

Web 2.0 – A Modern Renaissance in the Making

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Executive Summary

The demarcation point between Web 1.0 and Web 2.0 is inherent in the asynchronous and dynamic business applications resulting in greater depth of interactivity between the client and the personalized content delivery of information. Web 2.0 is the genius of collaborative user value. The impact of Web 2.0 Internet applications will have a disruptive impact on society in many ways. This paper will analyze how this technology will impact us economically, culturally, and organizationally. We will evaluate what social networking means to users and current profitability models for business as they interact on a global scale.

Web 2.0 is transforming the Internet and human civilization more than any technology in history. When you consider the impact and shift that has occurred from previous technologies such as the electronic telegraph, radio, telephone, television, and personal computer and Internet, Web 2.0's impact on people, their culture and organizational structures is powerful and will be swift.

In less than four years, half of the world's population will have an Internet access utilizing Web 2.0 technologies in website, blogs and business applications from a variety of devices. Previous technologies leap-frogged each other and the advantage was, if only temporary, exploited by the most powerful.

The Internet's power is its global ubiquitous presence. Web 2.0 is a seismic shift that is releasing an unquantifiable exchange of shared experiences in people's lives that will herald a richer and fuller spirit in human companionship. Ideas, people, organizations, nations and resources have each other to learn from, experience and witness unencumbered by distorted intermediates. What we are living through is the planet's first conversation. Miraculous events will unfold as malignant diseases are solved sooner, families are discovered, human suffering from perpetual horrors of poverty, cultural suppression and heinous crimes will be alleviated.

Web 2.0's breakneck technological revolution has its dark side that insidiously looks for ways to disarm people's private lives, wrestle out their economic wealth and dilute their political reforms and social gains.

Web 2.0 has strong alliances within a greater computing model paradigm shift. More infrastructure and applications will migrate to Cloud Computing. Open Source Software and standards will be disruptive for many industries and force a new business model going forward.

Business models will be heavily influenced by social media as consumers gain power and have a voice in product development and ongoing services. Talent is scarce since command and control processes have suppressed innovation and creativity within organizations. Collaboration, knowledge management and business intelligence will be at the center of businesses for competitive advantage.

Unlike other great shifts in history, the Internet is changing us and Web 2.0 is transforming us.

The Internet and Its Evolution

Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.

-Chief Seattle, 1855
(Welcome to The Quote Garden, ¶ 15)

Web 2.0 is transforming the Internet

In all periods of human history, the basic ability to communicate with people, societies and businesses was generally self-contained. The electronic telegraph provided for the first time information that could move at a greater velocity than previously conceived. Radio, telephone & television broadcast expanded the geography; however, the user interaction and connectivity remained jilted. Machines increasingly 'communicated' to each other at ever increasing speeds as data networks flourished. In many respects, Web 1.0 applications reflected this hierarchical and unidirectional purpose.

The dot bomb era ended in the early part of the century leaving a majestic legacy of unexploited communications bandwidth and inter-connectedness. Suddenly, the limitations or scarcity of access had vanished. The one-to-many economies of scales were inverted with a vengeance. For a few years, the world looked into the abyss of opportunity and reflected on the more we changed, the more we stay the same; worldwide email and efficient supply chains would suffice. Disruptive technologies are insidious for their massive consequences and acceptance; its phoenix has risen.

In the last 4 to 5 years, an estimated 1.6 billion people of a world's population of 6.7 billion have been connected to the Internet representing a staggering 23% of the earth's population. (Internet World Stats Usage and Population Statistics, 2009, World Internet Usage and Population Statistics, ¶ 1). Coincidentally, at that moment Web 2.0 development architecture was inaugurated. Tom Hayes, points out (Hayes, 2008) 70,000 people per day are added to the web and the 3 billionth subscriber is about to enter the scene less than four years away, representing approximately half of the world's population.

Web 2.0 Technologies

In the public domain prominent companies such as Amazon, Google, and eBay emerged. Their commercial success in the Web 1.0 space emerged as a form of communal indexers of fractured data proliferating exponentially with the Internet. In the corporate and government agencies Business-to-Business and global supply chain dependency became a daily circumstance.

Web 2.0 is a term that was coined at a Web Development Conference in October 2004 in San Francisco. Leveraging emerging Intranet technology such as Ajax, Common Gateway Interface (CGI) or Simple Object Access Protocol (SOAP) in combination with information technology's evolvement of Service Oriented Architecture (SOA) and Web Services, Web 2.0 enables user defined social networking (e.g. Facebook, Flickr) to amplify the value of the Internet (O'Reilly, 2008).

Although many of these technologies are not new and have been around for several years, it's the maturity level and innovation more recently used that are making the Internet a very remarkable landscape for individuals and businesses.

As open source and standards accelerated the development of the Internet, it's the collaborative spirit that has led to many open source technologies as the mainstream of Web 2.0 technologies. With the proliferation of collaborative groups and advancement in web technologies, it will continue to gain momentum over vendor's proprietary technologies. Software is becoming commoditized with the open source movement and interoperability standards will expedite the innovation possibilities and systems that are woven together in new and valuable ways.

SOA allows different applications to exchange data with one another through interoperable services. Standards are a critical component of SOA and continue to be streamlined and matured. The notion of having services on the Internet based on a complex service infrastructure will be the building blocks of SOA and Web 2.0 technologies.

Cloud Computing is not fundamentally about new technologies but the innovations around how they have been put together and the way Web 2.0 leverages it. It's an On Demand computing model that presents a new paradigm in how IT Services are provisioned and managed. This model allows for reduced costs in many cases as the economies of scale are factored into the value proposition of this model. There are three primary services available on the cloud: Infrastructure as a Service (IaaS); Platform as a Service (PaaS); Software as a Service (SaaS). There are Public Clouds and Private Clouds, or businesses may opt for a hybrid approach.

Web 2.0 has enabled Social Media on a global scale that will be disruptive to many industries, cultures and nations. The news media is a prime example where they have been severely impacted by the changes taken place on the Internet. It's difficult to tell whether a story was created by a professional or amateur. At a certain level, it doesn't matter, there is tremendous value emanating from the unshackled public. The news is a collective story not an interpretation of only a few.

Web 2.0's collaborative applications allowed for a one-to-many and many-to-many meta-info exchange. Unburdened by access, low barrier of entry, exponential global availability and acceptance, the Internet has changed us. Web 2.0 is transforming us.

The Personal Experience

There are only two forces that unite men - fear and interest.

-Napoleon Bonaparte
(BrainyQuote, ¶ 8)

The Generosity of Trust

Social networking and Web 2.0 are synonymous. A variety of Web 2.0 platforms enable people to share common interests and experiences in a bewildering array of multiple expressions and it is a global wild fire. Everything from individual blogs to Facebook, StudiVZ, Orkut, social networks use text, pictures, videos, voice, audio clips, music, art, in short anything and everything that can be digitally represented to represent ideas, hopes, dreams, family, delusions, illegal activity and desires, to allow them to create, develop, buy, sell, collaborate and share common interests. What was once personal is now public.

The various social networking forums have typically evolved out of self or common interests. Given the enormous size of some of these sites and the lightening speed of growth, something fundamental to human nature is being addressed as individuals redefine the composite of "community". Although larger sites are measured in the tens of millions, the individual sub-communities are significantly smaller.

Even more counter-intuitive is the notion of self regulation where the community regulates itself on how to conduct its affairs without any formal regulations and policies in place,, never mind the absence of any organized policing action. How has this happened? What role does Web 2.0 play?

The Mind at Work

In many respects, online communities are thinly committed to one another since they lack the immediacy of proximity. This is a deep attribute of human nature. This accepted 'thinness' with no historical benchmark as compared to the monumental integration of people and ideas points to organic laws of human nature.

According to Gregory Berns, a neuroscientist, "A core attribute of integrity that is deeply wired in all primates is the ability to assess, and respond to, fairness. Individuals who make decisions that consider equitable outcomes for all participants possess a high degree of integrity." (Berns, 2008, p. 146).

According to Bern, the brain's primary defence mechanism against a fear or the threat thereof is the amygdala. The anticipatory amygdala is well known for its fight-or-flight triggering mechanism regarding fear and ambiguity. Its discharge is ever present. In order to overcome the amygdala's deep rooted trait, a new experience needs to be presented as something novel (in the case of the young) or familiar (that the experienced are partial to).

The Internet has taken advantage of three generations of television, movies and gaming have tranquillized our fear receptors. The Internet is physically removed from our immediate proximity. Watching a horror movie does not trigger the amygdala like a horrific act played out in front of you.

The third component is the network's ability to make decisions by aggregation. Berns contends "The most effective way for a group to make a decision is by aggregating the opinions of *independent* decisions." This is precisely what Surowiecki extols in his perceptive book *The Wisdom of Crowds*.

How Web 2.0 Fits

Web 2.0 applications provide a plethora of tools that breed a sense of novelty and familiarity. Web 2.0 dampens the fear of social rejections and converts ambiguity into an inquisitiveness as an event for novelty/play or expands one's familiarity by increasing knowledge with anonymity.

With the amygdala at rest, integrity is allowed to flourish without personal risk of over-exposure being controlled by the person him or herself. Each member of the community contributes to the extent they wish to participate without fear of social embarrassment or financial loss. Aggregation is the result.

Without the development of the Web 2.0's toolkit and the ease of distribution through the Internet, at a neurological level, the amygdala would have been more dominant, thus restricting the otherwise incredible acceptance of the online social communities.

The Network at Work

In Malcolm Gladwell's parlance, everyone who attaches to a social community is a Connector (a person who knows a large number of people) of equal ranking since their sub-social community is created of self and common interest. Mavens are hybrid problem solvers. They leverage a network to unravel difficulties for themselves and others. (Gladwell, 2002). Web 2.0 technically supplements the Maven's capabilities by extending their span across Internet, in search of deeper knowledge and their ability to distribute their newly found treasure trove. A seemingly endless reservoir of data and information is a Maven's paradise.

Paralleling Gladwell's model of salesmen, Berns identifies successful iconoclasts as individuals who have lower levels of fear and "... have a preternatural for new experiences." (Berns, 2008, p. 8). Iconoclasts require the Gladwell's Mavens to be triumphant. Iconoclasts are driven by their vision (e.g. Ford, Picasso, Muhammad Yunus, Branson) and have a global playground (or social communities) of unbelievable richness at their disposal awaiting him/her to leverage. A pre-arranged social network is the iconoclast's pipe dream .

The Price We Pay for Novelty and Familiarity

None are more hopelessly enslaved than those who falsely believe they are free.

-Johann Wolfgang von Goethe
(BrainyQuote, ¶ 12)

The Internet is a double-edged sword. It presents a dichotomy of tremendous value and innovation while also a breeding ground of the Wild West for a variety of people with their dubious motives of leveraging the Internet for their corrupt purposes. Web 2.0 allows for a conversation or relaxed means to present information versus misinformation; transparency versus non-transparency.

People are shadows with a voice as they can take on any identity they choose with no accountability to what they do or say.

With the amount of user generated content exponentially increasing, the collaboration of ideas is generating innovations at faster rates. Advancement in technology is moving us from the information to the knowledge era. Data mining technologies are able to take on large amounts of data from many sources and create knowledge that is of value in unique ways. Businesses are using these vast amounts of personal information, voluntarily submitted by the user community, for their business initiatives.

In contrast to the earliest days of the Internet, a common impression (or myth) among many of its users maintained an idealist notion that the Net is a safe haven to express one's self without the risk of future consequences, the perils of which continue to be vastly underestimated by the general population.

This will lead to stricter regulations and a federated security model perhaps where personal tokens or an enhanced identity and access management will be the norm; in particular, financial and more important information exchanges such as health records will require significant security protection. Today, there are personal websites available such as www.patientslikeme.com where people are sharing personal health and illness information. Ironically, this comes at a time when many organizations have placed robust privacy of information safeguards.

Predictive Outcomes:

1. Personal security and privacy will trigger political repercussions as many people are not cognizant of how their personal information is being manipulated on the Internet. Class action and individual law suits will reverberate throughout law based societies. 🔑
2. Blackmail will be rekindled on a massive scale as an organized crime activity. 🔑
3. Public outrage will erupt causing Internet providers and search engine warehouses and databanks will be nationalized in many countries. 🔑
4. Other countries will offer data providers, search engine facilities and massive infrastructure facilities with a tax and data warehouse haven to carry on their activities.
5. The Internet will become a subversive underground of technical reactionaries as a counter-techno culture attempt to reclaim their lost freedom.

The Organizational Disruption

“These capitalists generally act harmoniously and in concert, to fleece the people.” - Abraham Lincoln

Knowledge Management and Business Intelligence Systems

The Internet offers a plethora of data in virtually endless permutations. Data continues to accelerate at monolithic rates ranging from the sublime to the surreal. Every possible self-promoted interest ranging from one to massive databanks of governments, institutions and organizations are providing data access. Inevitably, data needs to be filtered into information. Information to be useful needs context or meaning which is the essence of knowledge. The uniqueness of interpreting knowledge is wisdom. The data, information, knowledge, wisdom (DIKW) model is well-known.

J. Liedtka has indicated, over time, the vast majority of business and government processes have evolved around two basic variables of process control and outcome predictability (J. Liedtka, personal communication, April 6, 2009). Web 2.0 allows customers to be part of the design process, solution setting and post implementation feedback as never before. The proprietary tendency for Knowledge is breaking down as the customer is being drawn into an organization's core. Heavily latent process controls will challenge an organization's structural and cultural attributes.

The originator of the modern economic theorem, Adam Smith's invisible hand in the marketplace did work, if only by the good or bad judgements of the owner's business decisions. Inherently, organizations become rigid in structure, myopic in their vision and until the iconoclast's last breath is taken away. The mass market approach has been the most recent manifestation of Smith's vision.

In many respects, the customer has always been highly valued; however, not enough to alter the massive market mould. To oversimplify, whether a product or service was sold (or not) was based on the organization's vantage point. So long as there were enough customers, in the aggregate, the individual customer did not exert any real power commercially except at the local retail level.

The Internet has given the customer a voice. Web 2.0 bestows the individual with once incomprehensible economic and political power. Instantaneously, with nothing more than a few clicks, an individual separately or as a member of a 'community' organize and spread his or her message across the globe. Is it no wonder that 50% of the world's population will be connected to the Internet in a few years hence? People have something to say and they will be listened to and supported without traditional access, social or technical confinements.

James Surowiecki attributes the perspectives of diversity (Surowiecki, 2004) as powerful mechanisms to be leveraged from the Internet. Individuals and communities rebalance the DIKW model. Knowledge is no longer a proprietary sanctum for businesses or the state.

In Web 2.0's state of affairs, if Knowledge Management is to retain any value it must be shared. Inexorably, the controls and predictable stalwarts of past must give way to a loss of control and a greater ambiguity, as well as increasing agility, in dealing with the unknown. Organizations that fail to convert will be continuously on the defensive and will crumble rapidly under the weight of global competition.

Organizational Lock-Jaw

The compelling Internet innovation found in Web 2.0 is its bi-directional dialogue. Businesses that embrace the concept of consumer ownership participation by driving the design and evaluation of the products or services stand to gain immeasurably.

There have been many studies done on the value of information sharing and knowledge management, yet so many businesses seem to be lacking in this area despite the technologies available today. The dominant reason for the organizational barrier is cultural that is heavily influenced by organizational structure and performance management systems.

Organizational departments are often silos for people to work on their own agenda and performance management systems primarily to support a self-fulfilling competency based reward systems. This goes against a collaborative culture where there is no incentive particularly when people are more interested in climbing the corporate ladder, believe knowledge is power and are quite protective of their information.

Making a marketable shift towards a collaborative-based reward system will not be easy since it requires a collaborative leadership team who will focus on the structural issues and see the transformation as a priority and value for their organization.

Organizations need to cast off their cloistered view of Knowledge Management and accept a broader definition. By expanding the depth of the customer relationship, by leveraging Web 2.0 functionalities, businesses would be part of the customer's solution. It's a conversation.

Notwithstanding the significant role culture plays, governance and the level of risk that organizations are willing to assume are key factors in adopting this technology.

Web 2.0 technologies will be a key driver in the development of the semantic (iterative learning applications) web as internet systems harness the collective intelligence of the millions of users feeding it. The notion that internet systems will be able to intelligently interpret what it is we are looking for is not that far off. Business Intelligence systems will move into semantic technologies as they mature.

An example of a semantic web used today is where a semantic search engine allows users to find information from a concept from a given keyword. When a user searches for “France”, the system will suggest all instances whether it is contained in the label or the tag and display information from wikis, blogs and RSS feeds (Passant, 2008, ¶ 9).

Predictive Outcomes:

1. Business Intelligence Systems will evolve as an organization eco-system requiring continuous modelling adjustments between producers and consumers based on ideas with multi-dimensional personal and social modelling. 🔑
2. Current organizational structures and performance management systems will breakdown, causing a spiral of mismanagement failures and decay. 🔑
3. Wisdom will be bottom up generated and senior executives will have to support the innovation and inventors at the grassroots. 🔑
4. The real and direct influencers of companies will be the customers. Web 2.0 technologies allow a pathway to foster this relationship to a higher degree than previously available.
5. Unemployment shocks will rise as new Web 2.0 technologies surface and old skills are repealed.
6. Smaller organizations will be created, dissolve and reshape themselves continuously.

Profitability Models

The Web marketplace will challenge business models like never before as organizations offer free services. With the proliferation of information and open source, people will come to expect to have something of value for free. The challenge is in how to make money in offering free services.

It will be in knowing your customers and competition intimately. It will be in knowing what to give away for free and the value added that is chargeable. It will take creativity and agility in staying ahead of the game. The idea of having a one to three year strategy will make more sense as a one to three month strategy as competitive forces move at accelerating rates.

Similar to the Internet's creation, Open Source is a collaborative programming initiative started by individuals with no immediate organizational and economic links binding the participants. At its simplistic level, freeware or shareware are offered and supported by individuals. On the other end of the spectrum, large enterprise applications such as OTRS and Linux have strong and continuous roots from the Open Source communities that are extracted for commercial development.

A study performed by the Standish Group in 2008 found that free open source software is costing vendors \$60 billion annually. Of course, another way of looking at it is organizations are saving \$60 billion annually. The five year study clearly shows how pervasive Open Source Software is used in industry today. Customers are getting value not only in the cost savings but the flexibility in modifying the code to meet their requirements (Swartz, 2008, Free Open Source Software Is Costing Vendors \$60 Billion, ¶ 2).

The combination of the “free model” and power and influence of the masses is having a significant impact on many industries today. In particular, media in the form of newspapers, television, journalism, publishing, music and advertising are finding this social paradigm disruptive and forcing a change in the industry.

In using the Cloud Computing model with Software as a Service, it changes the dynamics of the cost model most organizations are used to incurring for their IT resources. IT resources move from being fixed cost, capital expenditures to variable pay-as-you-use services. This diminishes the need for long term capital expenditures. From a vendor perspective, their business model also changes to one of a more consistent revenue stream per customer based on subscription, pay per use service.

Predictive Outcomes:

1. Consumers will be economically and politically high-jacked by commercial and public institutions.. 🗝️
2. Conversely, reputation will overarch all organizational qualities. 🗝️
3. Brand will be the ‘store of value’ as the global whitewash commoditizes products and services. 🗝️
4. Large companies will merge or collapse as low market entries punish high cost producers.
5. Large capital investments over the long-term will be required to account for greater risk and financial premium due to compressing timelines.

Value Proposition

As organizations look at their business strategy and contemplate how they will position themselves in the global marketplace, they need to understand the significance of what Web 2.0 and Cloud Computing will bring them. “As the computing cloud grows, as it becomes ubiquitous, we will feed more intelligence into it” (Carr, 2008, p. 220).

The culmination of Cloud Computing with Web 2.0 is an important shift in the computing model as systems become much more dynamic and integrative. Web 2.0 is enabling Cloud Computing in becoming a powerful force for most industries. The services currently offered are Infrastructure, Platform and Software Services; this will continue to expand. Some of the most significant benefits are in the following areas:

- Agility in application development with platform frameworks
- Integration with Legacy Systems through SOA
- Elasticity and scalability of the Internet as a Computing Platform
- Competitive advantage in building knowledge management and business intelligence systems by combining disparate sources across the Cloud
- Release as “beta” – admittance to non-perfection, more trial and error products.

Agile methodologies have been gaining momentum and respect in the Software Development Lifecycle for many years now. Cloud Computing has an added benefit of offering Platform as a Service (PaaS) where the value is gained in offering software development services that accelerate the rate of speed at which applications can be developed. Widgets also play an important part in web development and web pages as snippets of code are readily available and information streamed from other sources.

The combination of SOA and Web 2.0 technologies is giving rise to a new class of applications that is allowing developers to create applications measured in days and could have a short term lifespan if desired. This in contrast to traditional applications developed over months and years with a significant cost investment representing a model where applications were developed with the intent of using them over a longer term period.

There are innovative systems using mashups such as a Police system that tracks illegal activity integrated with google maps to graphically see where and what kind of criminal activity is taking place in the city on a real time basis.

Predictive Outcomes:

1. Web 2.0 and Cloud Computing alliance will be the dominating computing model.
2. Collaboration, Knowledge Management and Business Intelligence systems will become a primary competitive advantage.
3. Application Development will become easier and performed by business or end users.

Cooperative Model and Talent

In the sky, there is no distinction of east and west; people create distinctions out of their own minds and then believe them to be true.

**-Buddha
(BrainyQuote, ¶ 8)**

There's a revolution taking place that will be disruptive in the way organizations conduct business. As more and more users participate in a number of different forums on the Internet, organizations will leverage their input in product design, service management improvements and future development in exceedingly greater ways. The creativity of the consumer will be used in all aspects of the product and service lifecycle.

Initially, the talent pool is vastly under capacity to deal with the demand curve as organizations which previously shunned creative and novel approaches and (more importantly) people are propelled into economic decline. Outsourcing as a means of corporate gain sharing will secure little benefit.

The contracting of talent will be the most likely outcome, if available. A strategic HR function will be critical in identifying and matching creative talent during an organizational metaphoric transition. The cultural transition from a control based to a creative based resource pool will necessitate Web 2.0 based technologies to facilitate and extend the collaborative environment.

The Ontario Provincial Government's successful use of Avatars (e.g. www.secondlife.com), are extending Web 2.0 collaborative techniques by creatively capturing Generation X and Y's attention by speaking to HR agents and role playing positions available (Ron Huxter, personal communication, May 10, 2009).

It may be a misplaced belief that Gen X and, particularly, Gen Y cohorts are more creative than previous generations. It would certainly be correct to infer that Gen Xs and Ys are more technically oriented than previous generations. This is a matter of consequential circumstances than innate skills inherited by technology. Deep reasoning comes from concentrated thought. Gen Y's knowledge flirting may prove to be more vulnerable than enlightened.

As we plunge into the expectant knowledge based economy, perhaps a similar revolutionary trend awaits us. Unlike previous generations, instant global communications, systems and resources are available instantly. Many organizations and social cultures will not have the luxury of time to adjust in a measured pace.

As organizations and societies remake themselves, there will be an inescapable talent gap of future skill sets. This can be particularly acute within organizational cultures that are individually centric. The bridging of the talent gap can be narrowed if collaborative efforts are embraced on the technical, organizational and cultural basis. They will need to leverage Web 2.0 based technologies in order to facilitate the transition.

Predictive Outcomes:

1. Organizations will be bought for their talent resource pool more so than their products and services. 🔑
2. Business partnerships and alliances will be more short-term in nature as organizations redefine their structures in search of talent. 🔑
3. Web 2.0 capabilities will extend deeper into the virtual world as creative talent hunting tools and business modelling proliferate. 🔑
4. Hitherto uneconomically viable countries that base their educational system on knowledge workers and talent will be able to avoid the historical poverty trend lines. 🔑
5. Organizational failures will be directly linked to the lack of talent and not so much to product and service offerings.

What Social Networking means for Users

You must be the change you want to see in the world.

**-Mahatma Gandhi
(Quotations by Author, ¶ 21)**

Web 2.0 provides Rich Internet Applications that enhance people's ability to collaborate and interact with one another. It is bringing our world much smaller and binds us closer together as personal lives are more transparent with Bloggers and communities almost as prolific as websites. A. Swidler (personal communication, April 22, 2009) indicated there are approximately 70 million blogs with 5 thousand per hour added daily.

Furthermore, Google is breaking down the barriers of language. Consider 80% of the web's content is in English and for 67% of the world's Internet users, English is not their primary language. They will come out with translation applications that allow users to communicate regardless of language (A. Swidler, personal communication, April 22, 2009).

Influence at one time was vastly seen through formal structured mediums such as media and is now quickly losing its impact as technology makes it so easy to collaborate in many ways. The "average" individual now has significant power and influence over many people taking into consideration his or her expert and personal power. People have more options available to them than ever before in connecting with groups with common interests. There are no boundaries as people communicate globally and at high rates of speed.

There's a transparency and openness on the Internet previously unobtainable. People want to be known and connected and they have many forums in which to distribute that expression. The Internet gives new meaning to the freedom of expression as people can upload photos and give their opinion about anyone and anything they choose. It's easy to find people through the use of tagging and social networks where people add their profiles. It's also easier to access the information they are looking for through technologies such as tagging, RSS and Atom feeds.

Consumerism is driving innovation in the technology area and forcing change to the business domain. The combination of social networking and mobile devices is radically changing the expectations people have regarding the use of information technology in business. The demographics also play an important part of this as Generation X and Y are very much accustomed to these technologies.

Predictive Outcomes:

1. Current generations will have greater physical and knowledge mobility. Their bounds to the nation state will be more tenuous than previous generations as international networks and contacts become extensive. 🗝️
2. Differing cultures and nations will become increasingly fused as the barriers to basic communications are diminished.
3. Gen Xs and Gen Ys will shape the destiny of the western cultural and political dominance.

There's No Such Thing as a Free Lunch

Everything you can imagine is real.

**-Pablo Picasso
(Quotation by Subject, ¶ 10)**

As noted previously, the impression among users of the Internet is that it is free. Although the access fees are a low barrier of entry, these fees do not absorb the innumerable applications found on the Internet, inclusive of social-networking communities. At some point, the human and capital investments on the Internet have to be financially supported.

What is relevant is a coalition of advertising and Web 2.0 technologies that are merging at a rapid rate, at the expense of traditional media. The customer profiling of a single individual or group ultimately means the value of target marketing is now reaching its optimum level – a customer target of 1.

Personal Service

There is a variety of information databases publicly available for exploration and sale. It is now possible to reconstruct a person's life interest by extracting multiple databases, applying social statistical analysis that transforms information into a personalized profile. This information package is 'sold' to companies and advertisers as an extremely focused consumption group.

Web 2.0 related technologies execute algorithms that cut across Internet service platforms to extract historical profiles of an individual or group of people. This type of cross pollination of databases, available on a grand scale, can be used to reconstruct an individual's interests, purchasing patterns, lifestyle and interests within a given cultural norm, to a finite degree.

The monetization of the individual is just beginning to be appreciated in business circles. Governments have been far slower to integrate their services and knowledge of Web 2.0 capabilities. The social networking communities provide a highly prized digital

fodder for economic and political gains. Humanity is replete with powerful technologies hoisted onto the shoulders of the elite guard. Web 2.0 will not go unnoticed.

For example, a “mash-up” of a Twitter type service and knowledge from a social networking forum are combined with a GPS located on the person’s Blackberry device. A vendor subscribes to “Client Approaches”. As the person approaches the business you are invited into its store for a special offering, customized to your style, height and size based on your Facebook profile at prices calculated to match your ‘special’ expectations.

A Presidential Vanguard

The Obama campaign of 2008 was the first presidential election to strategically deploy social networking as a campaign tactic. Facebook had 2.3 million Obama supporters to .6 million McCain supporters; My Space favoured Obama 833,161 friends to 217,811 for McCain; You Tube had approximately 1,792 Obama videos, 114,559 subscribers and 18.4 million channel views compared to McCain’s 329 related videos, 28,419 friends and 2.0 million channel views; and Twitter had 112,474 Obama followers in contrast to McCain’s 4,603 (M C Marketing Charts, 2008, Election 2008: Social Networking Roundup, ¶ 3-6).

It would be an overstatement to suggest the use of social networking penetration and tailored messaging during the election race was a deciding factor. What is important to note is that it is undeniable that all future electoral campaigns will begin to leverage the social networking franchise. Inevitably, the political data mining machinery will become a distinctive strategy for each side to unearth advantages in future elections.

What if our fashion acquaintance noted above was known to be a disenfranchised Republican voter and made his/her sentiments known on a social network pertaining to tattoos? Would he/she not be worthy of a personalized greeting from the President?

Predictive Outcomes:

1. Monetization of individuals and social groups will accelerate. 🔑
2. Once in a real or virtual store, your profile will dictate what you will be presented with based on statistical analysis of historical preferences, friends, social interests, physical attributes and lifestyle. Economic power of the retailer will be judged on genetic consumer coding. 🔑
3. Virtual campaigns will beget virtual candidates which will further alienate people from the political process. 🔑
4. Political hot buttons will be tailored to individual voters.
5. Seeming grassroots support or disinterest will be through calculated marketing campaigns to achieve the desired effect.
6. Techno Luddites will appear.

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Glossary

AJAX

Ajax (Asynchronous JavaScript and XML) is a method of building interactive applications for the Web that process user requests immediately. Ajax combines several programming tools including JavaScript, dynamic HTML (DHTML), Extensible Markup Language (XML), cascading style sheets (CSS), the Document Object Model (DOM), and the Microsoft object, XMLHttpRequest. Ajax allows content on Web pages to update immediately when a user performs an action, unlike an HTTP request, during which users must wait for a whole new page to load (SearchWinDevelopment.com Definitions, 2008).

Amygdala

An almond-shaped mass of gray matter in the front part of the temporal lobe of the cerebrum that is part of the limbic system and is involved in the processing and expression of emotions, especially anger and fear (The Free Dictionary, n.d.).

Blog

A Web site that contains online personal journal with reflections, comments and often hyperlinks provided by the writer (blog, 2009).

Cloud Computing

Cloud computing is a pay-per-use model for enabling available, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is comprised of five key characteristics, three delivery models, and four deployment models.

Key Characteristics:

On-demand self-service. A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed without requiring human interaction with each service's provider.

Ubiquitous network access. Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, laptops, and PDAs).

Location independent resource pooling. The provider's computing resources are pooled to serve all consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. The customer generally has no control or knowledge over the exact location of the provided resources. Examples of resources include storage, processing, memory, network bandwidth, and virtual machines.

Rapid elasticity. Capabilities can be rapidly and elastically provisioned to quickly scale up and be rapidly released to quickly scale down. To the consumer, the capabilities available for rent often appear to be infinite and can be purchased in any quantity at any time.

Pay per use. Capabilities are charged using a metered, fee-for-service, or advertising based billing model to promote optimization of resource use. Examples are measuring the storage, bandwidth, and computing resources consumed and charging for the number of active user accounts per month. Clouds within an organization accrue cost between business units and may or may not use actual currency.

Note: Cloud software takes full advantage of the cloud paradigm by being service oriented with a focus on statelessness, low coupling, modularity, and semantic interoperability.

Delivery Models:

Cloud Software as a Service (SaaS).

The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure and accessible from various client devices through a thin client interface such as a Web browser (e.g., web-based email). The consumer does not manage or control the underlying cloud infrastructure, network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

Cloud Platform as a Service (PaaS). The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created applications using programming languages and tools supported by the provider (e.g., java, python, .Net). The consumer does not manage or control the underlying cloud infrastructure, network, servers, operating systems, or storage, but the consumer has control over the deployed applications and possibly application hosting environment configurations.

Cloud Infrastructure as a Service (IaaS). The capability provided to the consumer is to rent processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed applications, and possibly select networking components (e.g., firewalls, load balancers).

Deployment Models:

Private cloud. The cloud infrastructure is owned or leased by a single organization and is operated solely for that organization.

Community cloud. The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns (e.g., mission, security requirements, policy, and compliance considerations).

Public cloud. The cloud infrastructure is owned by an organization selling cloud services to the general public or to a large industry group.

Hybrid cloud. The cloud infrastructure is a composition of two or more clouds (internal, community, or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting).

Each deployment model instance has one of two types: internal or external. Internal clouds reside within an organizations network security perimeter and external clouds reside outside the same perimeter (Draft NIST Working Definition of Cloud Computing, 2005).

Common Gateway Interface (CGI)

The common gateway interface (CGI) is a standard way for a Web server to pass a Web user's request to an application program and to receive data back to forward to the user. When the user requests a Web page (for example, by clicking on a highlighted word or entering a Web site address), the server sends back the requested page. However, when a user fills out a form on a Web page and sends it in, it usually needs to be processed by an application program. The Web server typically passes the form information to a small application program that processes the data and may send back a confirmation message. This method or convention for passing data back and forth between the server and the application is called the common gateway interface (CGI). It is part of the Web's Hypertext Transfer Protocol (HTTP) (SearchSOA.com Definitions, 2005).

Gen X

Generation Xers are people born between 1965 and 1976 – 1980, depending on the source. Gen Xers are independent, enjoy Informality, are entrepreneurial, and seek emotional maturity. They want to build a repertoire of skills and experiences they can take with them if they need to, and they want their career path laid out in front of them – or they'll walk (About.com: Human Resources, n.d.).

Gen Y

The millennials joining your workforce now are employees born between 1980 and 2000, or 1981 and 1999, depending on the author. Unlike the Gen-Xers and the Boomers, the Millennials have developed work characteristics and tendencies from doting parents, structured lives, and contact with diverse people. Millennials are used to working in teams and want to make friends with people at work. Millennials work well with diverse coworkers (About.com: Human Resources, n.d.).

Open Source

The distribution terms of open-source software must comply with the following criteria:

1. Free Redistribution

The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.

2. Source Code

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

3. Derived Works

The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.

4. Integrity of The Author's Source Code

The license may restrict source-code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

5. No Discrimination Against Persons or Groups

The license must not discriminate against any person or group of persons.

6. No Discrimination Against Fields of Endeavor

The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.

7. Distribution of License

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

8. License Must Not Be Specific to a Product

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

9. License Must Not Restrict Other Software

The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.

10. License Must Be Technology-Neutral

No provision of the license may be predicated on any individual technology or style of interface (The Open Source Definition, 2006).

Really Simple Syndication (RSS)

A metadata push technology, i.e., a technology that can identify changes in data and initiate a content push to the end user, without the user having to search it out and pull it from the site. The term RSS is an umbrella term variously used to describe a number of versions of several data Web feed formats specified in Extensible Markup Language (XML) and used for syndication of Web content. Those standards include Really Simple Syndication, Rich Site Summary, and RDF Site Summary (RSS, 2009).

Rich Internet Applications (RIA)

A rich Internet application (RIA) is a Web application designed to deliver the same features and functions normally associated with desktop applications. RIAs generally split the processing across the Internet/network divide by locating the user interface and related activity and capability on the client side, and the data manipulation and operation on the application server side (SearchSOA.com Definitions, 2007).

Service-oriented Architecture (SOA)

A service-oriented architecture (SOA) is the underlying structure supporting communications between services. SOA defines how two computing entities, such as programs, interact in such a way as to enable one entity to perform a unit of work on behalf of another entity. Service interactions are defined using a description language. Each interaction is self-contained and loosely coupled, so that each interaction is independent of any other interaction (SearchSOA.com Definitions, 2008).

Simple Object Access Protocol (SOAP)

Simple Object Access Protocol is a way for a program running in one kind of operating system (such as Windows 2000) to communicate with a program in the same or another kind of an operating system (such as Linux) by using the World Wide Web's Hypertext Transfer Protocol (HTTP) and its Extensible Markup Language (XML) as the mechanisms for information exchange. Since Web protocols are installed and available for use by all major operating system platforms, HTTP and XML provide an already at-hand solution to the problem of how programs running under different operating systems in a network can communicate with each other. SOAP specifies exactly how to encode an HTTP header and an XML file so that a program in one computer can call a program in another computer and pass it information. It also specifies how the called program can return a response (SearchSOA.com Definitions, 2008).

Wiki

Wiki is a piece of server software that allows users to freely create and edit Web page content using any Web browser. Wiki supports hyperlinks and has a simple text syntax for creating new pages and crosslinks between internal pages on the fly.

Wiki is unusual among group communication mechanisms in that it allows the organization of contributions to be edited in addition to the content itself.

Like many simple concepts, "open editing" has some profound and subtle effects on Wiki usage. Allowing everyday users to create and edit any page in a Web site is exciting in that it encourages democratic use of the Web and promotes content composition by nontechnical users (What is Wiki, 2002).

Web 2.0

Web 2.0 is the network as platform, spanning all connected devices. Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: 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, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation," and going beyond the page metaphor of Web 1.0 to deliver rich user experiences (O'Reilly Radar, 2005).

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