.
- Deeper interactive integration will be necessary to take advantage of the benefits of connected, powerful, high-resolution devices. As with the Web, digital reading, in particular, opens avenues for integration of multimedia, within certain constraints.
- Marketing and promotion abilities afforded by physical retail and distribution are vastly diminished in a direct-to-digital space. With little additional "real estate," new forms of marketing, such as sample chapters, limited downloads and other "taster" versions of media will need to be created to catch the digital consumer's attention.

Data Traffic Crunch

Trend type: Technological

Industries: All

Numerous forecasts show demand for digital media, coupled with the massive amounts of storage required to host both professional and DIY content, may drive us toward a bandwidth crunch in coming years.

Technologists and telecom engineers have been concerned for some time that various factors, including aging infrastructure, outdated core technologies and rapid networks are reaching the limits of their capacity to support Internet growth going forward. Various initiatives and proposals have been put forward, from charging for tiers of usage, to upgrading IP technology to a new generation to developing new global networks, and other measures. While consumers of digital media have not yet seen many indicators of the forecasted bottlenecks and failures, experts say we are approaching the edge of what our current global Internet can do.

Signals:

- Internet bodies have been planning for implementation of the proposed IPv6 system, to replace the older system for allocating Internet addresses, for several years. Analysts say the current IPv4 system will run out of available addresses in 2011.
- Plans have been discussed for some time to create alternative Internets for certain kinds of traffic and applications, such as Internet 2 for academic institutions, research and government, as a means of segregating the often dense traffic these users flood the system with.
- According to Google VP Marissa Meyer, the amount of data on the Internet jumped 56 times from 2002 to 2009, and stood at approximately 281 exabytes last year. This leap in data, partly due to the amount of information consumers upload via social media, will be outstripped by the influx of networked objects—the so-called Internet

of Things—in coming years.

Implications:

- The relatively low cost of digital consumption may rise dramatically in coming years if capacity doesn't expand to keep pace with demand, leading to charging for tiers of service.
- Quality of service of more data-intensive content, such as high-definition video, will be difficult to maintain as network outages and bottlenecks occur at critical pinch points. Major events such as the World Cup, which is increasingly broadcast online, will flood networks with both dense multimedia content and millions of new consumers, creating major problems for both viewers and providers.
- Cloud-based data services will be impacted as the amount of data shifted in and out of the network increased with uptake of these services. Major companies such as Microsoft, Apple and Google, all of whom have been moving major services to the cloud, will have to deal with maintaining quality of experience and guaranteed access as the crunch hits.

Data Traffic Crunch

Countertrends:

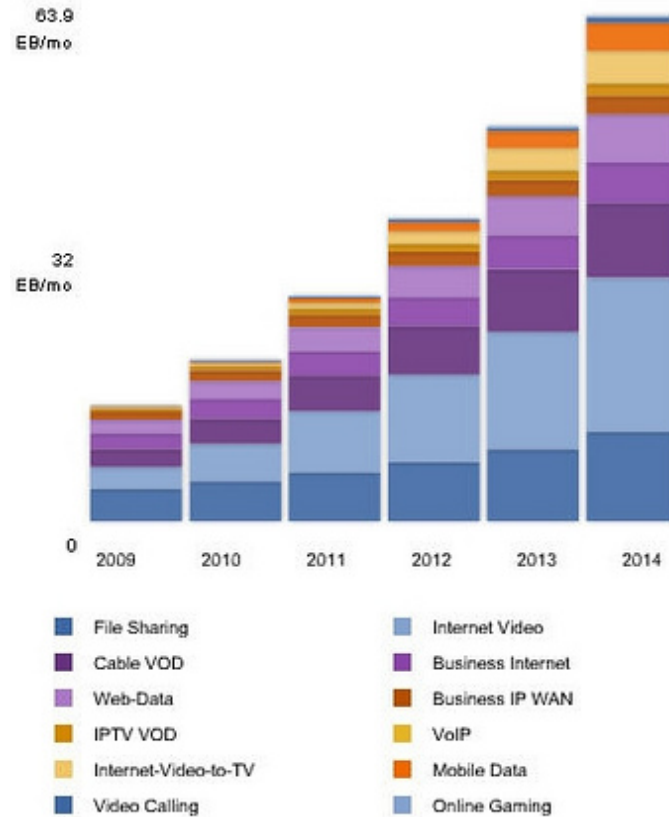
- Major technology companies and network providers are rapidly trying to solve this potential crunch at network, services and hardware levels.
- A protracted economic downturn might at least slow data usage from the levels of more aggressive forecasts.

Extrapolations:

- Continued degradation of public Internet capacity could slow demand, and therefore the rate of innovation that can be supported on the Internet as users ration their access of the medium. Digital video, a major growth area as IPTV services expand, may be curtailed as the networks reach capacity and service degrades.

Other Resources:

- Cisco Visual Networking Index, http://www.cisco.com/en/US/netsol/ns827/networking_solutions_sub_solution.html
- Carrie-Ann Skinner, "Fibre Broadband Could Hit Bandwidth Capacity Wall," CIO, October 19, 2010, <http://www.cio.co.uk/news/3244721/fibre-broadband-could-hit-bandwidth-capacity-wall/>



*Cisco VNI June 2010

Networking company Cisco projects the growth in digital video over the Internet to be the main component of traffic growth in coming years.

Portability and Mobility

Trend type: Technology

Industries: All

Mobile devices are permeating more and more areas of our lives, strongly shaping the consumption and communication behaviors of society, changing how we interact with location and each other.

Since the emergence of the first mass market portable computers, demand has driven increasing levels of miniaturization, new form factors, greater power and new functionality into mobile computing devices, resulting in the slim smartphones, postage-stamp sized media players, tablets, pads and folding devices we have today. The advent of location-based services and social media have further accelerated the value of mobility as they provide context-based functionality and a social dimension to personal technology.

Signals:

- There are more than 5 billion mobile phone subscriptions active in the world today, with the most recent billion being added in just last 18 months. This puts global mobile penetration at approximately 74%, according to the GSMA.
- The functionality of mobile devices has expanded phenomenally in the past five years as the devices have become more powerful and Internet-connected. As a sign of this convergence, the world's largest mobile phone manufacturer, Nokia, is also the largest maker of MP3 players, digital cameras and GPS devices, as all of these functions have become tightly integrated with the mobile phone.
- As of the end of 2008, laptop sales surpassed desktop PC sales worldwide, with netbooks rapidly encroaching on laptop sales soon after. Now tablet and slate devices are eating into a significant portion of portable computing sales, showing a dynamic, accelerating evolution of demand.

Implications:

- Media consumption and communications can no longer be considered primarily stationary activities, as they were until relatively recently. Portability and mobility are among the foremost design concerns for not only computing and media devices, but the applications, services, content and data that they carry as well.
- Place-shifting, or moving content, activity or behavior from its traditional geographic base to another is also becoming commonplace. Media is being acquired and consumed on the move, with outside of the traditional framework of retail and home.
- Interaction with media that is traditionally print, such as books and magazines, has been radically altered by the digital form factor, which designers are still struggling with. Delivery into interactive formats that portable devices enable requires wholly different user experience and injection of video, audio and other interactive components to best use the capabilities most mobile platforms

Portability and Mobility

Countertrends:

•There are in effect no evident countertrends that could stall or reverse the movement toward portability and mobility in the near future. Even failure of traditional media to cope with new requirements just leaves the door open to new innovators, who will step into the gap and provide compelling experiences to continue to drive the trend.

Extrapolations:

•Physical form factor continues to be the area of greatest change, with devices becoming thinner and smaller while more powerful. Ultrathin, small and flexible devices will continue to shape innovations in content and media design to fit the form and novel capabilities of the technology, including innovations such as body-based displays, fabric-like folding interfaces and even smaller storage and playback forms that exist today.

Other Resources:

- Mizuko Ito, "Personal, Portable, Pedestrian," MIT Press, 2005.
- <http://www.M-Trends.org>
- <http://www.textually.org>
- <http://www.mobilecrunch.com>

High-Speed Wireless Internet-Enabled Device Shipments Worldwide, 2008-2013 (millions)

	2008	2009	2010	2011	2012	2013
Wireless pocketable devices						
3G-enabled smartphones	92	131	205	316	491	656
Wireless multimedia players	66	72	71	76	77	75
3G-enabled feature/basic phones	227	255	343	392	352	334
Portable Internet devices						
Notebook PCs	127	131	152	183	218	247
Netbooks	16	34	40	49	58	63
Internet tablets	1	2	8	24	36	49
Embedded/other devices	2	4	7	10	13	17
Wireless stationary Internet terminals						
Gaming consoles	56	51	58	54	48	42
Home appliances	5	6	9	12	16	20
Total	592	686	893	1,114	1,309	1,503

Note: numbers may not add up to total due to rounding

Source: Morgan Stanley, "The Mobile Internet Report," December 15, 2009

109732

www.eMarketer.com

Worldwide forecasts show Internet-ready mobile and portable devices continue to increase penetration for the foreseeable future, with the exception of portable gaming, which is being overtaken by smartphones and other multipurpose devices.

2020 Media Futures Trends Package

ECOLOGICAL

<http://2020mediafutures.ca/>

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Ecological

- **Green Considerations:** Year-on-year growth in consumption of digital devices is creating environmental pressures, both around the disposal of (unused) electronics, their packaging, and the power our current devices consume.
- **The Problem of Stuff:** Despite the promise of dematerialization implied by the digital revolution, we seem to be drowning in stuff, potentially impacting demand, and shaping tolerances for new innovations due to acquisition fatigue.
- **Toxic Tech:** Personal technology is not only having positive effects on our lives, but is also a source of concern about our health and its impacts on us. Issues ranging from mobile phone radiation and EMF from ubiquitous networks, to hazards in the plastic and metals in our devices, are causing concern.
- **Visualizing the World:** Rising amounts of data about the world around us collected through an expanding array of sensors and monitoring technologies, coupled with growing interest in data visualization, is providing us with an unprecedented window into our world.

Generational Differences

Trend type: Ecological

Industries: All

Differing technology uptake patterns among different generations are creating a generational divide in demand, which will further shape the delivery channels we use in the future.

As the Internet and Web have matured, clearer segmentations have emerged around differing behaviors as defined by age. Each generation has become comfortable with particular services and channels, shaping communication patterns within and among age cohorts. Younger users are more likely to be online, and more likely to consume media and use lightweight communication tools such as SMS, while older users aim more for utility, research, and more formal, long-form communication channels such as e-mail. Some newer applications are beginning to knit the generations together online, however—social networking is now being embraced by older users almost as much as by younger ones.

Signals:

- Choice of communication channel varies widely when viewed by age group. Teens are far more likely to use SMS, or text messaging, in high volumes, and rely on it as a principal form of communication. Recent Nielsen research puts the average number of texts for a US teen at over 3,000 per month sent and received.
- The social media boom began among younger Internet users, more keen to connect and share personal information and creations, media and finds with chosen online communities. Older users were later comers to social media and social networks, preferring mainstream information sources and blogs. However, this gap has closed as Boomers and seniors flooded social networks in recent years connecting to younger family and friends.
- Designers have begun to take into account generational differences in

areas such as dexterity and visual acuity in creation of particular types of devices and services, for example. Mobile phones have been principal among these, as they shrank in form factor and increased in functional complexity over the past decade.

Implications:

- Communication gaps may emerge as generations flock to different communication and messaging platforms, segregating channels of interaction and creating communication barriers.
- Differences in visual design may increasingly demarcate products, services and media targeting different age groups.
- Venues for media consumption may also segregate by age over time, with younger consumers more likely to prefer media in mobile formats, small screens, and social channels for sharing, while older users lean toward larger displays, group consumption and fixed delivery, for example.

Generational Differences

Countertrends:

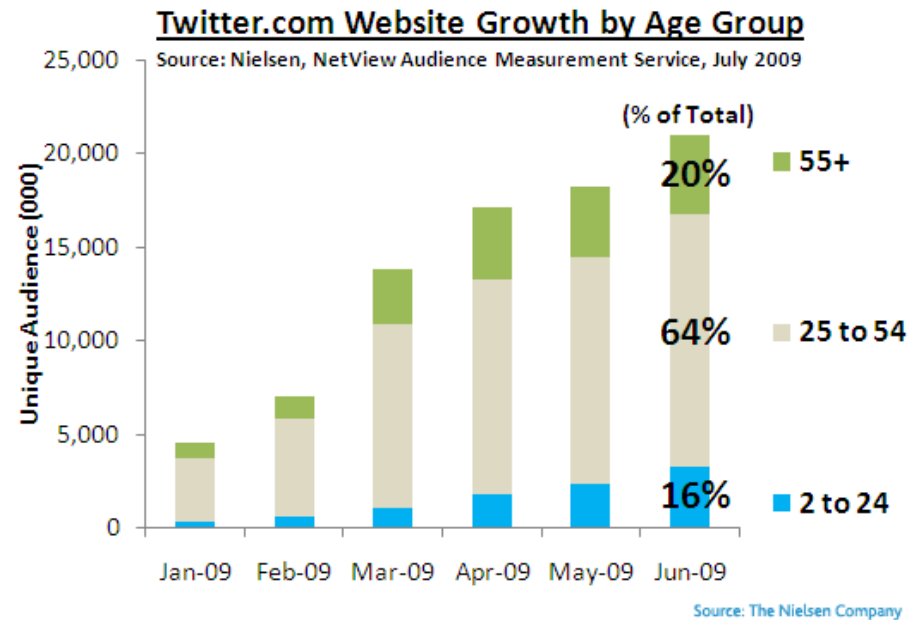
- In areas such as social networking, the same venues are being used by different age groups alongside one another. Though specific activities may differ, it represents a shift in choice of similar channels and platforms, potentially reconnecting age groups online and driving convergence around similar communication tools.

Extrapolations:

- Completely separate communications channels could emerge among different age groups, including radically different communication protocols and formats—an extension of the TXT “language” that has emerged on SMS, or gaming “lingos” that have grown up around multiplayer games.

Other Resources:

- “*The Millennials: Confident. Connected. Open to Change,*” Pew Research Center, February 24, 2010, <http://pewresearch.org/millennials/>



Nielsen data from 2009 suggests teens and young adults in the US are least likely of all age groups to use Twitter as a communication tool. This may be because texting was well entrenched before the emergence of Twitter as a popular tool in 2007-2008.

Green Considerations

Trend type: Ecological

Industries: All

Year-on-year growth in consumption of digital devices is creating environmental pressures, both around the disposal of unused electronics, their packaging, and the power our current devices consume.

From production impact on natural resources to energy consumption of active devices to the mounting problem of e-waste, governments, industry, interest groups and consumers are all beginning to count the cost of our love for digital technologies on the environment. Some major companies and national and state governments in particular have begun taking a closer look at how this impact can be mitigated, and some are taking drastic steps from design to regulation to lessen this impact going forward. The results may reshape how we use these devices and the services and media that they carry.

Signals:

- Affected by brown-outs partially attributed to the massive energy consumption of its growing population of digital devices, the state of California put new regulations in place to limit the amount of electricity TVs can consume, a move which is being considered by several other US states in the wake of its implementation.
- As far back as 2004 the European Union began addressing management of e-waste. Various countries, including Germany, have taken steps to limit the disposal of electronics such as televisions and PCs. Other national and regional governments, including some in Canada, have moved to institute similar rules. Canada made a symbolic gesture at the 2010 Winter Olympic Games, manufacturing event medals from e-waste material.
- Individual companies have stepped up efforts to produce greener electronics as well, including major manufacturers such as H-P, Nokia, and Apple, with varying degrees of success. Nokia has scored highly in

ratings by interest groups for its work in changing charging and power consumption technologies, and eliminating certain materials from the manufacturing process.

Implications:

- Limits on device disposal may eventually slow purchases of new electronics, impacting upgrading cycles, and changing consumption habits.
- As more information about energy use and e-waste becomes public through government and industry action, consumers may change their usage habits, curtailing media consumption as they have altered energy usage in the home in some areas.
- Countries that encourage research and development in green electronics may begin to benefit from the “halo” effect of supporting resource management in technology. Already, Finland, Korea and Japan are becoming noted for their environmental management efforts in this area.

Green Considerations

Countertrends:

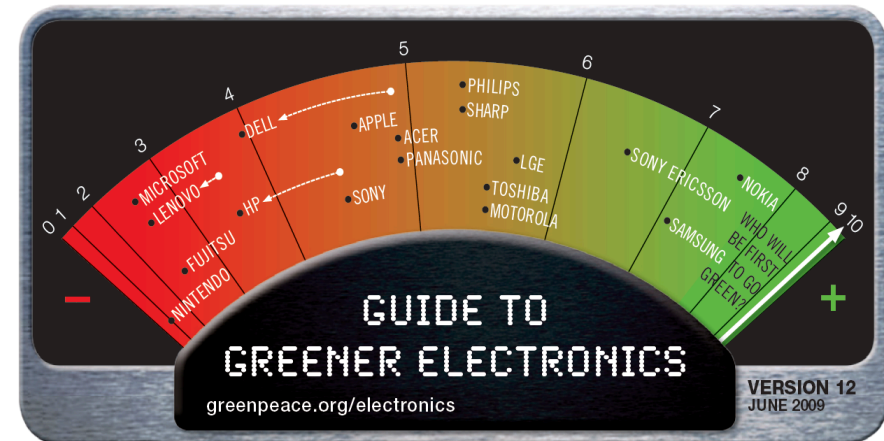
•Rapidly rising uptake of new products and device categories, increasing consumption of power-intensive media, and faster innovation cycles that produce new product on a shorter timescale are all acting as countertrends to the greening of technology. In particular, growing uptake in developing markets threatens to create e-waste crises in these markets.

Extrapolations:

•Funding for investment in green electronics technologies may be rewarded by consumers eager to get more out of their technology investments. R&D choices will increasingly be driven by both regulation in this area and consumer demand for low-power, low-impact devices. Major moves, such as agreement on common power charging platforms, display and materials standards may reshape the devices we use, and the media and services we consume.

Other Resources:

- Greenpeace Guide to Greener Electronics
<http://www.greenpeace.org/usa/en/media-center/reports/guide-to-greener-electronics-12/>
- Greener Gadgets Blog and Conference
<http://www.grenergadgets.com/>



International environmental group Greenpeace has been issuing regular reports scoring major global electronics makers on their progress toward greener products.

The Problem of Stuff

Trend type: Ecological

Industries: All

Despite the promise of dematerialization implied by the digital revolution, we seem to be drowning in stuff, potentially impacting demand, and shaping tolerances for new innovations due to acquisition fatigue.

With household ownership of personal technology at an all-time high in many developed countries, a trend toward recognizing and rationalizing this glut of electronics, non-interoperable devices, accessories, and separate “ecosystems” has emerged. Under the various umbrellas of lifestyle simplification, burn-out, tech overload, “deleveraging” and “going off-the-grid,” consumers are beginning to ask questions of themselves and industry alike about how much technology, information, media and accoutrements are necessary.

Signals:

- US data from the Consumer Electronics Association showed a significant jump in personal technology acquisition in the midst of a recession, with spending climbing over 10% year-on-year, and a jump from an average of 23 to 25 individual devices in each household. In Canada, spending on technology services and some electronics was also up, reflecting greater reliance on mobile phones and Internet access, according to Statcan.
- Landline and cable replacement have become hot topics, with the number of households dropping landlines for mobiles and cable for Internet access to TV programs rising. For many younger consumers with tight budgets, this reflects a desire to spend less and make better use of household space, as well as accommodating their more mobile habits. Some 12% of Canadians have dropped landlines, but two-thirds of those still with landlines told IDC they were considering dropping them as well.

- Rapid update cycles are encouraging consumers to “trade up” in shorter time increments to keep the pipelines of product moving. Apple, which wasn’t even in the mobile phone or slate computing business before three years ago, has now released four iterations of its popular iPhone product in this timeframe, and now sees around 60% of its global revenues from these products only recently introduced, according to some analysts. As one of the few markets which has seen growth in the recession, manufacturers and related businesses are looking to continued consumer purchasing of their goods for an economic boost.

Implications:

- Consumer may slow their rate of acquisition of new products and services as they reach economic, psychological and spatial limits to manage the rising number of devices.
- Consolidations into convergent devices and services are likely to increase. Products such as the iPad, which can function as a video player, gaming device, remote control etc., may become more popular as consumers seek to cut down while not cutting out.

The Problem of Stuff

Countertrends:

- Continued introduction of single-function devices, such as e-readers or GPS devices, and introduction of technologies into new areas, such as vehicles, health care, education and other areas may drive uptake of even more technology into the household.

Extrapolations:

- Manufacturers and developers alike may have to turn more toward “upcycling” technology, allowing consumers to upgrade without acquiring new items, mainly through updates in software and capabilities. This may also be a route to adding new functions, as we have seen with recent smartphone models having completely new services enabled with a new purchase.

Other Resources:

- 12th Annual Household CE Ownership and Market Potential Study*, CEA,org,

http://www.ce.org/Press/CurrentNews/press_release_detail.asp?id=11900

- Peter Nowak, “More Canadians ditching landlines: report,” CBC News, June 1, 2010,

<http://www.cbc.ca/canada/story/2010/06/01/wireless-cellphone-substitution.html>

- Survey of Household Spending, Statistics Canada,

<http://www.statcan.gc.ca/daily-quotidien/091218/dq091218b-eng.htm>



Purses, pockets, backpacks and countertops are filling with more and more gadgetry, leading to piles of unused or “retired” devices and accessories in the average home. Image: Flickr/Stevelyon

2020 Media Futures Trends Package

ECONOMIC

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Economic

- **Agile Vs. Formal Production:** Traditional top-down models are increasingly running up against agile bottom-up approaches on the Web, creating a clash of cultures, but also driving innovation.
- **DIY Distribution:** Digital tools and processes have enabled independent producers and creators to use the Internet as a distribution channel to directly connect with consumers and audiences in the process circumventing some of the cultural industries' traditional intermediaries.
- **Aggregation:** The vast amount of content on the Internet provides ample opportunities to become an aggregator, helping users navigate and curate consumption.
- **Prosumers:** Inexpensive digital production tools, digital storage, the proliferation of free online social platforms, increasing broadband speeds, and computer processing power have made it easy and inexpensive for non-professionals to create content.
- **DIY Technology:** Open-source software and hardware is making it easier for individuals and groups to assemble customized devices that provide the functions they desire.
- **Transmedia:** The creators of properties in one medium are repurposing their story, their characters and any other aspects of their IP in other media.

Agile vs. Formal Production

Trend type: Economic

Industries: All

Traditional top-down models are increasingly running up against agile bottom-up approaches on the Web, creating a clash of cultures, but also driving innovation.

New communication and development tools and processes are entering the creative arena with increasingly speed—and some might argue, power. They are most readily adopted by younger cohorts who are coming of age in an environment where fast, open, and lightweight—and often based on personal tools such as social networking—are the coins of the realm, in contrast to the often risk-averse, slow, and silo-ed traditional development approaches, tools and business models. This migration is also a result of the increasing overlap between technology development and media development as more media goes digital, bringing technology models with it. As a result, creative industries are among those grappling with a friction between this new agility and the more formal models.

Signals:

- During the development of the Lord of the Rings trilogy, director Peter Jackson made extensive use of more informal, personal technology to speed development cycles on the epic films which were spread across development teams worldwide, including a system of iPods loaded with rushes, which were couriered from New Zealand to London and other production sites daily.
- Animation pioneers Pixar brought the agile development processes which many of its animators and technicians picked up in graphics software and hardware circles to the studio's creative processes, enabling it to innovate quickly on new animation techniques and speed production of films.
- Accelerating release cycles for new media, such as newspaper, film

and band Web sites, increasingly integrate Web 2.0 and social networking technologies which rely on agile development processes themselves—including using features and technologies that are often novel and unproven, or for personal use, leading to quickly morphing sites and services.

Implications:

- New skills, techniques and timescales must be integrated into larger media organizations' internal processes, leading them to behave more, not less, like startups.
- Changes to economic models will be forced onto more traditional businesses as they seek to remain competitive and innovative, including accommodating shorter, more intensive development cycles, and the ROI horizons that accompany them.
- Traditional businesses will have to come to terms with the implications of existing in a constant state of alpha and beta release, which is common in the technology industry. This means less potential control over creative processes, and fluctuating economic models, with greater opportunity for negative as well as positive outcomes.

Agile vs. Formal Production

Countertrends:

- Some organizations may embrace a return to authentic, auteur cultures, with slow, careful and risk-averse production cultures that produce more considered output to fill gaps left by less traditional media. Independent filmmakers, musicians and media, for example, may slow release cycles and produce more costly but unique product as an intentional counterpoint.
- The “consumer as producer” trend may also lead to slower, less innovative production techniques re-entering the arena more prominently, as it centers on careful handmaking with less regard for innovation.
- Large MMORPGs, such as Starcraft II and World of Warcraft, are seeing years between release cycles due to the technical complexity of development. As the underlying structures and delivery of these games—a mix of online and offline, social network and traditional gameplay—grow more entangled, production times and processes may continue to grow.

Extrapolations:

- The shift to agile production could encourage further fragmentation of media products into more lightweight, episodic forms, reminiscent of earlier eras of media production, with many upstart print journals or film serials made by smaller producers. Shorter films released in episodic fragments, the digital equivalent of EPs in music, and serialized books released in chapters as they are written, all fed to digital devices as released, could be a result.

Other Resources:

- “Hollywood 3.0” Wired, June 2010, http://www.wired.com/wired/archive/6.10/hollywood_pr.html

Released	Movie Name	Worldwide Gross	Budget
11/22/1995	Toy Story	\$361,948,825	\$30,000,000
11/20/1998	A Bug's Life	\$363,109,485	\$45,000,000
11/19/1999	Toy Story 2	\$484,966,906	\$90,000,000
11/2/2001	Monsters, Inc.	\$526,864,330	\$115,000,000
5/30/2003	Finding Nemo	\$867,894,287	\$94,000,000
11/5/2004	The Incredibles	\$632,882,184	\$92,000,000
6/9/2006	Cars	\$461,923,762	\$70,000,000
6/29/2007	Ratatouille	\$620,495,432	\$150,000,000
6/27/2008	WALL-E	\$532,743,103	\$180,000,000
5/29/2009	Up	\$731,304,609	\$175,000,000
6/18/2010	Toy Story 3	\$1,054,112,427	\$200,000,000

Pixar has released 10 blockbuster animated films since 1995, with reasonable control over development budgets over that time, but escalating economic returns.
Source: <http://www.the-numbers.com/movies/series/Pixar.php>

DIY Distribution

Trend type: Economic

Industries: All

Digital tools and processes have enabled independent producers and creators to use the Internet as a distribution channel to directly connect with consumers and audiences in the process circumventing some of the cultural industries' traditional intermediaries.

•While DIY distribution is not a new trend, it has found new life over the last decade with the combination of digital production technologies and globally distributed networks. These two factors have helped to reduce the complexities and costs associated with distribution and lowered the bar to entry such that creators and independent producers of cultural content have been able to contemplate distributing their own work. The success of this trend challenges the roles of traditional intermediaries such as distributors, publishers and broadcasters, many of whom are increasingly looking at ways to tap DIY Distribution as an adjunct to traditional channels.

Signals:

•The book industry has begun to take notice of print-on-demand services such as Lulu.com and Amazon.com's BookSurge, which allow direct printing and distribution by authors. Lulu.com claims to have published over 1.1 million authors via its service.

•While the vast number of smartphone apps are sold through app stores of major platforms, an increasing number are distributing their paid and free apps via the Web, particularly for the more open Android platform. This follows the model set by freeware developers over the past two decades distributing their software and games via the Internet.

•David Byrne, Radiohead and an increasing number of major independent artists are using direct distribution channels for music to augment distribution through media companies. Radiohead's groundbreaking experiment for its In Rainbows album, which allowed purchasers to pay what they wanted for the product raised the profile of direct self-distribution for music.

•YouTube, torrents, and other Web-based channels are enabling producers of video content, even in the form of the serial television program, to reach audiences directly without need for broadcasters to carry their content.

Implications:

•Development of major platforms for self-distribution, and growing consumer comfort with direct online purchases, may weaken the already fractured landscape of major corporate distribution channels.

•Rights distribution structures may be weakened by the pullout of more major content creators, diluting their economies of scale.

•Strengthening DIY Distribution may spur further development in formats, standards and platforms for digital media transfer, including not only from the creators' side of the equation, but also for hardware and software makers that want to include these new formats.

DIY Distribution

Countertrends:

- Major content companies and distributors continue to shop for independent distribution channels to co-opt into their businesses, effectively bringing channels and platforms for DIY Distribution back under their wings when economically possible.

Extrapolations:

- Major content distributors could be severely weakened as digital channels proliferate across different media (as is happening now with electronic books) and consumers become more comfortable with searching for, paying and obtaining independently produced content.
- New aggregators may emerge, as search engines and content portals and platforms like the newer video-on-demand services are doing now, helping content consumers navigate through thousands of independent sources.
- Producers may further develop their own self-organized distribution channels, much as services like Etsy have done today for craft and design, but with a greater degree of decentralization with lightweight cooperation around functions such as payment and fulfillment.

Other Resources:

- David Byrne, “David Byrne’s Survival Studies for Emerging Artists—and Megastars,” *Wired*, December 2007, http://www.wired.com/entertainment/music/magazine/16-01/ff_byrne?currentPage=a1
- John Horn, “DIY Means Distribute It Yourself,” *Los Angeles Times*, October 30, 2008. <http://articles.latimes.com/2008/oct/30/entertainment/et-word30>



British band Radiohead's 2007 experiment with self-distribution raised awareness of the possibilities it holds, and also shook up the music industry. The band claims to have distributed 1.2 million versions of the *In Rainbows* album in the first day of its online availability, though the band's label disputes this figure as high. http://en.wikipedia.org/wiki/In_Rainbows

Aggregation

Trend type: Economic

Industries: All

The vast amount of content on the Internet provides ample opportunities to become an aggregator, helping users navigate and curate consumption.

Since the earliest days of the Web, aggregation has been seen as an important function, providing order and access to large amounts of distributed or otherwise disorganized or un-contextualized content and services. With the open nature of the Internet, aggregation is seen as not only a navigational necessity, but a means of climbing to higher positions in information hierarchies as well as in gaining commercially advantageous positions to draw users. In the post-portal era, where aggregators are less gatekeepers and more destinations, vast new catalogs of content, from raw data to video and other media, are the new fodder for aggregation.

Signals:

- Companies such as Google, which has been masterful at turning collection and analysis skills into “eyeball” aggregation, show that, even after 15-plus years of the commercial Web, successful aggregation is rewarded economically more than any other activity online.
- With the data boom of the Web 2.0 phase of Internet growth, where thousands of startups emerged to organize, curate and filter data and social media, successful businesses have been those that best aggregate information and make sense for users.
- Data visualization is important as a means of making sense of increasingly larger sets of aggregated content and information. As our use of and reliance on the Web increases, aggregation will continue to play a central role in the management of growing amounts of data, content and services.
- Microsoft, IBM and many other large and small companies have been

involved in development of enterprise aggregation tools to help organizations make internal use of both internal and external content over the past decade.

Implications:

- As information on the Web continues to increase in volume from an estimated 988 exabytes today, and the user population expands well beyond 1 billion, new forms of aggregation will be necessary as basic tree-and-branch “catalogs” and other simple means of organizing and sorting fail to keep up with both the shifting nature of data and content and modes of usage. Visualization, as the current “new” approach, may give way to new forms of contextual aggregation, with sorting and presentation determined by the dynamic needs and context of the user. These techniques may be able to make use of thousands of “values” of content to sort in different ways.
- As aggregation maintains and grows its commercial value, commercial entities will continue to seek ways of capturing and organizing so-called “free” data created by the public, such as consumer-generated content.
- Innovative new means of aggregation will continue to be highly sought as a means of maintaining its commercial value.

Aggregation

Countertrends:

•Though there are few indicators of this at present, continued commercial aggregation of publicly generated content, such as behavioral data, consumer generated content, and the increasing output of an expanding range of sensors and monitoring technologies in the environment may provoke push-back against this exploitation, with individuals seeking to “free” data from commercial aggregation, and seek direct distribution channels.

Extrapolations:

•With the growth of the semantic and mobile Webs, aggregation is likely to become increasingly contextual as information and content becomes more open and freely manipulated. We may begin to see everyday things such as maps as merely an aggregation interface to show us contextual information aggregated geographically based on our particular location and needs. Likewise, content such as media could easily re-aggregate or re-sort based on the current viewer and his or her context, even within the same interface. Such dynamic aggregation is beginning to show itself in services such as Amazon.com, iTunes and Netflix, as they re-aggregate and represent content based on the last action of the user.

All time most popular tags

animals architecture **art** asia australia autumn baby band barcelona **beach** berlin bike bird
birds **birthday** black blackandwhite blue bw **california** canada **canon** car
cat chicago china christmas church **city** clouds color concert dance day de dog
england europe fall **family** fashion festival film florida flower flowers food
football **france** friends fun garden geotagged germany girl girls graffiti green
halloween hawaii holiday house india iphone ireland island italia **italy** japan july kids la lake
landscape light live **london** love macro me mexico model mountain mountains museum
music nature new newyork newyorkcity night **nikon** nyc ocean old paris
park party people photo photography photos **portrait** raw red river rock san
sanfrancisco scotland sea seattle show sky snow spain spring street **summer**
sun sunset taiwan texas thailand tokyo toronto tour **travel** tree trees trip uk urban
usa vacation vintage washington water **wedding** white winter yellow york
zoo

Popular social photo aggregator Flickr became one of the early users of the tag interface as a means of navigating vast amounts of generated content. As with many Web 2.0 uses of tagging, tag size correlates dynamically to frequency of tag use, giving visitors a way of not only finding information, but finding out which content is most popular.

Prosumers

Trend type: Economic

Industries: All

Inexpensive digital production tools, digital storage, the proliferation of free online social platforms, increasing broadband speeds, and computer processing power have made it easy and inexpensive for non-professionals to create content.

Inexpensive digital production tools, digital storage, the proliferation of free online social platforms (Facebook, MySpace, YouTube, Flickr etc), increasing broadband speeds and computer processing power have made it easy and inexpensive for non-professionals to create content. And create it, they have in vast quantities. Today, the average digital consumer is:

- writing content for blogs, online newsgathering organizations, Twitter, Facebook, self-published books;
- shooting and editing her own videos/films;
- creating, recording and producing her own music;
- shooting her own photographs, etc.

While much content is of low production quality and not intended as a money making venture, some non-professional content producers are creating professional quality content, gaining recognition within industry circles and starting careers as professionals in the cultural industries.

Signals:

- The meteoric rise of social media, including blogs and social video services such as YouTube have been strong indicators of consumer desire to create and share their own media.
- The popularity of tools specifically developed for the enthusiast in the making of this content is another indicator of this trend's growth. The low-cost and easy accessibility of tools such as high-definition video

cameras and powerful editing software, for example, has attracted more so-called prosumers into the creative arena.

Implications:

- The growth of prosumer-created media is having a direct impact on consumption patterns of professionally produced media, eating into time spent viewing, reading or otherwise consuming the latter. This has put prosumer media in direct competition to traditional media.
- Distribution platforms are opening up and becoming more democratized, even blending professional with prosumer content in order to attract audiences. This is happening with gaming, news, music and video, where some platforms mix both sources.

Prosumers

Countertrends:

•As with many trends driven by democratization, there are few notable countertrends to the rise of prosumerism. There are no evident signals of a return to expert specialization in the near future, though continued economic weakening could result in less ability by prosumers to engage in their favored activities. Already some companies are scaling back or canceling extension of prosumer tool lines, notable high-end camera maker RED.

Extrapolations:

•Steady expansion of prosumerism, combined with plentiful open technology and networks, could lead to extension of what author Chris Anderson calls the long-tail phenomenon, with as many niche markets and “channels” for content as there are consumers.

Other Resources:

•Duncan Riley, “The Rise of the Prosumer,” TechCrunch, June 15, 2007,
<http://techcrunch.com/2007/06/15/the-rise-of-the-prosumer/>



Previously the purview of trained professionals, high powered still and video cameras are now designed as much with the prosumer in mind, such as this Sony DSLR. Source: Flickr/ The Other Martin Tyler

DIY Technology

Trend type: Economic

Industries: Interactive

Open-source software and hardware is making it easier for individuals and groups to assemble customized devices that provide the functions they desire.

An increasing number of technology consumers are exploring various degrees of DIY technology, from open source operating systems to custom hardware, displaying a growing comfort with technology, fatigue with closed, one-size-fits-all offerings, and often a desire to innovate or experiment. This is yielding a growing industry for open technology, encouraging makers to tinker with the plumbing of their own devices, applications and services.

Signals:

- While homemade technology was popular in Silicon Valley of the 1980s, both hardware and software remained largely controlled until open source operating system Linux emerged in Scandinavia in the 1990s. Though it remained a somewhat niche environment for the better part of a decade, in the past five years, Linux has become the core of numerous new devices, such as set-top boxes, interactive TVs and other media devices, and OSs, including Google's increasingly popular Android OS.
- Open source hardware, such as the Arduino programmable circuit board, and easily modified devices such as the Chumby multimedia device, have opened up interest in DIY innovation with programmable technology. Maker Fairs, which have become increasingly popular across North America among both technology enthusiasts and a more mainstream audience, provide access to the parts and know-how to create new platforms for interactivity.
- Modular approaches to software and pre-fab components such as object libraries for software and simple authoring systems enable less

knowledgeable users to configure their own devices.

- Modifying or "modding" software and hardware is becoming more acceptable and popular among early adopters. From iPhone "jailbreaks" to mods for Android devices and popular gaming platforms such as the Wii and Xbox are more widely available, enabling those with an interest to add functionality or remove unwanted limitations from devices.

Implications:

- Users are starting to have a greater voice in shaping the functions of their devices, and are increasingly pushing innovation from formal sources that feel pressure to accommodate the functionality modders desire.
- Bottom-up innovation is becoming a recognized force in technology markets, with important disruptions increasingly coming from informal sources.
- Hegemony of a small number of technology companies is weakening. The phenomenal growth of the Android system, available to anyone who wants to make a mobile phone, has put pressure on companies like Apple and Microsoft in a short time since its release.

DIY Technology

Countertrends:

- Some of the major technology companies have pushed back at openness, creating more restrictive licensing, implementing digital rights management and other measures to ensure control of their technologies and markets.

Extrapolations:

- Technology markets, and the content and media that rely on them, will doubtlessly become more fragmented over the next decade, driven in part by a boom in bottom-up innovation and new entrants, but also due to the fight for control of these markets by traditional leaders, driving even more users in search of choice and personalization.

Other Resources:

- Make Magazine
- O'Reilly Radar, <http://radar.oreilly.com/>



Tech enthusiasts are turning to DIY technology in a search for the experiences they desire, a sense of control, and contribution to the larger community. Magazines like Make, and various DIY tech sites provide supplies and instructions to aid creators in their quest.

2020 Media Futures Trends Package

POLITICAL

<http://2020mediafutures.ca/>

Super Ordinary Lab
& Changeist

Political

- **A Neutral Net or Not?:** Governments and private interests continue to explore the necessity of tiered Internet access to provide differential quality of service based on the status of the consumer.
- **IP Challenges:** P2P technologies, remixing, and hacker culture's cycle of rapidly breaking technological protections is steadily eroding the position of IP protection of content worldwide. Some commercial entities have responded by altering business models to reflect this change.
- **Surveillance:** Both online and in the physical world, issues of covert and overt surveillance are emerging as a side effect of a society in a deep embrace with technologies and networks.
- **Gov 2.0:** Governance enabled or enhanced via the Internet and mobile networks through new applications and services designed to create access for the wired citizen, is spreading at both local and national levels.

A Neutral Net or Not?

Trend type: Political

Industries: Interactive

Governments and private interests continue to explore the necessity of tiered Internet access to provide differential quality of service based on the status of the consumer.

As far back as the early 1990s, conflicts have existed regarding ISPs' obligation to allow access to its network by all applications and services publicly available on the Internet. As infrastructure build-out investment has increased, usage and traffic levels climbed, and competition increased, carriers in different parts of the world have argued for the need to charge different tariffs for different classes of service, and to be able to restrict or charge more for bandwidth intensive applications. While the political arguments ebb and flow around the issue, forecasted bandwidth crunches in coming years have raised the question of maintaining equal access principals.

Signals:

- Since 2005, carriers in the US, Canada and the UK in particular have been pushing back against government requirements to maintain open access to networks, provoked by the increasingly powerful presence of companies such as Google and Skype that have not invested as much in network infrastructure.
- In various countries, bidding for new wireless spectrum has triggered fights about the responsibilities of winning bidders to allow most activities over the networks which will use this spectrum.
- The explosive growth of online video and peer-to-peer services has driven carriers to question whether they should pay for the network infrastructure to carry services they do not benefit from.

Implications:

- Even under the current regimes worldwide, many carriers have

selectively blocked or “throttled” certain services seen as being parasitic on their networks. One impact of this has been to encourage hacking and other means of subverting these controls.

- Concerns have been raised that creating clearly tiered access levels with differential charging may create disparities based on economics, with lower income users having less access to broadband-enabled services and content, such as online video, IPTV and Voice over IP.
- Carriers are becoming more circumspect about their willingness to invest in new infrastructure, potentially holding back new services and exacerbating future capacity issues.

A Neutral Net or Not?

Countertrends:

- Governments more focused on consumer protection, such as the current US administration and some in Europe, have continued to enforce a neutral Internet.

Extrapolations:

- Tiered access would resemble a turbocharged version of the dial-up access era, with major speed and cost differentials resulting in “haves” and “have nots,” with pockets of fast access and rich applications and next generation services segregated from slower access areas or households locked out of some services based on high costs.

Other Resources:

- Network Neutrality, Wikipedia, http://en.wikipedia.org/wiki/Network_neutrality
- Network Neutrality in Canada, http://en.wikipedia.org/wiki/Network_neutrality_in_Canada
- EU Launches Net Neutrality Inquiry; Joins US, UK, and Canada, Arstechnica, June 30, 2010, <http://arstechnica.com/tech-policy/news/2010/06/eu-launches-net-neutrality-inquiry-joins-us-uk-and-canada.ars>



Canadian consumers have joined their peers in the US, UK and beyond to argue against tiered access to the Internet as proposed by some carriers. Deep packet inspection and traffic shaping are two practices opponents argue carriers have used to impose a type of de facto tiered access. Image: Flickr/JasonWalton

IP Challenges

Trend type: Political

Industries: All

P2P technologies, remixing, and hacker culture's cycle of rapidly breaking technological protections is steadily eroding the position of intellectual property protection of content worldwide. Some commercial entities have responded by altering business models to reflect this change.

The increase of copying, piracy and modification of media in the digital era has put pre-digital intellectual property regulation in the crosshairs as producers and owners of media struggle to fight, adapt or co-opt these and other forms of copyright abuse and IP rights violations. As new protection mechanisms are developed, they are often quickly broken by hackers, feeding a substantial, complex global network of illegal digital media. At the same time, legal owners' ability to transfer licensed media from one device to another, fed by the media ecosystems that have been marketed by technology companies, have been curtailed. The net result has been shifts in both legal and commercial thinking about the role and rules of intellectual property protection in the digital age.

Signals:

- Peer-to-peer digital media platforms such as Napster, BitTorrent, LimeWire and hundreds of similar systems enabled possibly millions of Internet users to exchange copyrighted digital media illegally over the past decade, starting in the late 1990s.
- Pirate Bay, a Swedish Website that has undergone continued legal challenge, scaled up torrent distribution to a global, and very public, level, confronting legal authorities as it continued to act as a distribution point for copyrighted media. Founders of the group and Web site have since formed a political party in Sweden, the Pirate

Party, which won 7% of the vote in 2009 elections in Sweden.

- Created by noted legal scholar Lawrence Lessig in 2001 with colleagues, the Creative Commons framework sought to establish a means of licensing works in an alternative fashion to traditional copyright, in order to facilitate sharing and reuse of intellectual property. Created originally with US IP frameworks in mind, the CC system has since been "ported" to 52 countries and jurisdictions.
- After resisting a flexible digital rights management system that would allow purchased digital media to play on other devices and platforms than its dominant platforms, Apple introduced iTunes Plus, which provides media DRM free in return for a higher cost. Other digital media distributors have followed suit.

Implications:

- Rather than solely rely on increased DRM protection, some major media owners have begun to shift to new frameworks. This movement is likely to continue and spread as media owners seek greater revenues from interconnected digital platforms.
- Costs for digital media, and media in general, to the end buyer will likely continue to increase, as both direct and indirect result of looser IP protection.

IP Challenges

Countertrends:

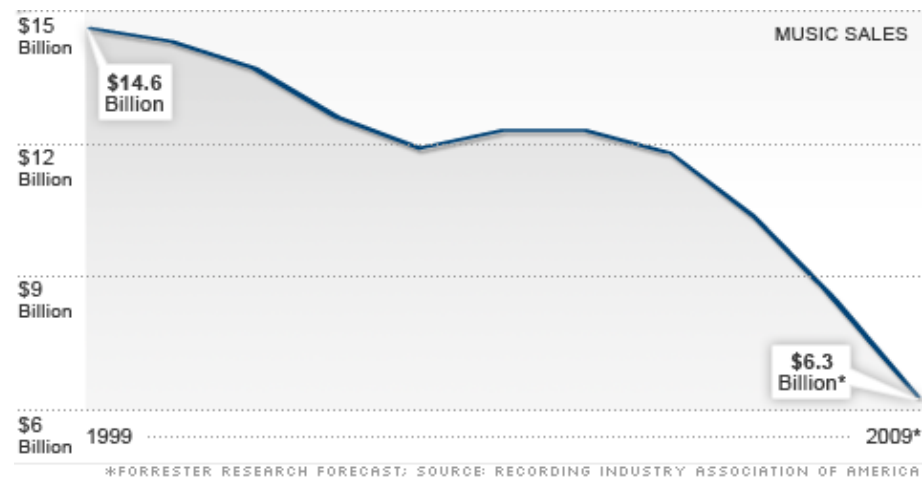
- A number of public and private international negotiations and draft treaties seek to tighten IP protection with a specific view to staunching digital media piracy. As digital tracking and surveillance capabilities grow, some groups and governments will continue to fight loosening of IP frameworks.

Extrapolations:

- National governments and international bodies may continue to rethink IP frameworks as they seek to adapt to the digital era. Frameworks such as Creative Commons may begin to be accepted within formal IP frameworks, altering how we think about property rights and trade.

Other Resources:

- Lawrence Lessig, "The Future of Ideas: The Fate of the Commons in a Connected World," (Vintage, October, 2002)
- Berkman Center for Internet & society, <http://cyber.law.harvard.edu/>



Major media producers and distributors have been concerned about the impact of digital networks on media revenue for over a decade. The chart above from Forrester Research shows the decline in US music revenue coinciding with the spread of file sharing.

Surveillance

Trend type: Political

Industries: All

Both online and in the physical world, issues of covert and overt surveillance are emerging as a side effect of a society in a deep embrace with technologies and networks.

Digital networks are enabling much more extensive monitoring of the actions, media consumption patterns and interests of groups and individuals, from law enforcement and government intelligence to private sector companies and organizations for whom motivations are not always clear. Particularly in an era of heightened security concerns due to terrorism, as well as increased power of citizens enabled by technologies such as mobile phones and the Internet, surveillance appears to be growing globally. This surveillance is happening at all levels, from on-device monitoring to Web sites to deeply embedded tracking within networks.

Signals:

- Government crackdowns worldwide against communication tools and open Internet access have been on the rise in the past decade, increasingly sharply in recent years. China's so-called "Great Firewall" which blocks access within the country to certain content, is probably the best known of these surveillance tools. In the US post-9/11, federal government and law enforcement bodies have controversially monitored communication networks, with legal battles mounting over the ability to tap networks without prior clearance. Iran famously blocked Twitter and monitored Web and mobile activities during conflict after its presidential elections.
- Monitoring traffic in pornography has also increased globally, with cooperation among law-enforcement networks in major countries increasingly common in an attempt to stop trafficking in child pornography.

- The global growth of companies such as Google and Facebook, and their access to enormous amounts of personal data, online behavioral records and ability to map social networks have put the role of private companies in surveillance in question. Some companies have also come in for criticism because of cooperation with governments, from Google's initial cooperation with China over censorship to Nokia-Siemens' role selling communication monitoring technologies to Iran, the US and other countries. Across the board, ISPs have also worked with, and in some cases fought, governments' moves to monitor user behavior.

Implications:

- Individual citizens and consumers are becoming more aware of where and how their actions and interests are monitored as surveillance issues have become more high profile.
- Commercial companies' roles in surveillance have become a point of contention and in some cases have directly harmed their interests commercially as users in free markets have protested their actions.
- With Internet and mobile usage growing globally, governments will continue to be tempted to direct monitoring at these channels.

Surveillance

Countertrends:

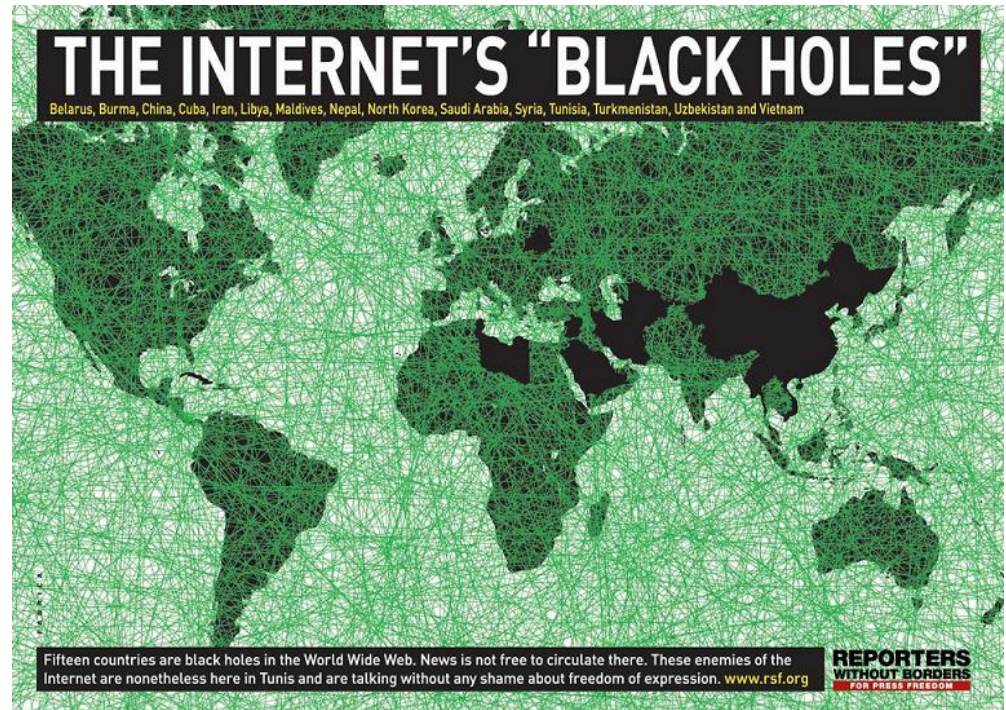
- Sousveillance, or the use of the same technologies and networks by citizens to monitor governments, has become the other edge of the two-edged surveillance sword. Individuals and groups have become much more powerful and adept at keeping governments in check, or providing powerful opposition.

Extrapolations:

- With government control of many national networks use of monitoring technologies on networks and devices is likely to increase as a cost of having access to these networks.

Other Resources:

- “Electronic Freedom Foundation, <http://www.eff.org>



International groups such as Reporters Without Borders have pushed to raise awareness of Internet monitoring and outright censorship in countries around the world.

2020 Media Futures Trends Package

VALUES

<http://2020mediafutures.ca/>

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& Changeist

Values

- **Blurring Life and Work:** The 24-hour nature of always-on access, availability of networks, and demand for productivity, mean we are losing the ability to keep work and personal consumption and behavior compartmentalized.
- **Inverting Privacy:** The rise of social networks and boom in DIY content have together changed the nature of privacy, allowing people to expose information about themselves on public networks, often for an incentive of lower cost services or other network efficiency.
- **Social Collectivity:** Online access to millions of other individuals and the ease with which networks of like-minded people connect, has created the foundation for new forms of technology-enabled collaboration.
- **Generational Differences:** Differing technology uptake patterns among different generations are creating a generational divide in demand, which will further shape the delivery channels we use in the future.

Blurring Life and Work

Trend type: Values

Industries: Interactive

The 24-hour nature of always-on access, availability of networks, and demand for productivity, mean we are losing the ability to keep work and personal consumption and behavior compartmentalized.

A lifestyle that was once the purview of business road warriors has been made part of many people's lives through the spread of always-on connectivity, powerful devices, fluid life and work arrangements and applications and services that range across almost all of our screens. Two streams—the encroachment of consumer interactivity and communication into the workplace, and applications from business creeping into our homes, has created a blended, though not always welcomed, continuum of work/life existence online.

Signals:

- The rise of the smartphone as a consumer device signaled the spread of powerful e-mail and applications to the pockets of tens of millions of consumers. There will be an estimated 5 million smartphones in Canada by year-end 2010, based on Nielsen data, the largest percentage made up of RIM's BlackBerry smartphone, which is adapting more toward consumer markets from its traditional base as a business device. Nearly all smartphones now handle not only productivity applications but are able to carry games, video and other consumer-focused features.
- Researchers are increasingly tracking the use of technology during what used to be considered sacred personal downtime, such as on holiday with family, or weekends, nights and during time with family. Several studies in the past few years have indicated that around two-thirds of adults take technology with them on vacation with the intent of working or checking into the office.
- As applications such as instant messaging, calendaring and contact

management have jumped from business to home, more workers are using social networking, watching video and other media-intensive applications from the office and while working on the go. Shifting generational values have created an expectation among many Gen Y workers that these activities bring some productive benefit. Some companies have sought to harness these formats to communication internally, recognizing their social and productive value.

Implications:

- More and more media is being carried into the workplace as a result of companies equipping their workers with, or expecting them to have, smartphones or other powerful communication and productivity technology. Device makers have begun "splitting the difference" in design of their products in terms of style and function to accommodate this.
- The Web face of some consumer-focused media tools, such as YouTube, and e-mail services, such as Google's Gmail, have become more business-friendly, offering ways for businesses to customize these applications.

Blurring Life and Work

Countertrends:

- Some companies have issued outright bans of consumer technology or services in the workplace, citing impacts on productivity and security.
- Going “off the grid” has become an increasingly used phrase, describing the desire to disentangle from this blur of work and life technology.

Extrapolations:

- Technology itself is enabling a constant, fluid state of work and living. Coupled with the changing landscape of work and economics, the media and productivity device itself is becoming the core of our ability to work, communicate, and relax, with the structure of both work and living being shaped around it.

Other Resources:

- Pew Internet and American Life Project,
<http://www.pewinternet.org/topics/work.aspx>.



According to recent Nielsen data, over half of online consumers watch video from the workplace worldwide. In countries such as Canada, the US and UK, where home Internet penetration is high, many employers block outside media and social networks at the firewall. For consumers in many countries, however, the workplace provides the main access to broadband and fast PCs.

Image: Flickr / Jasha J.

Inverting Privacy

Trend type: Values

Industries: Interactive

The rise of social networks and boom in DIY content have together changed the nature of privacy, allowing people to expose information about themselves on public networks, often for an incentive of lower cost services or other network efficiency.

As Internet users embrace a wider range of services, purchase from more Web sites, exchange information about themselves and their preferences, download applications and participate in communities, join social networks and share media, they are exposing, both unintentionally and through their participation an increasingly extensive amount of information about themselves. From financial information to friendships to consumption habits, 'netizens essentially live in public. While many younger users in particular claim to care about their privacy, online norms and choices portray a range of attitudes toward what is private, and how valuable privacy is.

Signals:

- Until recently, there were notable variations in generational use of online e-commerce and financial services, largely due to concerns about exposure of private data. Success of newer payment systems, such as PayPal, e-taling based on the honor system, such as eBay, peer-to-peer classifieds such as Craigslist and newer, Web-based financial tools such as Mint indicate shifting public attitudes toward risk around disclosing personal information.
- Online ad tracking has fallen under scrutiny as more is known about the technologies and practices used by advertisers and data miners following user habits online. While some Internet users employ various security technologies, many continue to expose personal activity data either willingly, as much is known about these practices,

or unwittingly.

- Social networks have also become a focal point of concern around the issue of privacy, as sites such as Facebook enable far greater levels of transparency around personal connections, individual behavior reported or captured by social media, and activities. Gen Y is sometimes referred to as the "Facebook Generation" as a commentary about different attitudes regarding sharing of information.
- Location-based services have become the latest area of personal information disclosure, as public services such as Foursquare, Facebook places and Gowalla allow users to broadcast their location and movements to other users and participating businesses.

Implications:

- Social media sites have become goldmines of personal data, giving individuals, businesses and hackers alike massively increased access to personal information of users. Reactions to this have increased focus on data privacy and may be leading to a backlash around disclosures.
- Businesses may begin to think differently about what level of information they are able to solicit from customers, as users become numb to the effects of leaving a trail of behavioral data online.

Inverting Privacy

Countertrends:

- There has been some movement back toward privacy protection in the past year, with an open Facebook alternative called Diaspora Project gathering the most attention. Continued problems of data leakage from major e-commerce, financial and social network services may build to the point where a larger backlash sets in, with users either curtailing online activity or demanding greater protection, beyond what is offered now.

Extrapolations:

- Services which aggregate large amounts of an individual's disparate online activities and trails are already emerging through simple data mining technologies. Full-on "lifelogging" services may grow to create extensive online records of individuals' daily activities.

Other Resources:

- Electronic Freedom Foundation, <http://www.eff.org>
- Pew Internet and American Life Project, <http://www.pewinternet.org/>

The screenshot shows a Facebook notification from Yelp: "Yelp is sending this to your Facebook profile: Alexandre reviewed Boogaloo on Yelp." Below the notification are links for "Learn More | This isn't me" and "No Thanks". Below the notification is a "Close" button. Below the notification is a "Remove" button. Below the notification is a "Always publish stories sent to my profile from this site." checkbox, which is checked, and an "Okay" button.

How does Beacon work?

Facebook Beacon is a way for you to bring actions you take online into Facebook. Beacon works by allowing affiliate websites to send stories about actions you take to Facebook. Here's how that process happens:

If you are logged in to Facebook and visit a Beacon Affiliate, an action you take (like writing a review or purchasing an item), may trigger that website to want to publish a story to Facebook. Before that happens, the website will send some information to Facebook in order for Facebook to generate a notification that will display in the lower right corner of your screen. If you click "No Thanks", no stories or information will be published anywhere on Facebook. Any information that was sent to Facebook's servers will be deleted. If you click "Close" or ignore the story, the story will be sent to Facebook, but not yet published.

The next time you visit your home page, you'll see a message remind you that this story is being sent. There are three things you can do with this story—approve the story by clicking "Okay", remove the story by clicking "Remove", or ignore the entire message by doing nothing. If you approve the story and click "Okay", the story will be published in your Wall and may appear in your friends' News Feeds. If you remove the story using the "Remove" link next to it, the story will never appear in your Wall or a friend's News Feed. If you ignore the whole message, it will go away after a few days and nothing will be published to Wall or News Feed. However, when you ignore a story, it remains queued, so that the next time you generate a Beacon story, this home page message will have two stories, instead of one.

Once this story has been published, it will appear in your Wall, and may appear in the News Feeds of your friends.

You can control how Beacon interacts with your profile from the "Wall Permissions" tab of the Applications page.

Please note that behind the scenes, affiliate sites may send information to Facebook in order to determine if you are logged in or not. In these cases, information is not associated with your individual account, and Facebook deletes the data as well.

Facebook's Beacon service, launched but then retracted in 2008, enabled the network to broadcast information about users' purchases and other activities to their social networks online, ostensibly to encourage similar activities among friends. It was taken down after furious protest from both network members and privacy advocates.

Social Collectivity

Trend type: Values

Industries: Interactive, Books

Online access to millions of other individuals and the ease with which networks of like-minded people connect, has created the foundation for new forms of technology-enabled collaboration.

The ability to connect with other people, around background, affinity, need, social links, expertise and many other attributes in a nearly friction-free manner has encouraged the emergence of many forms of social collectivity online, and has helped this dynamic become one of the defining trends of the Internet era. Some might argue it is so fundamentally defining of the medium that social collectivity is now shaping new generations for whom digital technology and communications are core to their lives. In the realm of digital media, it means everything from collectively producing content through social media to collaborative consumption. Increasingly, these patterns are being tracked, measured and used to drive how media is delivered, and how it is perceived, through voting, comments, recommendations, viral transmission, etc.

Signals:

- The online rating site Digg was one of the first major platforms to harness the idea of the social collective on the Web, allowing users to “digg” or vote a news story to the top of its site, and thus power the story or item to broader public attention. Digg led the way for social media such as Facebook and its “like” feature, and YouTube’s viewing statistics, and both of these services’ embedding strategies that weave social collectivity into many other Web, mobile and now TV services, retail and beyond.
- Amazon’s early use of buyer comments as an additional decision filter for products it sells also set the tone for opening e-commerce and other areas up to the social collective. It has now taken this dynamic to

new levels with the Kindle e-reader, enable social commenting and annotation of e-books read on the device—allowing users to see what others think about certain passages.

- Social networking is now the top application used on the Web in terms of time spent. Social networks have become the primary means of the social collective mobilizing, whether around entertainment or social causes or practically any other activity which can be connected or documented online.

Implications:

- Peer actions and transparency provided by the Web are both now heavily influencing both online and offline behavior, particularly as off-line activities and consumption can be linked to online services. Consumers are “swarming” to a much greater degree around topics, products, and media because of this transparency into social actions.
- Product development and innovation, including around media, are becoming strongly shaped by collective social actions enabled by the digital networks. From fan support for TV shows, instant reaction to film, and downloading of book chapters all now function as an instant indicator of demand,

Social Collectivity

Countertrends:

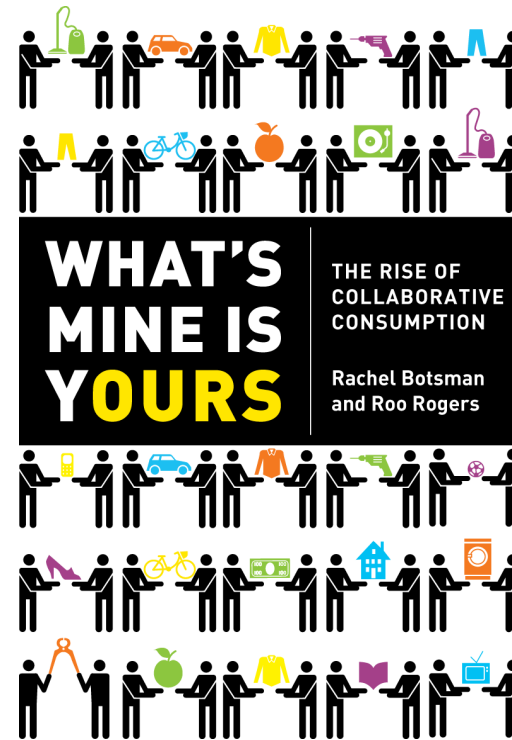
- There is emerging discussion about the failures of social collectivity online, particularly around putting too much reliance on crowdsourcing idea generation, or reacting too quickly to the digitally expressed whims of social groups online, as the network tends to magnify impact and effect or collective sentiment. However, deeper embrace of broader social effects of technology appear to be “hardwired” into the expectations of a generation raised on technology.

Extrapolations:

- Social collectivity on digital networks impacted the very highest levels of government in the US elections of 2008, and continue to do so there and in other countries. Despite setbacks along the way, the so-called “hive mind” of the social collective may become the primary source of inspiration and approval on new media and product development in future, contributing not only ideas but content and components for many forms of media.

Other Resources:

- Clay Shirky, “Here Comes Everybody: The Power of Organizing Without Organizations” (Penguin Group, February 2008) .
- Rachel Botsman and Roo Rogers, “What's Mine Is Yours: The Rise of Collaborative Consumption” (Harper Business, October 2010).
- <http://www.smartmobs.com/>
- Henry Jenkins, “How YouTube Became OurTube,” Confessions of an ACA/Fan, October 18, 2010, http://henryjenkins.org/2010/10/how_youtube_became_ourtube.html.



Rachel Botsman and Roo Rogers discuss the power of social collectivity and the Internet on both on- and offline consumption patterns, particularly how technology-enabled sharing is shaping how we live.