

Leveraging Online Outreach From Blogs and Beyond into the Cloud

Pfizer Global Allies Summit
Jay Byrne & Shae Johnson
May 2010

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All inquiries are welcomed at info@v-Fluence.com
(877) 835-8362

- ◇ Corporate Headquarters: general mail and deliveries to 4579 Laclede Ave #275, St. Louis, Missouri 63108
- ◇ Visiting our headquarters offices – 356 North Boyle, 2nd Floor, St. Louis, Missouri 63108
- ◇ Administrative, contracts and billing address: 7770 Regents Road, #113-576, San Diego, CA 92122

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v-Fluence provides major brands and organizations whose **business success is tied to critical consumer needs** the online analysis, counsel and execution support they require to be measurably successful.



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v-Fluence is a recognized leading online market analysis and Internet services provider in health, food, nutrition, environment, and related consumer spaces online. Our research services are used by the leading pharmaceutical, food, agriculture, energy and business services organizations for a range of issues management areas as well as by major advocacy, professional groups and trade associations. Global brands similarly rely on v-Fluence for online brand management, marketing and public affairs support. A range of corporations and trade associations also use v-Fluence to support reputation management and public policy issues online.

Healthcare



Our **dedicated health practice team** has provided research, counsel and online outreach support to a wide range of major pharmaceutical brands, academic organizations, consumer product companies and advocacy groups.

Areas of expertise include:

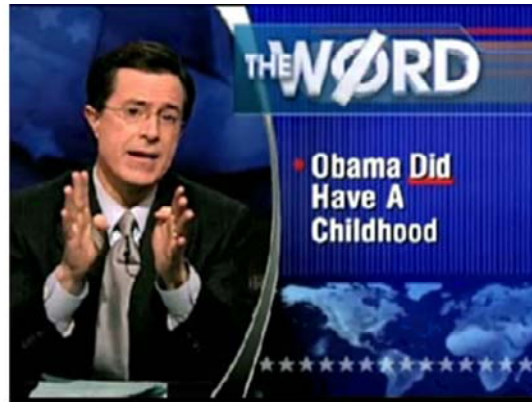
- Pharmaceutical brand and issues online monitoring (including adverse event reporting) and trends analysis
- Online CME and DTC rules and tactics
- Internet brand management, corporate reputation and product marketing
- Healthcare policy and regulatory issues
- Therapeutic areas including: respiratory ; mental health; diabetes & metabolic syndrome; oncology; cardiovascular
- Biotechnology/ Nanotechnology issues tracking
- Clinical trial online support
- Alliance development and online community building

Significant corporate brand management experience includes AstraZeneca, Pfizer, Johnson & Johnson and Novo Nordisk. Major pharmaceutical product brand experience include: CRESTOR; ARIMIDEX; SYMBICORT; ORTHO EVRA; and, SEROQUEL

Today's discussion

- Technology and healthcare today
 - Consumer behaviors and use
 - Basic definitions and tactical consideration
 - State of industry
- Emerging and impactful technologies
 - Now
 - Web 1.0
 - Web 2.0
 - Emerging term (now – one year to adoption)
 - Mobile
 - The Cloud
 - Medium term (two – three years)
 - Augmented Reality
 - Location-Based Services
 - Long term (three – five years)
 - Semantic Aware Applications
 - Smart Objects
 - Other influential technologies

Why? Old news versus new media



Source: www.comedycentral.com

Rationale: It starts online!

For issues affecting reputation, issues and product marketing, **the Internet is no longer an add-on:**

- Globally, more than **1 billion are online**; 245+ million in U.S.A.
- Journalists, analysts, government officials and other opinion leaders are **influenced by the Internet more than any other medium**
- Americans now view the Internet as their **most important and trusted source** for news and information consuming more online content than radio, print and television combined.

References:

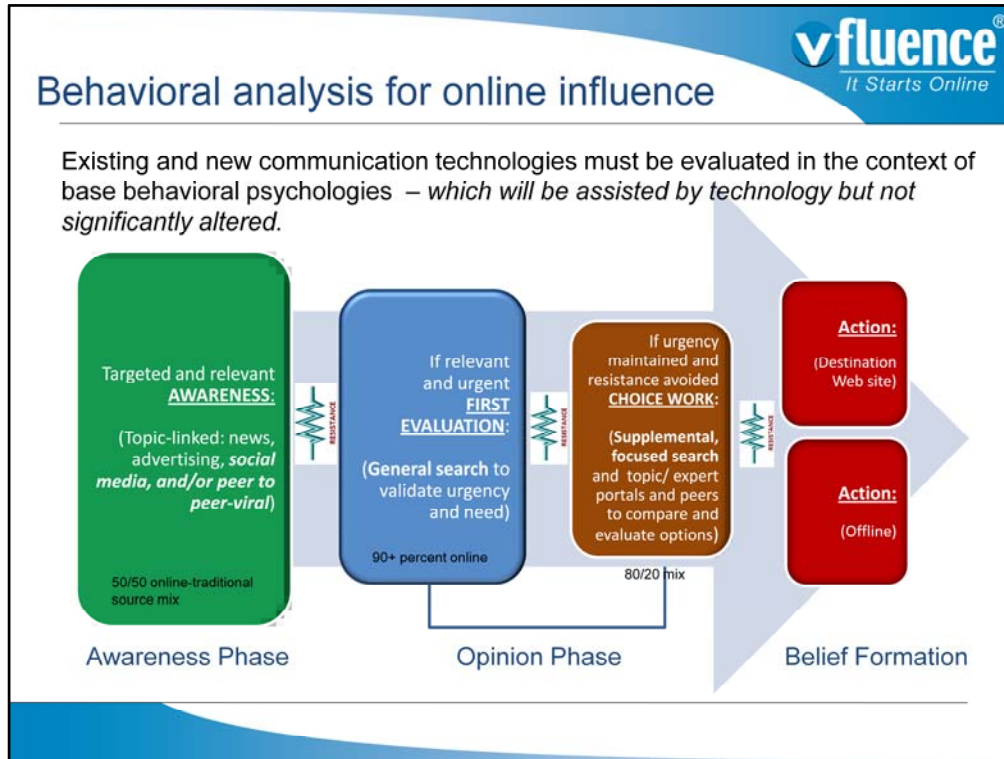
- www.clickz.com/stats
- Nielsen Net Ratings
- Harris Interactive
- Gallup Research
- Pew Internet & American Life Project

Audience behaviors are the clutch for technology use and adoption rates



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Adapted from the Daniel Yankelovich model of opinion to belief to action process (cite: <http://www.annenbergnorthwestern.edu/pubs/violence/viol5.htm>)

We overlay the psychological tenets of converting awareness to commitment with well researched online information gathering behaviors to evaluate and model online environments and associated technologies from the perspective of how related issues will be influenced.

Emerging technologies are enhancing, not replacing, these behaviors – in some cases shortening processes but rarely eliminate core components.

Simple keys to success

Integrate your traditional activities with online resources developed for:

- **Visibility**

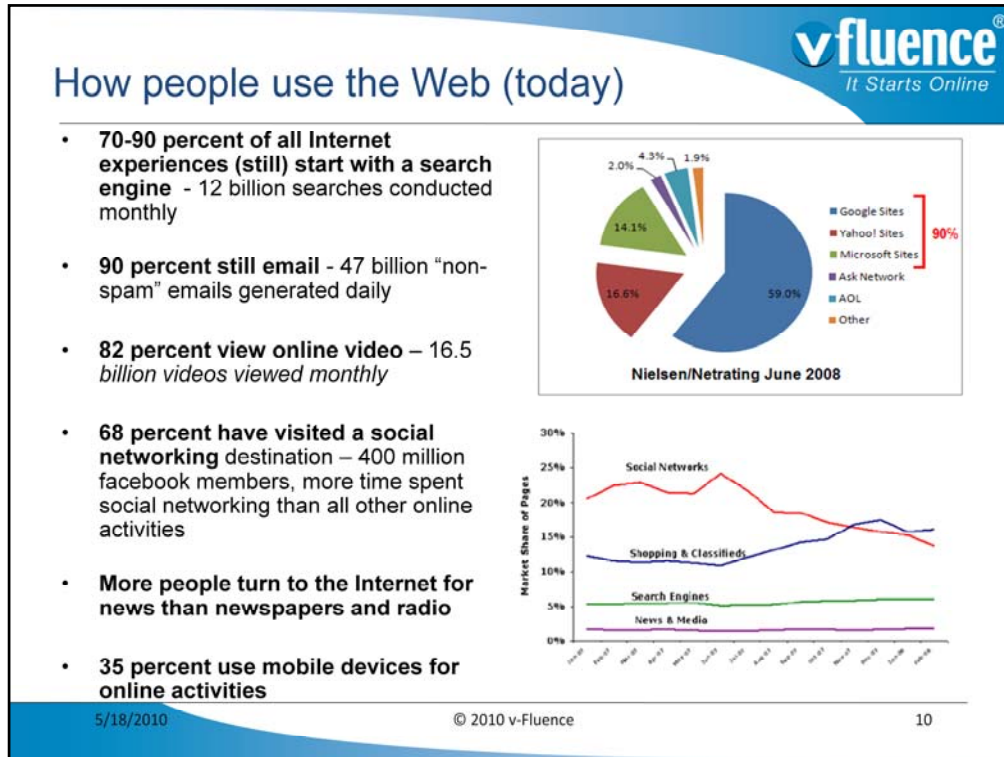
- Content availability and extension in **relevant awareness channels**
- Content presence in **relevant inquiry and opinion formation spaces**

- **Usability**

- **Behavioral** (audience) usability
- **Technical** usability for maximum extension of content and tools

- **Measurability**

- **Actionable** content and tools
- **Conversions** specific to goals



*In August 2009, there were 2.8 billion searches conducted monthly on YouTube (only 2.6 billion on Yahoo!)
Time spent and content consumed on social media sites exceeds traditional news pages by more than 8 to 1*

The places where people start, spend their time and eventually end online will determine how they form their beliefs about your brands, products or issues. People engage in path-finding online in identifiable manners based on types of activities and desired outcomes. v-Fluence research marries these well research behaviors within the specific environments that influence your brand, products and related issues.

Citations and notes:

Nielsen NetRating June 2008 http://www.nielsen-netratings.com/pr/pr_080718.pdf
www.comscore.com December 08 search data report (11.5 billion searches conducted)
http://www.pewinternet.org/pdfs/PIP_Generations_2010.pdf

While behaviors show people starting with search they are now spending more time on social network pages. News and mainstream media space "time spent" is now less than 3 percent, although "mainstream" news presence (placements) in search and social networks have influence – the degree of which can be determined by specific keyword, category and topic pathway research provided in v-Fluence i-Map benchmarking.

Various studies found at <http://www.clickz.com> show between 73 and 90 percent of all Internet homepages and user experiences start at a search engine (most research shows closer to 90 percent)

A Taxonomy of Web research: www.acm.org/sigs/sigir/forum/F2002/broder.pdf
<http://www.searchenginewatch.com>

The Deep Web: Surfacing Hidden Value: <http://www.press.umich.edu/jep/07-01/bergman.html>

Other sources:
<http://www.blogstreet.com/>
<http://www.perseus.com/>
<http://www.blogherald.com/>
<http://www.pewinternet.org/>

Awareness pathways and destinations

The #1 downstream destination for all social networking channels is still Google...

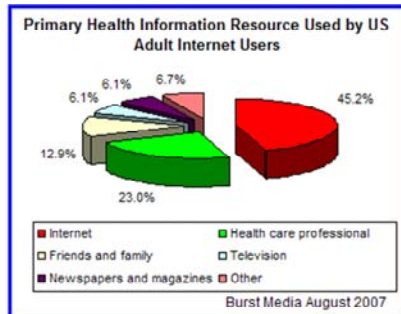


Mobile and "point of consumption" (POC) content will alter Google's current dominant influence

Why the Web matters for healthcare



- More people go online for health information **than any other individual source** (Burst Media)
- More go online for health information than seek advice from all health care professionals combined (AMA)
- Health information online carries more credibility than television, online info, **2nd only to physicians** (Gallup)

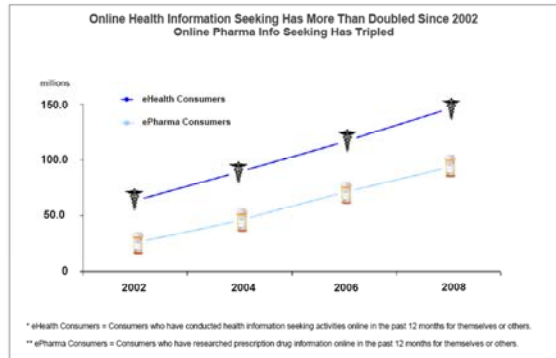


More people go online for health information than any other source

Full copies of these and related research reports available upon request to info@v-fluence.com

Healthcare behavior facts

- 80 percent of consumers go online for health-info
- 75 percent say the **Internet is their first choice** resource and **most trusted** source for health information (patients are six times more likely to go online than consult a healthcare professional)
- General health (54%) followed by therapeutic-specific (37%) **favorable over corporate** (4%) sites for information
- 75 percent of **physicians use the Web** weekly for job-related research
- 94 percent of physicians report having to address patient concerns based on information they found online



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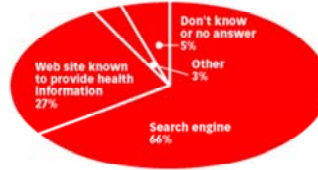
Various studies reveal:

- For health info, people go online first
- Health info online carries more weight
- Television, print and other traditional advertising diminished values – and when not reinforced online lead to lower ROI
- Value ROI online (with targeting) significantly higher than traditional advertising for conversions (brand awareness can be bolstered with traditional advertising, but customer conversions happen online)

Healthcare behavior online

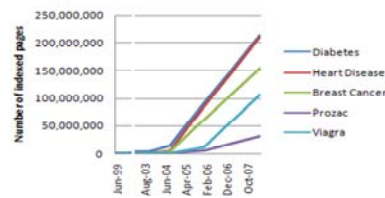
- When people make health inquiries 66 percent use major search engines (Google, Yahoo, MNS/Bing) and 27 percent use major Web health portals (Web MD, CBS Health, etc...)
- 21 percent use Wikipedia, 34 percent get health information from social media and 35 percent are influenced by what other consumers say about medication or treatments online
- The volume of health content available online has grown by more than 75,000 percent between 1999 and 2009

Method Used by US Internet Users to Begin an Online Health Information Search, August 2006 (% of respondents)



Note: n=1,990 ages 18+; numbers may not add up to 100% due to rounding
Source: Pew Internet & American Life Project, "Online Health Search 2006," October 2006
078140 www.emarketer.com

Sample Online Content Volume



The number of sites visited by online health consumers looking for disease-specific information has grown by more than 200% in the past two years.

Sources:

Pew Internet & American Life Project (Cybercondriacs)

Harris Interactive

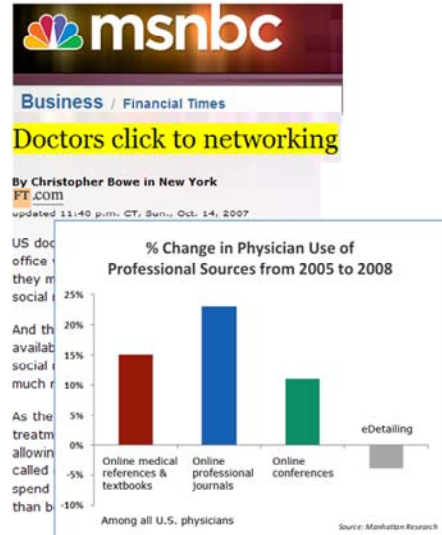
Manhattan Research

Compete.com

Hitwise.com

Key health opinion leaders online

- 77 percent of primary care physicians turn to the Web for medical information (SearchMedica.com)
- Between 70% and 90% of physicians use the internet on a daily basis (Pharmiweb.com)
- 45 percent of physicians use the Web specifically to research new treatment/product benefits (Maxwell Group)
- 70 percent of government health regulators report using the Internet to identify issues with new drug treatments and medical technologies (Journal of Medical Internet Research)



Sources:

http://www.pharmiweb.com/pressreleases/pressrel.asp?ROW_ID=1383

<http://www.jmir.org/2007/3/e20>

<http://www.jmir.org/2009/3/e22#ref3>

Dickerson S, Reinhart AM, Feeley TH, Bidani R, Rich E, Garg VK, et al. Patient INTERNET use for health information at three urban primary care clinics. J Am Med Inform Assoc 2004;11(6):499-504 /

Dihealthcare clients A, Griffith R, Ng J, Reinert S, Friedmann P, Moulton A. Patients' use of the INTERNET for medical information. J Gen Intern Med 2002;17(3):180-185.

Environment for health outreach

Before

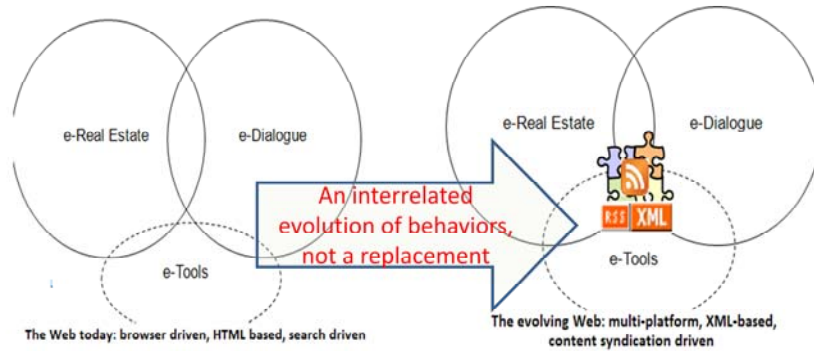
- TV, radio and print campaigns raised awareness of major conditions and increased demand for brand name drugs with access limited to relatively few commercial players by costs and defined regulatory guidelines
- CME and related outreach provided direct access to prescribers
- Treatment/product-related research controlled and access limited

Now

- New media and technologies dominate consumer health spaces with significantly broader base of influential participants
- Regulation has not kept pace: guidelines don't always easily transfer, are interpreted differently among players and aren't yet adequately or consistently enforced
- Pharmaceutical and medical device company access limited by policies and regulations
- Research sources and access opened

Definitions: Web 1.0 & 2.0

- Web 1.0 – the Web we know
- Web 2.0 – emerging new and social spaces



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While many today focus on the latest whiz-bang application, it's critical to acknowledge that people use the Internet with well researched and defined behaviors. The behaviors, which can significantly influence opinion and belief formation linked to actions, do not take place in the isolation of a single channel or tactic. Understanding how traditional Web 1.0 behaviors such as search and e-mail are being extended to emerging Web 2.0 activities such as blogging, social networking, multi-media sharing, etc... as specifically relates to your goals is the key to successful ROI.

Web 1.0: Web sites, news portals, search engines, email listservs (distribution lists), interactive online survey and calculator tools, etc...

Web 2.0: Blogs, social networks, micro-blogs (twitter), Multi-media indexes (YouTube), Widgets, etc...

Web 1.0 and 2.0 distinctions are primarily behavioral. Web 1.0 behavior is about proactively seeking and collecting, while 2.0 is about establishing your interests through profiles and behavior which then allows content to find you.



1.0 Search visibility still matters first



Social media influence over “blended” search results is growing... #1 downstream destination from all major social platforms remains Google...

Using the right “language” which matches consumer interests is key.

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One consistent and key online behavior is that people don't read content on the Web, they scan. Scanning is done with significant speed seeking out key signals (bold terms, common “signage” or recognizable images) from which they can continue their “path-finding” to satisfy their needs.

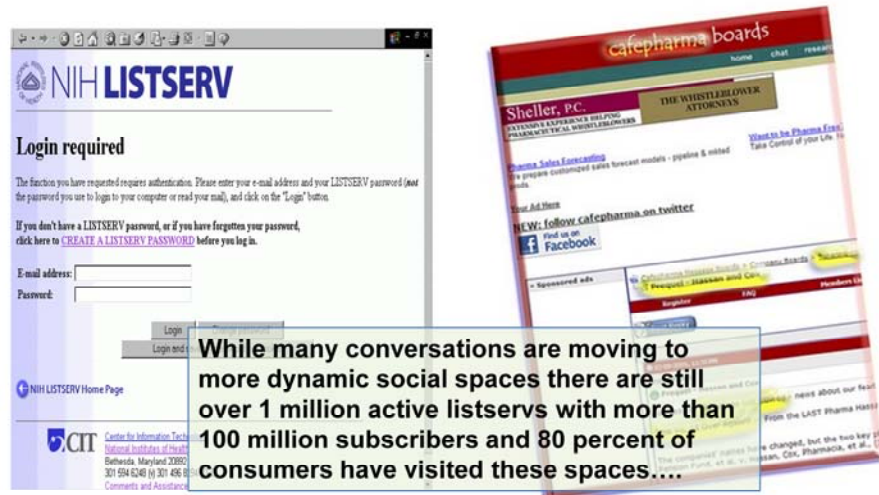
A key to success is optimizing content against relevant keywords with correspondingly relevant information to appear in these visible spaces. New challenges and opportunities are evolving with advertising placement options, Google Health and Bing Health priority placements, News results, image and video results placements on first page of keyword searches.

Other challenges: On March 26, 2009 DDMAC/ FDA sent letters to 14 major pharmaceutical manufacturers, stating that sponsored link advertisements for specific drugs were misleading due to the lack of risk information. (*Max PPC space is 12-15 words/ 75 characters*)

Research, started at Cornell University, using pupil tracking cameras linking eye movement to keystrokes shows this behavior. “Heat Maps” reveal how consumers “scan” versus read Web content. Three types of searches: informational (70%), navigational (15%), and transactional (15%) – for which informational searches rarely extend beyond the first page of search results.

Using terms the search engine report that consumers use (not terms marketers would like them to use) with their corresponding frequency of use we cull the relevant and visible results found on the various search engines and create a visibility index of relevant destinations weighted by the influence. Relevant broad

1.0 e-mail, listservs and discussion spaces



Peer to peer, viral and participatory (topic or other affiliation-specific) discussion groups continue to have significant influence online. While moving to new media social networking platforms, these avenues still exert significant influence. Over 2 trillion e-mail messages sent annually. Over 1 million active listservs with more than 100 million subscribers. 80 percent of consumers have visited an online discussion space and over 60 percent have posted comments.

These spaces generate awareness about emerging health issues such as new treatment options. This awareness leads to inquiries to evaluate, form opinions and take actions. Inquiries largely take place in search. The number one downstream destination from discussions spaces continues to be Google.

2.0 Social and consumer media



- Media Sharing (YouTube)
- Social Networks
 - Social Bookmarking
 - Social Cataloging/Citations
- Wikis
- Blogs
 - Micro blogs (Twitter)
- Virtual Worlds
- Mobile/ WAP
- Mash-Ups & Apps
 - QR, RFID, Near Field Communications
 - Geo-location

Definitions, descriptions and examples of the various social and consumer media platforms and tools, along with best-practice white papers and case studies available to all v-Fluence clients.



Online multimedia






- 75 percent people have viewed video online

Video results for **diabetes video**

 <p>Diabetes - What Is Diabetes - High Blood Sugar ... video.about.com</p>	 <p>Diabetes Video 4 min 11 sec - Jan 15, 2008 www.youtube.com</p>
 <p>Cade's Diabetes Video 3 min 47 sec - Sep 5, 2007 www.youtube.com</p>	

- 600 million hours of online video viewed monthly

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Video hosting services (e.g., YouTube) allow users to [upload video clips](#) to an [Internet](#) website. The video host will then store the video on its server, and show the individual different types of code to allow others to view this video. These videos can be “served” via embedded code to other destinations such as blogs or social network pages.

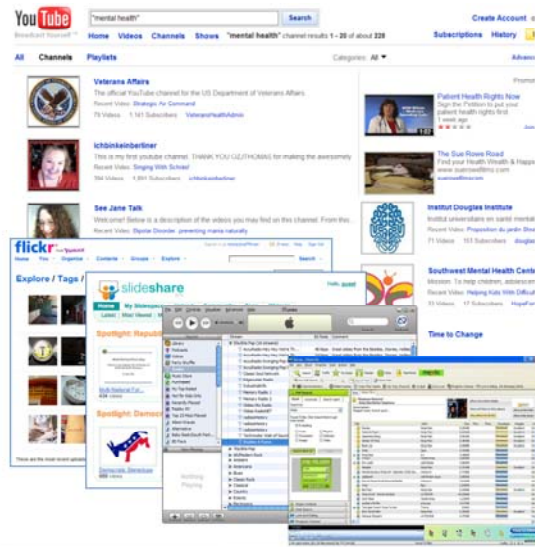
YouTube alone accounts for 45 percent of all online video today. In over 60 years of commercial broadcast the three top commercial networks (ABC, CBS and NBC) have produced 1.5 million hours of video – the same volume posted every six months to YouTube.

Video results bars are now being incorporated into general search on Google, Yahoo! and MSN/Bing when sufficient content coded for keywords is available.

v-Fluence Video Sharing White Paper and specific Video Sharing (YouTube, i-Tunes) Best Practices documents are available upon request

Media sharing/ mixing

- Sharing
- Aggregating
- Syndicating
- Amplifying
- Mixing



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Sharing, aggregating, syndicating, amplifying and mixing includes: video, audio, still images and various mixed format (e.g., PowerPoint) media. Tactics and sources vary from hosting platform to hosting platform. **Currently there are over 7,000 “health” topic channels on YouTube and over 1 million health treatment related videos collectively viewed more than 500 million times.**

YouTube digital ethnography defined: <http://mediatedcultures.net/youtube.htm>

For examples of mixing, see also: Numa-Numa:

<http://www.youtube.com/watch?v=60og9gwKh1o> and (over 35 million view – and subsequently remixed over 130,00 times) and

<http://djmatman.blogspot.com/2009/03/crazy-youtube-mixing.html>

Multimedia amplifying and mixing

Traditional multimedia content no longer “owned” or controlled

- Commenting
- Video responses
- Syndication/ Amplification
- Mixing

Consider this: 1.5 million hours of programming (including re-runs) by ABC, NBC and CBS in past 50 years - 1.5 million hours of unique programming posted every six months to YouTube



Free Hugs Campaign – example of commenting (97,000 comments) and video response (490).

Numa Numa (2004) by 18 year old Gary Brolsma – over 700 million views and 135,000 re-mix amplifications.

Social networking

- 65 percent of Web users visit social networking sites – 34 percent get health information
- Over 100 "SN" destinations with 200+ million members
 - Face Book (170,000,000)
 - MySpace (160,000,000)
 - LinkedIn (30,000,000)
 - SERMO (30,000*)
 - Second Life (5,000,000)
 - Care2.com (10,000,000)
- Over 1,000 healthcare related "communities" with more than 10 million members within facebook and LinkedIn alone



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Networked (*XML-enabled*) member destinations for topic-category content sharing. A **social network** is a [social structure](#) made of individuals (or organizations) called "nodes," which are tied (connected) by one or more specific types of interdependency, such as friendship, [kinship](#), financial exchange, dislike, [sexual relationships](#), or relationships of beliefs, knowledge or prestige. Social network analysis views [social relationships](#) in terms of [network theory](#) about *nodes* and *ties*. [Nodes](#) are the individual actors within the networks, and ties are the relationships between the actors. The resulting [graph](#)-based structures are often very [complex](#). There can be many kinds of ties between the nodes. Research in a number of academic fields has shown that social networks operate on many levels, from families up to the level of nations, and play a critical role in determining the way problems are solved, organizations are run, and the degree to which individuals succeed in achieving their goals. In its simplest form, a social network is a map of all of the relevant nodes between all the nodes being studied. The network can also be used to measure [social capital](#) -- the value that an individual gets from the social network. These concepts are often displayed in a social network diagram, where nodes are the points and ties are the lines.

See also Folksonomy - The [spontaneous cooperation](#) of a group of people to [organize information](#) into [categories](#); a [user-generated taxonomy](#). (Relates to sub-types of social networking, e.g., social bookmarking, social directories, social cataloging, etc...)

v-Fluence Social Networking White Paper and specific Social Network (facebook, LinkedIn) Best Practices documents are available upon request

Product and sponsored networks

- Patient networks (over 100)

- Depression Understood
- Real Mental Health
- Schizophrenia.com
- Depression Tribe
- Depression Forums

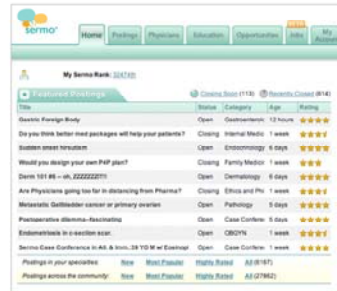
- Product sponsored (over 25)

- DepNet (Lundbeck)
- Heroes of Hope (Genetech)
- MS Gateway (Bayer)
- MS Watch (Teva)

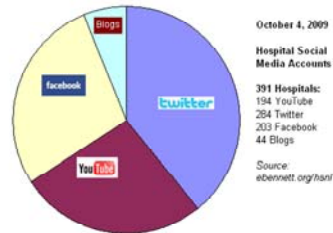


Professional group networks

- Physician and HCPs (over 30)
 - Sermo
 - Medscape Physicians Connect
 - Nurse Connect
- Hospitals, HMOs and Insurance groups (over 200)
 - Mayo Clinic
 - Wellbridge
 - Kaiser



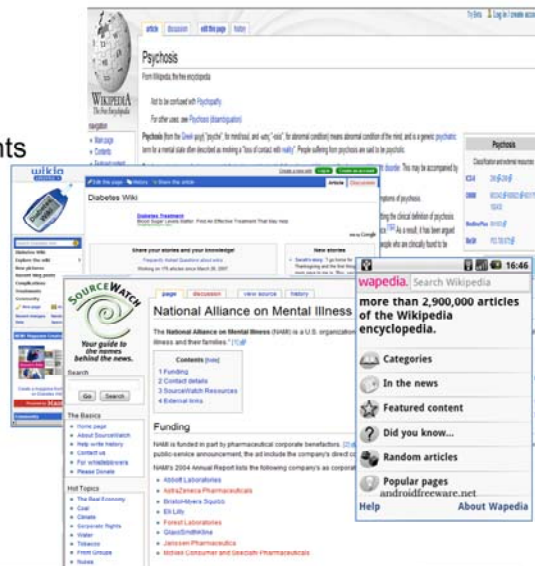
Title	Status	Category	Age	Rating
Systemic Foreign Body	Open	Dermatology	12 hours	★★★★
Do you think better food packages will help your patients?	Closing	Internal Meds	1 week	★★★★
Student stress reduction	Open	Endocrinology	5 days	★★★★
Would you design your own PMP plan?	Closing	Family Meds	1 week	★★★★
Deriv 101 #6 - uh, ZZZZZZZZZ	Open	Dermatology	6 days	★★★★
Are Physicians going too far in distancing from Pharma?	Closing	Ethics and Pro	1 week	★★★★
Metastatic Gallbladder cancer or primary ovarian	Open	Pathology	5 days	★★★★
Postoperative diabetes - Recombinant	Open	Case Conference	5 days	★★★★
Endometrial cancer in a resident's son	Open	OB/GYN	1 week	★★★★
Sermo Case Conference in AG & Gen. 30 YOB M w/ Endomet	Open	Case Conference	1 week	★★★★



Additional references: <http://www.doseofdigital.com/healthcare-pharma-social-media-wiki/>

Wikis

- Wikipedia
 - Organization profiles
 - Diseases and treatments
 - Other related lifestyle topics
- Other types of wikis growing in influence
 - Health wikis
 - Advocacy wikis
 - Mobile wikis



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A **wiki** is a [website](#) that uses [wiki software](#), allowing the easy creation and editing of any number of [interlinked Web pages](#), using a simplified [markup language](#) or a [WYSIWYG](#) text editor, within the browser. Wikis are often used to create [collaborative websites](#), to power community websites, for personal [note taking](#), in corporate [intranets](#), and in [knowledge management](#) systems. Most wikis serve a specific purpose, and off topic material is promptly removed by the user community. Such is the case of the collaborative encyclopedia [Wikipedia](#). In contrast, [open purpose wikis](#) accept all sorts of content without rigid rules as to how the content should be organized.

A sample list of health-related Wikis can be found at:


http://webtrends.about.com/od/wikilists/tp/list_of_health_wikis.htm a healthcare professional edited Wiki is <http://www.medpedia.com>

v-Fluence Wiki White Paper and Wikipedia Best Practices documents are available upon request.

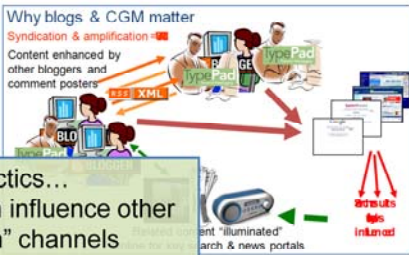


Blogs & consumer generated media

Blog elements & tactics




Why blogs & CGM matter

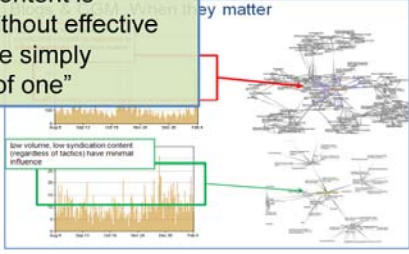


It's about the tactics...
 ... Tactics which influence other
 "belief formation" channels
 matter, simple content is
 secondary... without effective
 tactics, these are simply
 "conversations of one"

What blogs "influence"




When they matter



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A **blog** (a [contraction](#) of the term "**weblog**") is a type of [website](#), usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order. "Blog" can also be used as a verb, meaning *to maintain or add content to a blog*. Many blogs provide commentary or news on a particular subject; others function as more personal [online diaries](#). A typical blog combines text, images, and links to other blogs, [Web pages](#), and other media related to its topic. The ability for readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art ([artlog](#)), photographs ([photoblog](#)), sketches ([sketchblog](#)), videos ([vlog](#)), music ([MP3 blog](#)), and audio ([podcasting](#)). [Micro-blogging](#) is another type of blogging, featuring very short posts. Blog search engine [Technorati](#) tracks more than 110 million blogs.

Blog influence is largely linked to bloggers potential impact on search results and news portal content visibility. Very few people read or use blogs to form beliefs. However, well syndicated blogs utilizing effective blogging tactics (including keyword anchor text hyper-linking – Google Bombing) can influence what people find in search and online news – areas which can have a significant impact on your brand. Some blogs will achieve direct visibility in search and must be managed as you would any other media, commercial or advocacy influencer affecting your brand.



It Starts Online

Health bloggers (over 1,500)

Rank	Blog Title	Blog URL	Blog Type	Blog Description	Turn	Keyword	Blog Author	Blog Author's Title	Sample	Non-Google
1	New York Times Health	http://well.blogs.nytimes.com/	Author Blog	Healthy Living Blog	No	Yes	Tara F. Jacker-Jones	wellbeing@nytimes.com	No	Yes
2	VUSJ Health Blog	http://blogs.wjv.com/health/	Content Aggregator	CATO institute health blog	Yes	Yes	Jacob Goldstein	blog@cato.org	No	No
3	Fitsugar	http://fitsugar.com/	Author Blog	Diet blog	No	Yes	Multiple		No	Yes
4	Badscience	http://badscience.net/	Author Blog	Ves Dimov's Clinical Cas	Yes	Yes	Ben Goldacre, MD	clinicalcases@gmail.com	No	No
5	Diet Blog	http://diet.blog.com/	Author Blog	Diet blog	No	Yes	Multiple		No	Yes
6	The Healthcare Blog	http://thehealthcareblog.com/	Content Aggregator	Pharma marketing, speci	Yes	Yes	Matthew Holt	matthew@thehealthc	No	Yes
7	Respectful Insolence	http://scienceblogs.com/insolenc	Author Blog	The Editors of Effect Mea	Yes	Yes	"Orac" (anon)	phewer@gmail.com	No	No
8	Pharmalot	http://pharmalot.com/	Author Blog	Pharmaceutical News an	Yes	Yes	Ed Silverman	edsilverman@gmail.co	No	Yes
9	Mark's Daily Apple	http://madsdailyapple.com/	Author Blog	Daily health and fitness v	No	Yes	Mark Sisson	msisson@gmail.com	No	No
10	Cato-at-Liberty	http://cato-at-liberty.org/	Content Aggregator	The blog of the Cato Inst	Yes	Yes	Multiple (listed)	blog@cato.org	No	No
11	Sharp Brains	http://sharpbrains.com/blog	Content Aggregator	Research-based informa	No	Yes	Alvaro Fernandez	alvaro@creative-weblog	No	No
12	Denialism Blog	http://scienceblogs.com/denialis	Author Blog	Blog on denialism of hea	No	Yes	Mark Hochstetle	mark@denialism.com	No	Yes
13	A Blog Around the Clock	http://scienceblogs.com/dclock/	Content Aggregator	Science, politics, medicor	Yes	Yes	Columix (anon)	columix@gmail.com	No	Yes
14	Health Riot	http://ihealthriot.net/	Author Blog	Public library of science	Yes	Yes	Sara Oat	columix@gmail.com	No	Yes
15	Running a Hospital	http://runningahospital.blogspot.c	Author Blog	A blog started by a CEO ch	No	Yes	Paul Levy		No	No
16	Junifood Science	http://junifoodscience.blogspot.c	Author Blog	Nutrition blog	No	Yes	Sandy Szwarc		No	No
17	Effect Measure	http://scienceblogs.com/efectme	Author Blog	A forum for progressive p	Yes	Yes	Revere (anon) "the editors"		No	Yes
18	Medagadget	http://medagadget.com/	Content Aggregator	Publisher of Pharma Mar	Yes	Yes	Multiple (listed)		No	Yes
19	Diabetes Mine	http://diabetesmine.com	Content Aggregator	Our Bodies Ourselves (O	Yes	Yes	Ami Tanden	christine@ourbodies.net	No	No
20	Awful Plastic Surgery	http://awfulplasticsurgery.com/	Author Blog	Discussion of public hea	No	Yes	Bart Jans	bartjans@tbi.org	Yes	Yes
21	nHS Blog	http://nhsblogdoc.blogspot.com/	Content Aggregator	American Journal of bioe	No	Yes	John Crippen, MD (UK)		No	No
22	In the Pipeline	http://thepipeline.cocarte.com/	Author Blog	A blog on the future of the	No	Yes	Derek Lowe	derek.lowe@gmail.c	No	No
23	About Pediatrics	http://pediatrics.about.com/	Content Aggregator	Pediatrics blog	No	Yes	Vincent Iannelli, MD		No	Yes
24	Polite Dissent	http://ipolitedissent.com/	Author Blog	Comics, medicine, televi	No	Yes	Scott	scott@politedissent.c	No	No
25	Autism Vox	http://autismvox.com/	Author Blog	Mother of a child with Aut	No	Yes	Kristina Chew, PhD	kristina@bmedia.co	Yes	Yes
26	Triage	http://triageblogs.chicagotribune.c	Author Blog	Healthcare blog	No	No	Judith Graham	jgraham@tribune.co	No	Yes
27	Science Based Medic	http://www.sciencebasedmedic	Author Blog	Issues and controversies	No	Yes	Multiple	Shovelita@thensess.c	No	No
28	KevinMD	http://kevinmd.com/blog/	Content Aggregator	Comics, medicine, politic	Yes	Yes	Kevin Pho, MD	scott@politedissent.c	No	No
29	Brainblogger	http://brainblogger.com/	Unique Content Blo	Topics from multidimension	Yes	Yes	Shaheen Lakhani		No	No
30	Psych Central	http://psychcentral.com/	Author Blog	Learn, share, grow	No	No	Kim	ischwah@tnt.net	No	Yes
31	Emergiblog	http://emergiblog.com/	Author Blog	Blog of retired general su	No	Yes	Kim	ischwah@tnt.net	No	No
32	Dr. Sandy	http://dr.sandy.blogspot.com/	Author Blog	Shining a psychological r	No	Yes	Pat Sandy	patasand@ast.com	No	No
33	ScienceRoll	http://scienceroll.com/	Content Aggregator	A medical student's jour	Yes	Yes	Benjamin Mesko	benm@ast.com	No	No
34	LA Times Booster Sh	http://latimesblogs.latimes.com	Author Blog	General Health blog	No	Yes	Multiple	tami.dennis@latimes	No	Yes
35	Pure Pedantry	http://scienceblogs.com/pureped	Author Blog	General health blog	No	Yes	Jaime Young	jamesyoung@gmail.c	No	Yes
36	Health Affairs Blog	http://ihealthaffairs.org/blog/	Content Aggregator	The policy journal of the F	No	Yes	Multiple (listed)		No	No
37	UBS Academic Search	http://wellblogs.elsevier.com	Author Blog	To advocate for librarians	Yes	Yes	Victor Castilla		No	No

Health Blogs

Health Discussion Groups

Health Listservs & eNewsletters

Health Portals

Social Networks

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As with search, health topics are among the most frequently posted in the blogosphere (mental health and cancer being the most frequent therapeutic-specific topics). v-Fluence databases include over 1,500 identified and ranked health-topic dedicated blogs and other social/consumer influencer channels online: discussion groups, listservs, portals, social networks, multi-media channels, etc...

1,500 health blogs

750 health discussion boards

1,000 + health listservs

200 + health portals



A virtual world enables users or players to interact in a computer-based simulated environment populated by avatars (In online gaming, a MUD (Multi-User Dungeon), pronounced /mʌd/, is a multi-user real-time virtual world). Distinction between “real” and “virtual” is getting fuzzier. “Hyper-reality” (concept of media being more real than real) has been explored by: GeoSim www.geosimphilly.com and www.metaverse-labs.com.

Many groups are researching and using virtual worlds to address areas health topics (e.g. diabetes), CME and remote diagnosis.

Healthcare examples:

HealthCyberMap.org (and “SLURLs – second life URLs).

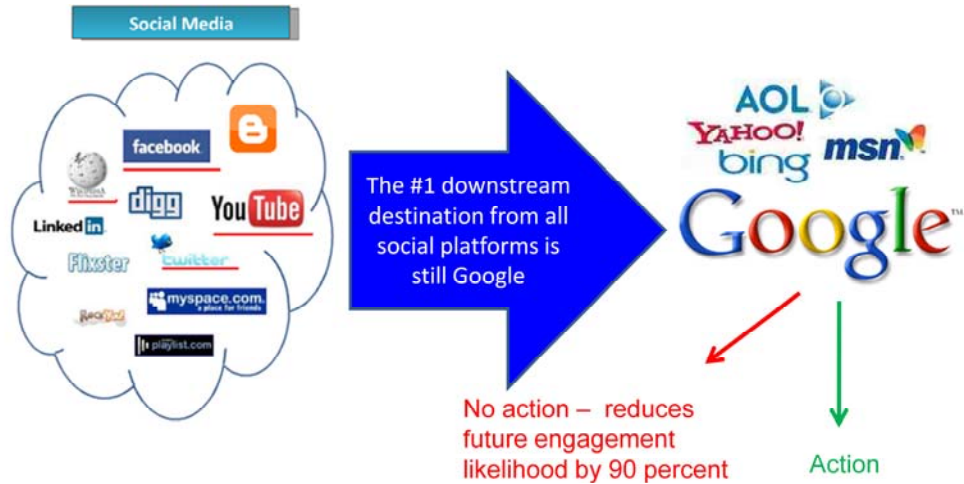
Second Health in SL: <http://uk.youtube.com/watch?v=Qtn5wcDA>)

Second Life has Medical and Consumer Health Libraries and “Healthinfo Island”

Twinity.com is another virtual world example www.sloodle.com (SL + Moodle) offer ability to gain “clinical” skills, attend live events remotely, American Cancer Society raises funds in SL. Modeling Health Care Logistics in Virtual Worlds: <http://vw.ddns.uark.edu>

Health Education in Second Life video: <http://uk.youtube.com/watch?v=iBj0-mzrAY4> (Cigna Health Ed)

Awareness leads to 1.0 research/ action



What's next?

- Web 3.0
 - Ubiquitous
 - Integrated
 - Free from desktops and devices
 - *The technologies required for this all largely exist today and require minimal infrastructure investments to initiate. Consumer behaviors (willingness) will define adoption timelines....*



Microsoft Health Vision Video

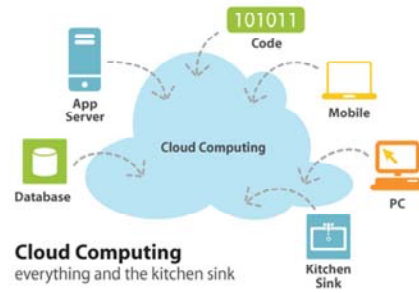
<http://www.microsoft.com/video/en/us/details/b112da1c-c918-41ee-bb45-d6a553496168>

Emerging Technologies - Now

Mobile



Cloud Computing



Mobile facts

- 58 percent of U.S. consumers own Web-access capable mobile phones
- 10 percent of Web-enabled phone users have made a mobile purchase; 16 percent compare prices; 16 percent research products
- There are 4.1 billion cell phone users (2008) globally
- 140 million US consumers will be using mobile broadband by 2013 – **by 2020 the majority of online content will be consumed on mobile devices**

U.S. Mobile Activity - November 2008	Audience	Reach	Growth, %
Sent/received photos or videos	63,736,000	27.7	5.6
Received SMS ads	54,922,000	23.9	8.2
Accessed news/info via browser	41,894,000	18.2	9.7
Used email	38,370,000	16.7	6.3
Listened to music	21,006,000	9.1	8.5
Accessed social networking sites	20,668,000	9	14.2
Played/downloaded game	20,468,000	8.9	6.1
Purchased ringtones	19,556,000	8.5	-1.1
Accessed/downloaded application	18,337,000	8	15.8
Watched Video	7,523,000	3.3	5.6

Top mobile sites	Top PC sites
Mobile Operator Sites	Google Sites
Google Sites	Microsoft Sites
Facebook.com	Yahoo! Sites
Yahoo! Sites	Facebook.com
BBC Sites	EBay
Apple Inc. Sites	BBC Sites
Microsoft Sites	AOL (inc. Bebo)
Sony Online (inc. Sony Ericsson)	Amazon Sites
Nokia	Ask Network
AOL (inc. Bebo)	Foundation

By 2020 majority of online content will be consumed via mobile devices. Apple's iPhone represented 69 percent of U.S. smartphone traffic across mobile advertising marketplace AdMob's network in May 2009, up from 59 percent the previous month. According to AdMob, smartphones now account for 37.3 percent of total U.S. traffic-- Research In Motion's BlackBerry devices generated 13 percent of AdMob smartphone traffic last month, followed by devices from HTC (10 percent) and Palm (3 percent). In all, AdMob reached 15.1 million unique users on iPhone and iPod touch devices on 2,309 applications in its network in May, with the average iPhone user in AdMob's network accessing four applications during that time. AdMob adds that five days after the [launch](#) of the iPhone OS 3.0, devices running the update represented 44 percent of iPhone ad requests, while only 1 percent of requests came from iPod touch devices running the revamped OS.

By 2013, there will be over 140 million U.S. consumers paying for mobile broadband, which will extend video, communication, networking, and support services to a range of devices. Parks Associates [forecasts](#) 4.5 bln mobile phone users worldwide by 2013, with many people using these devices as gateways for entertainment services, community information, and social networking.

<http://www.itfacts.biz/us-mobile-internet-activity-in-november-2008/12556>



Mobile/ WAP influencing healthcare

- Over 10 million Americans use cell phones or smart devices to look up health information
- Add-ons like: Quick Response (QR) & Bar Code mobile readers, Geo-location and other tools (e.g., Cellscope) enhance “point of consumption” decision making
- Device targeted – point of consumption content
 - BMI risk calculators
 - Physician’s assistant app
 - Blood pressure cuff app
 - Glucose monitoring

iPhone Apps tagged with health



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Currently over 1,000 iPhone health-related applications which have been downloaded by more than 1 million consumers. See also: <http://www.v-fluence.com/blog/457/turning-mobile-consumers-into-food-safety-inspectors-clinical-diagnostics-and-more>

Parents could soon be using their iPhones to monitor a child's blood glucose levels throughout the day, whether that child is at school or at the beach. Of course, there are already dozens of iPhone apps available for [tracking exercise, diet, and blood pressure](#)—where you input information yourself. But new tools, like one unveiled in March (2009) by J&J’s LifeScan, will monitor health information remotely, then share it with family members or doctors.

And

<http://mobihealthnews.com/474/fda-may-regulate-iphone-health-apps/> (FDA to regulate iPhone apps as medical devices)

<http://www.youtube.com/watch?v=OcUYo5Erxt0>

Cloud Computing

- Access to the “deep web” (600 – 6,000 times larger than current “surface” indexed by Google) expanding data availability exponentially
- Remote programs and shared resources enables enhanced computing and processing capabilities
- Removes “device” limitations and lowers pipeline (data stream) requirements



Cloud computing is a new generation of computing that utilizes distant servers for data storage and management, allowing the device to use smaller and more efficient chips that consume less energy than standard computers. Cloud computing services often provide common [business applications](#) online that are accessed from a [web browser](#), while the [software](#) and [data](#) are stored on the [servers](#).

Cloud computing healthcare

- **PHI:** Today, people who manage their personal health information (30 percent of all consumers) one-quarter do so via the Web or computer desktop applications – 40 million by 2010
- **Research:** Increased access and lower costs via virtual data analysis clusters will influence and expand drug safety, efficacy and related inputs
- **Existing Data Access:** governments, universities and other sources are opening data sources via APIs to product (e.g., “app”) developers and the public (NIH currently offers over 50 “catalogues” of information)



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Chilmark research – consumer personal health information data.

<http://chilmarkresearch.com/2009/01/12/cloud-computing-in-healthcare-a-presentation/>

Health research cost example:

<http://www.sciencedaily.com/releases/2009/04/090410100940.htm>

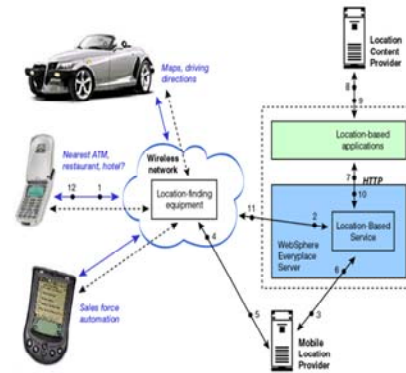
The NIH, FDA and other US government agencies are currently soliciting public comments on data formatting and related elements which will enable broader public access via <http://www.Data.gov>.

Emerging Technologies - Soon

Augmented Reality



Location Based Services



Augmented Reality

- Virtual, computer-generated imagery which creates an enhanced (mixed) reality.
- Currently over 100 augmented reality applications available for the iPhone – largely geographic in nature.



Augmented reality (AR) is a term for a live direct or indirect view of a physical real-world environment whose elements are merged with (or *augmented* by) virtual computer-generated imagery - creating a mixed reality. The augmentation is conventionally in real-time and in semantic context with environmental elements, like for example sports scores on TV during a match. With the help of advanced AR technology (e.g. adding computer vision and object recognition) the information about the surrounding real world of the user becomes interactive and digitally usable. Artificial information about the environment and the objects in it can be stored and retrieved as an information layer on top of the real world view. The term augmented reality is believed to have been coined in 1990 by Thomas Caudell, an employee of Boeing at the time. Augmented reality research explores the application of computer-generated imagery in live-video streams as a way to expand the real-world. Advanced research includes use of head-mounted displays and virtual retinal displays for visualization purposes, and construction of controlled environments containing any number of sensors and actuators.

Additional information: <http://www.augmented.org>

Augmented Reality Healthcare

- Visualization and reality interfaces for medical procedures and diagnoses for HCPs
- Consumer aids via mobile devices and smart appliances



Over 200 augmented reality-related published research papers in health journals.

Location Based Services

- GPS and mobile device enabled content “mash ups”
- Enabled by GPS chips or local range technologies (Bluetooth, RFID, Wi-Fi, etc...)



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A **location-based service** (LBS) is an information and entertainment service, accessible with [mobile devices](#) through the [mobile network](#) and utilizing the ability to make use of the geographical position of the mobile device. LBS services can be used in a variety of contexts, such as health, work, personal life, etc... LBS services include services to identify a location of a person or object, such as discovering the nearest banking cash machine or the whereabouts of a friend or employee. LBS services include parcel tracking and [vehicle tracking](#) services. LBS can include [mobile commerce](#) when taking the form of coupons or advertising directed at customers based on their current location. They include personalized weather services and even location-based games. They are an example of [telecommunication convergence](#).

Good source for latest LBS health info: <http://www.ij-healthgeographics.com/>

Location Bases Services Healthcare

- Local drugs/drug trade names and prices (in local currency)
- Fraud detection, recalls and digital rights management
- Local disease rates and information maps and guidelines
- Targeted health education
- Addresses of local healthcare facilities
- Local health news (alerts)
- Local health risks and travelers' health information



For more information: <http://healthcybermap.semanticweb.org/> and
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC149402/>

Also: International Journal of Health Geography
<http://www.ij-healthgeographics.com/>



Emerging Technologies – Down the road

Semantic Aware Apps



Smart Objects



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Early semantic application examples:

Pandora (March 2010) had 48 million users who listened to an average 11.8 hours per month

Netflix (Jan 2010) has 14 million subscribers now downloading more content than consuming via mailed disks.

Semantic aware applications allow meaning to be inferred from content and context. The promise of these semantic-aware applications is to help us see connections that already exist, but that are invisible to current search algorithms because they are embedded in the context of the information on the web.

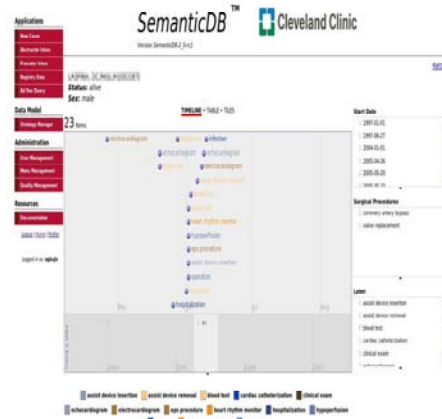
http://horizon.nmc.org/wiki/Semantic-Aware_Apps

<http://www.trueknowledge.com/>

Smart objects are the link between the virtual world and the real. A smart object “knows” about itself — where and how it was made, what it is for, who owns it and how they use it, what other objects in the world are like it — and about its environment. Smart objects can report on their exact location and current state (full or empty, new or depleted, recently used or not). Whatever the technology that embeds the capacity for attaching information to an object — and there are many — the result is a connection between a physical object and a rich store of contextual information. Think of doing a web search that reveals not pages of content, but the location, description, and context of actual things in the real world.

Semantic Aware Applications

- User (e.g., patient) specific data compiled, organized and delivered based on specific profile and available meta data
- Portals aggregate content facilitate highly customized research
- Topical search integrates media (video and image) with text results
- The Cleveland Clinic is using semantic web concepts to search patient data to improve care



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http://horizon.nmc.org/wiki/Semantic-Aware_Apps

<http://www.w3.org/2001/sw/sweo/public/UseCases/ClevelandClinic/>

<http://www.trueknowledge.com/>

Smart Objects

- Physical objects embedded with unique identification technology
- RFID, QR, smartcards, smart-chips
- Object communicate with readers or with each other
- University of Arkansas researchers have created a simulated environment in Second Life to test the practical and social implications of tagging and tracking patients, hospital staff, supplies, and locations
- Purdue testing micro wireless devices implanted in tumors to direct therapy



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<http://wp.nmc.org/horizon2009/chapters/smart-objects/>

<http://www.sciencedaily.com/releases/2008/04/080408120106.htm>


<http://www.rfidjournal.com/article/articleview/4326/2/1/>



Other technologies to consider

Examples of new technologies unlikely to change behavior but strong opportunity to enhance them.

- Flexible Screens
- Video tele-presence
- Data visualization technologies

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Flexible screens (will enhance the Internet of Things/Smart objects):
<http://gizmodo.com/5273364/flexible-oled-screens-are-really-coming-now>

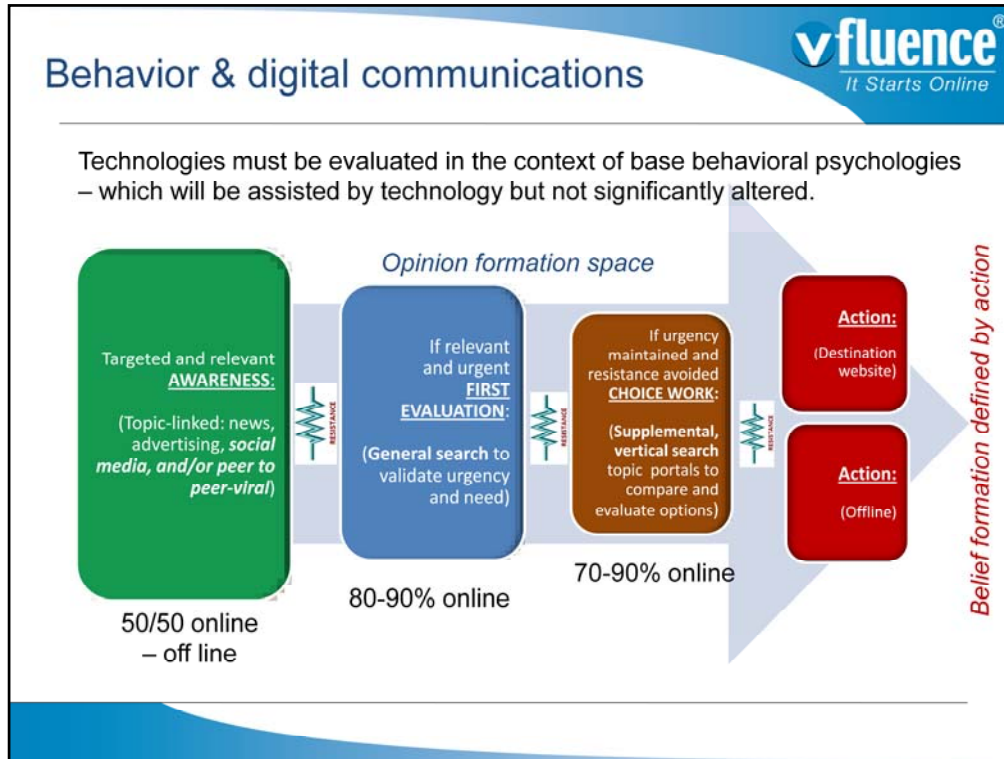
Telepresence (will accelerate augmented reality into the home via VOIP and related applications) : <http://en.wikipedia.org/wiki/Telepresence> and
http://www.cisco.com/en/US/netsol/ns669/networking_solutions_solution_segment_home.html

Data visualization (will be used to enhance and access cloud computing content):
<http://www.smashingmagazine.com/2010/09/11/25-useful-data-visualization-and-infographics-resources/>

Social engagement ROI opportunities now

1. Peer-to-peer (viral, e-mail)
 - Up to 90 percent CTRs
 - Highest credibility
 - Strongest ROI potential
 - Facilitated with online tools
2. Social networking direct earned
 - High credibility, moderate CTRs
 - Peer profile/ update driven
 - facebook, MySpace, LinkedIn
 - Facilitated by client or partner social profile content and tools
3. Social networking indirect earned
 - High audience relevance
 - Organization or topic group driven
 - Expanded channels – Care2, Sermo
 - Client or partner profile content/ tools
4. Media sharing and mixing
 - Broader audiences, limited participants
 - Strong viral and engagement opportunities
 - Extendable for amplification into social networks and other Web 2.0 channels (blogs)
5. Mobile tools
 - High growth opportunities (early mover advantages)
 - SMS/MMS content
 - QR code integration
 - Smart phone apps
6. Targeted influencer outreach
 - Discussion group leaders/ participants
 - Bloggers
 - Micro-bloggers (Twitter)

Social media engagement is, by definition, “peer” relationship driven. Resources need to be developed which “arm” people with both information and tools which support (belief defining) actions linked to information that they can share... If an organization cannot easily transform and define itself into a “peer” role, it’s influence must be developed as a support role for peers.



Adapted from the Daniel Yankelovich model of opinion to belief to action process (cite: <http://www.annenberg.northwestern.edu/pubs/violence/viol5.htm>)

We overlay the psychological tenets of converting awareness to commitment with well researched online information gathering behaviors to evaluate and model online environments and associated technologies from the perspective of how related issues will be influenced.

Emerging technologies are enhancing, not replacing, these behaviors – in some cases shortening processes but rarely eliminated core components.

Simple considerations for success

Integrate your traditional activities with online resources developed for:

- **Visibility**

- Content availability and extension in **relevant awareness channels**
- Content presence in **relevant inquiry and opinion formation** spaces

- **Usability**

- **Behavioral** (audience) usability
- **Technical** usability for maximum extension of content and tools

- **Measurability – beyond HITS**

- **Actionable** content and tools
- **Conversions** specific to goals

Discussion & Thank You

For more information:

jay.byrne@v-Fluence.com

chris.jones@v-Fluence.com (therapeutic areas)

shae.johnson@v-Fluence.com (policy & issues)

www.v-Fluence.com

(877) 835-8362

All inquiries are welcomed at info@v-Fluence.com
(877) 835-8362

- ◇ Corporate Headquarters: general mail and deliveries to 4579 Laclede Ave #275, St. Louis, Missouri 63108
- ◇ Visiting our headquarters offices – 356 North Boyle, 2nd Floor, St. Louis, Missouri 63108
- ◇ Administrative, contracts and billing address: 7770 Regents Road, #113-576, San Diego, CA 92122

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