Capgemini Consulting

Health 2.0: A Game-changer in the Health Care Industry

With the growth of online technology and mobile innovations, health information has never been more accessible. Given the constraints of working in a tightly regulated environment, life sciences companies (pharma, biotech and medical device) have moved slowly to adopt Health 2.0, treating it as a minor component of their commercial strategies and marketing plans.

In contrast, patients, physicians and other key health care players have readily adopted Health 2.0. This decreases the level of control that life sciences companies have over the way their customers obtain product information and marketing messages. Despite the potential risk associated, these companies need to ask themselves, "Can we afford to ignore Health 2.0?".

Definition of Health 2.0: Web 2.0-based online networks and mobile-enabled services where patients, health professionals, biomedical researchers, life sciences companies, payers and government can interact globally (see Figure 1).

Capgemini Consulting recommends that the life sciences industry embrace Health 2.0 as a way to gain valuable market insights and heighten engagement with their customers. The evolution is occurring now—it's time to play or be played.

The Rise of Health 2.0

Adoption of Health 2.0 by patients and physicians has continued to grow significantly across all age groups. The number of users looking for prescription drug information online grew from 25 million in 2002 to 100 million in 2008. The Internet is now the top source of health information for adults in the U.S., outranking their own physicians.[1] Despite that growth, life science companies spent less than 3 percent of their total ad spend for prescription medications on Internet ads in 2008 ($130 million) according to TNS Media Intelligence.[2]
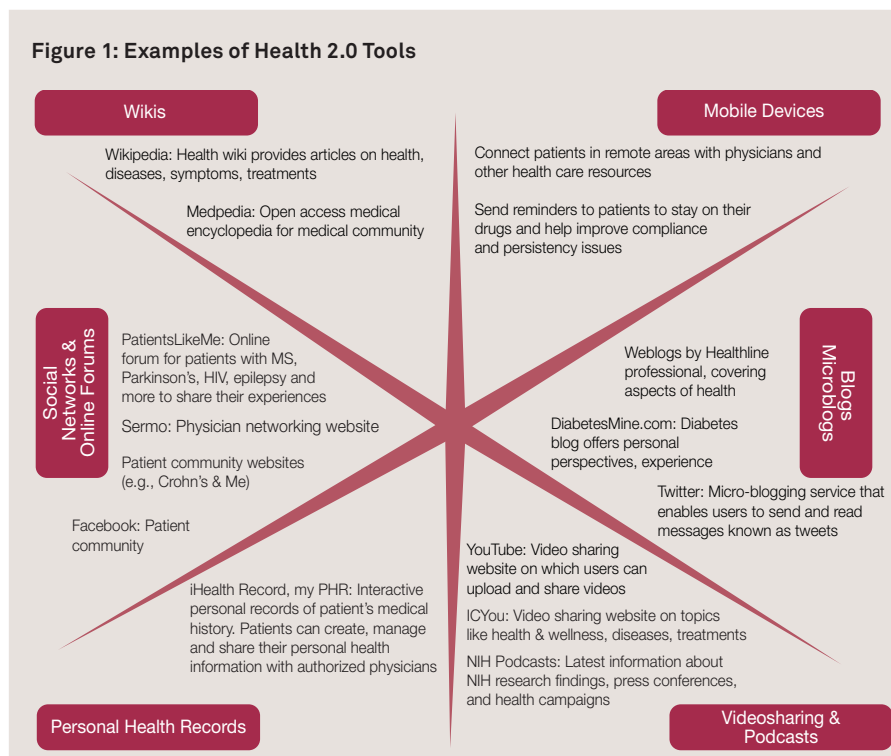
Behind search engines and health portals, social media are the third main online tool used by U.S. adults to find health information.[1] Wikipedia, for example, is one common, well-known social media source. A confluence of factors has facilitated this shift, particularly the increased expectations in consumers' minds of accessibility and active participation in social communities. This shift will have greater importance as the pharmaceutical industry transitions from blockbuster to specialty drugs, where marketing budgets are under pressure to reach a smaller target population, and in-depth knowledge of the niche market is critical.

There are several key factors that continue to drive the adoption of Health 2.0 practices:

- Maturing infrastructure and technology
  - Mainstream Internet adoption
  - Increased use of mobile devices
- Favorable market forces
  - Transition from blockbuster to specialty drugs
  - Government acceleration of electronic health records
- Change in patient and physician behaviors
  - Increased active engagement and control of personal health
  - Access to online community and social networks

Health Care Stakeholders Already Embrace Health 2.0

Where life sciences companies have been slow to adopt Health 2.0 practices, several health care stakeholders have leveraged online tools and communities with impressive results. In this health care

Figure 1: Examples of Health 2.0 Tools

Wikis
- Wikipedia: Health wiki provides articles on health, diseases, symptoms, treatments
- Medpedia: Open access medical encyclopedia for medical community

Mobile Devices
- Connect patients in remote areas with physicians and other health care resources
- Send reminders to patients to stay on their drugs and help improve compliance and persistency issues

Social Networks & Online Forums
- PatientsLikeMe: Online forum for patients with MS, Parkinson's, HIV, epilepsy and more to share their experiences
- Sermo: Physician networking website
- Patient community websites (e.g., Crohn's & Me)
- Facebook: Patient community

Blogs Microblogs
- Weblogs by Healthline professional, covering aspects of health
- DiabetesMine.com: Diabetes blog offers personal perspectives, experience
- Twitter: Micro-blogging service that enables users to send and read messages known as tweets

Personal Health Records
- iHealth Record, my PHR: Interactive personal records of patient's medical history. Patients can create, manage and share their personal health information with authorized physicians

Videosharing & Podcasts
- YouTube: Video sharing website on which users can upload and share videos
- ICYou: Video sharing website on topics like health & wellness, diseases, treatments
- NIH Podcasts: Latest information about NIH research findings, press conferences, and health campaigns

perspective, the key health care stakeholder groups are patients, health care providers, payers, government and researchers.

Patient Opinion Leaders Become Stronger Influencers

While the influence of Key Opinion Leaders (KOLs) remains important among the physician community, Patient Opinion Leaders (POLs)—specific individuals sharing their personal experiences via a Patient Support Network independent of geography—are wielding significant influence among patients of specific diseases. POLs use social media like YouTube, Facebook and Twitter, providing their followers a patient point of view that is well informed about their specific disease (see Figure

2). Respected by their fellow patients, they often provide coaching, best practices and assistance with navigating the health care system and could be key partners in kickstarting a Health 2.0 strategy. The Kru report shows that POLs with unbranded websites have greater numbers of followers as compared to branded websites.[3]

Physicians Embrace Health 2.0 with Patients and Peers

Physicians are embracing social media primarily to access real-time data and gain peer support on patient care. A 2009 Manhattan Research study shows that 61 percent of physicians in the U.S. use new media, such as blogs and video, and 18 percent use the Internet during patient consultation (see Figure 3).[4] Through online

[1] "How America Searches: Health and Wellness," iCrossing, January 2008.
[2] "Drug Makers to Press for Guidance on Web Marketing," *Wall Street Journal,* November 12, 2009, p B4.
[3] "The Pharma-Twitter Experiment: How Brands Can Achieve a 14% Response Rate," The Kru Report: e-Patient Connections, July 2009.

Figure 2: POLs Influence Other Patients' Behaviors and Attitudes

Matthew Z. from "I'm too young for this" enables young adults with cancer to get better information and support
Number of Twitter followers: 6281

Community leaders such as Manny H. from tudiabetes use their influence and community following to petition the FDA to improve access to and quality of diabetes treatments
Number of Twitter followers: 4495

Amy T. uses her devoted diabetesmine community and crowdsourcing to improve diabetics' lives
Number of Twitter followers: 2265

Caregivers such as Nathan L. share their personal stories with millions of people to raise awareness for a rare life threatening condition such as Cystic Fibrosis (CF)
Number of Twitter followers: 1763

Source: Twitter. Retrieved on March 16, 2010.

communities like Sermo and MedScape, health care professionals can generate real-time discussions and share information across geographies and medical specialties.

Payers Leverage Health 2.0 to Improve Revenue and Contain Costs
Payers view Health 2.0 as an opportunity to improve revenue generation by offering better products and services to their customers and to contain costs by managing care and reimbursement more efficiently (see Figure 4).

U.S. Government and Public Agencies Use Social Media to Raise Public Awareness on Specific Issues
As the health care industry evolves, pharmaceutical companies can no longer focus only on physicians, but need to consider other key stakeholders.

Even the FDA is participating in social media, having launched Twitter feeds, such as FDA_Drug_Info and FDA recalls, to notify the public on drug approvals, safety alerts, recalls and market withdrawals.

Health 2.0: A World of Opportunities for Life Sciences Companies

For life sciences companies, the true value of Health 2.0 lies beyond traditional marketing and branding. Health 2.0 has the ability to:
- Drive new market insights
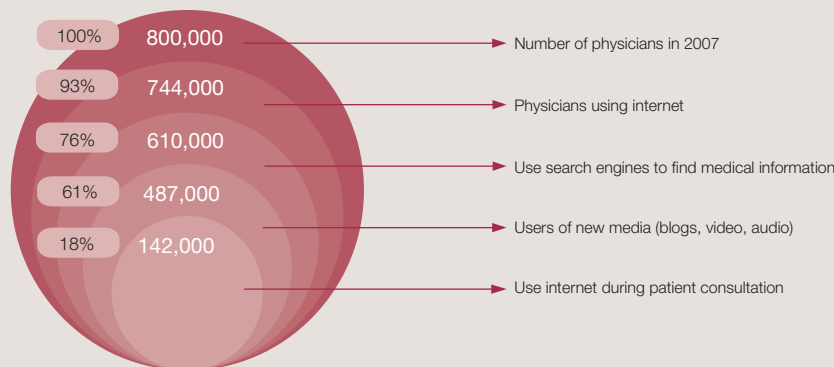- Improve disease management
- Penetrate new markets

The Impact of Health 2.0 on the Product Life Cycle
Integration of Health 2.0 can improve overall sales across the product life cycle (see Figure 5). Using social media to shorten the R&D cycle by driving market insights can help bring products to market sooner and with better functionality. Social media increases awareness which compresses the adoption curve. With improved disease management using Health 2.0 tools, patients remain compliant longer, resulting in longer maturity and slower decline phases.

Health 2.0 can increase the adoption rate and extend the product life cycle of new drugs, which is important for the success of these drugs, especially for niche drugs or chronic diseases. In Capgemini Consulting's opinion, social media have the potential to generate a significant positive impact across the product lifecycle.

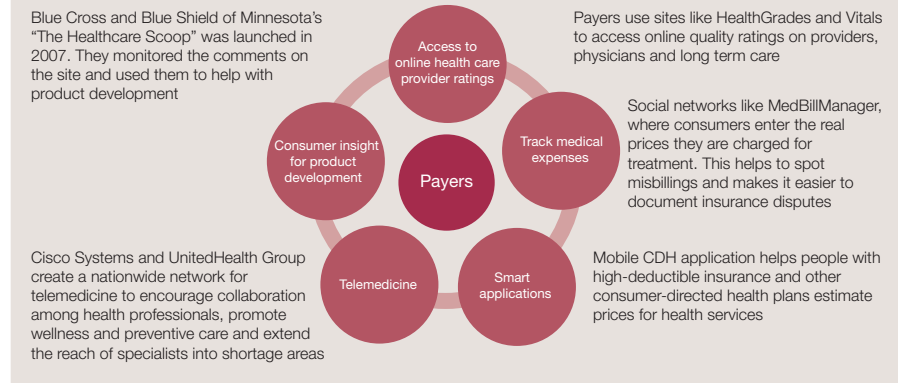**Figure 3: Physicians Continue to Adopt Usage of Social Media[4]**

100%	800,000	Number of physicians in 2007
93%	744,000	Physicians using internet
76%	610,000	Use search engines to find medical information
61%	487,000	Users of new media (blogs, video, audio)
18%	142,000	Use internet during patient consultation

[4] "Physicans in 2012: The Outlook for On Demand, Mobile, and Social Digital Media," Manhattan Research, 2009.

Case in Point: Physician Benefits[5]

The American Heart Association (AHA) and American College of Cardiology (ACC)'s Pinnacle registry helps cardiology practices provide physicians guidance on managing their patients' risk factors. Using data from its computerized medical record system to measure performance across targets (e.g., patient cholesterol levels), physicians within a specific practice were able to help their patients hit their goals, shifting from 70 percent to 90 percent compliance.

Figure 4: Payers Utilize Health 2.0 in Connecting with Key Stakeholders

Blue Cross and Blue Shield of Minnesota's "The Healthcare Scoop" was launched in 2007. They monitored the comments on the site and used them to help with product development

Payers use sites like HealthGrades and Vitals to access online quality ratings on providers, physicians and long term care

Social networks like MedBillManager, where consumers enter the real prices they are charged for treatment. This helps to spot misbillings and makes it easier to document insurance disputes

Cisco Systems and UnitedHealth Group create a nationwide network for telemedicine to encourage collaboration among health professionals, promote wellness and preventive care and extend the reach of specialists into shortage areas

Mobile CDH application helps people with high-deductible insurance and other consumer-directed health plans estimate prices for health services

Payers
- Access to online health care provider ratings
- Consumer insight for product development
- Track medical expenses
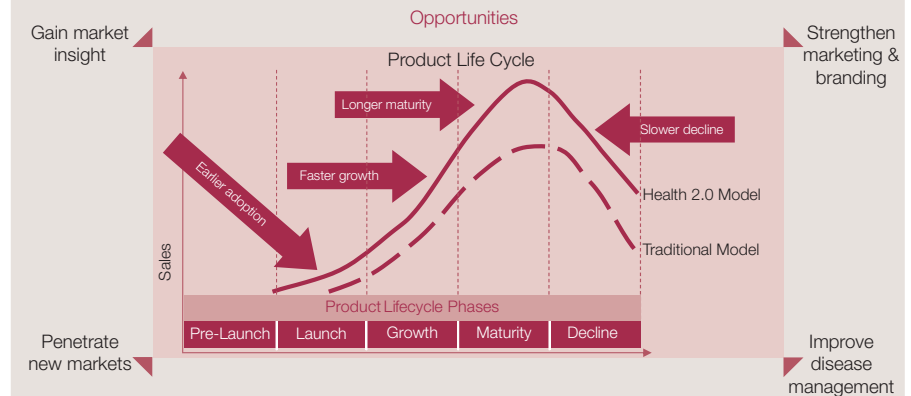- Telemedicine
- Smart applications

Gaining Market Insight

The Internet offers a source of new insights for the life sciences industry. Dedicated social communities provide life sciences companies the opportunity to gain depth of knowledge about a specific disease. This insight can help throughout the product life cycle, from product development through commercialization, by:

- Increasing understanding of therapeutic areas
- Improving product launch preparation
- Accelerating uptake at launch
- Improving post-launch management

Online communities can help prioritize development efforts. For example, UCB has partnered with PatientsLikeMe to create an online site to develop its own epilepsy community to capture real-world information from patients. This will enable UCB to develop more effective epilepsy drugs and to help UCB design value-added services, which will attract customers and reduce generics erosion (see Figure 6).

Figure 5: The Power of Health 2.0 to Impact the Product Life Cycle

Gain market insight

Opportunities

Product Life Cycle

Strengthen marketing & branding

Longer maturity

Slower decline

Earlier adoption

Faster growth

Health 2.0 Model

Traditional Model

Sales

Product Lifecycle Phases

Pre-Launch	Launch	Growth	Maturity	Decline

Penetrate new markets

Improve disease management

5 "Battle with Heart Disease Moves to the Doctor's Office," *Wall Street Journal*, November 10, 2009, p. D4.

Improving Disease Management

The current regulatory environment has a greater emphasis on risk management, from initial drug approval to Risk Evaluation and Mitigation Strategies (REMS). Health 2.0 tools—online, mobile or both—can help with compliance and persistency, through the increased access and frequency of communications with patients and the integration of patient health records.

Life sciences companies can use Health 2.0 as a key component of their outreach. Health 2.0 provides the opportunity to address compliance and persistency issues, bring together key stakeholders faster and at lower cost, and track positive outcomes for drugs using real-world data. Social media tools can improve patient health monitoring by increasing patient involvement, as compared to limited monitoring through routine physician visits. While the end-result is improved patient health, the benefits to improved disease management extend to physicians and payers.

Examples of Health 2.0 tools to improve disease management include:
- Diagnostic tools (e.g., iPhone apps)
- Support communities (social networks)
- E-consultations (remote health diagnoses)
- Online health stats monitoring (statistical health tracking)
- Health reminders (notifications to help patient compliance)
- Real-world outcomes research (shared treatment and symptom information via Patient Support Networks)

For instance, diabetes patients use iPhone apps developed by individuals like Diabetes Log that allow patients to log their blood glucose data and export it. Johnson & Johnson LifeScan recently announced a new iPhone app that will allow users to upload blood glucose readings directly from their blood glucose meters to the iPhone.

Case in Point: Patient Benefits

One of the benefits of Kaiser's Integrated Electronic Health Records is helping chronic patients remain healthy.

Figure 6: PatientsLikeMe and UCB Partnership[6]

PatientsLikeMe enables its members to track and learn from real-world outcomes

PatientsLikeMe enables patients suffering from life-changing diseases to:
- Converse with one another
- Share data on improving their outcomes and empathize with each other
- Learn other techniques to improve their health

Physicians and researchers can use it to:
- Find what treatments patients have tried
- Understand the outcome of the treatments

Patient communities include:
- 11,000 users multiple sclerosis
- 8,000 users with mood disorders
- 3,500 users with amyotrophic lateral sclerosis

Pharma company, UCB, increases its disease knowledge through the epilepsy-focused patient community

UCB to collect, analyze and reflect on information received from people with epilepsy for:
- Increased understanding of the effectiveness of epilepsy drugs across the board
- Confidentiality maintained with no personal information divulged
- Adverse events to FDA through round-the-clock surveillance, including pharmacovigilance platform for adverse event monitoring, utilizing an "unique patient identifier"

UCB has 2 epilepsy drugs in the market and 3 more in phase 3 clinical trials

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[6] "UCB and PatientsLikeMe Partner to Give People With Epilepsy a Voice in Advancing Research" June 15, 2009, http://www.patientslikeme.com/press/20090615/18-ucb-and-patientslikeme-partner-to-give-people-with-epilepsy-a-voice-in-advancing-research; "UCB-sponsored PatientsLikeMe Site is Live," PharmExec.com, George Koroneos, Jan 27, 2010.

Penetrating New Markets

Niche Target Populations

As life sciences companies shift their development towards products for niche markets, Health 2.0 can help them align those drugs to the smaller target populations. Social media can increase access, with more directed marketing communication to physicians, patients and payers. Shifting customer practices are also leading to other potential opportunities:

- Increasing patient self-education, particularly using online sources, illustrates the need for life sciences companies to participate in active outreach
- Outcome-based pricing and changes in formulary approval processes demonstrate the need by physicians and payers for more scientific evidence and health outcomes data

Developing Countries

Developing countries offer new markets for life sciences companies, and the strong mobile penetration in these countries can be leveraged to access patients and accelerate sales. SMS-based (text) technologies can improve reach and help increase patient compliance with medications. In addition to SMS, Health 2.0 tools offer lower-cost methods of communication that can be delivered to smaller target populations (see Figure 7).

According to Terry Kramer, strategy director at British operator Vodafone, "There are 2.2 billion mobile phones in the developing world, 305 million computers but only 11 million hospital beds."[7] Through the use of mobile technologies, life sciences companies can provide value-added health care services and increase their customer base.

Strengthening Brand Equity

Patients and physicians are demanding greater transparency, and life sciences companies can provide that while also improving their brand image through social media. KOLs and POLs have broader audiences online than ever before. Establishing two-way communications with these opinion leaders and a company's target population enhances the company's credibility. Health 2.0 also offers the opportunity to build awareness through viral marketing campaigns. In a recent survey by ORC Guideline looking at 2012 marketing plans, U.S. pharmaceutical marketers weighted websites and emerging media as more important than traditional marketing channels.[8]

Capgemini Consulting recommends life sciences companies establish relationships with POLs to help broaden the reach of their message, increasing their proportion of a consumer's "share of mind." Developing this type of relationship for life sciences companies is a challenge that must be internally managed, given the risk associated with and resistance to the potential loss of control of the marketing message.
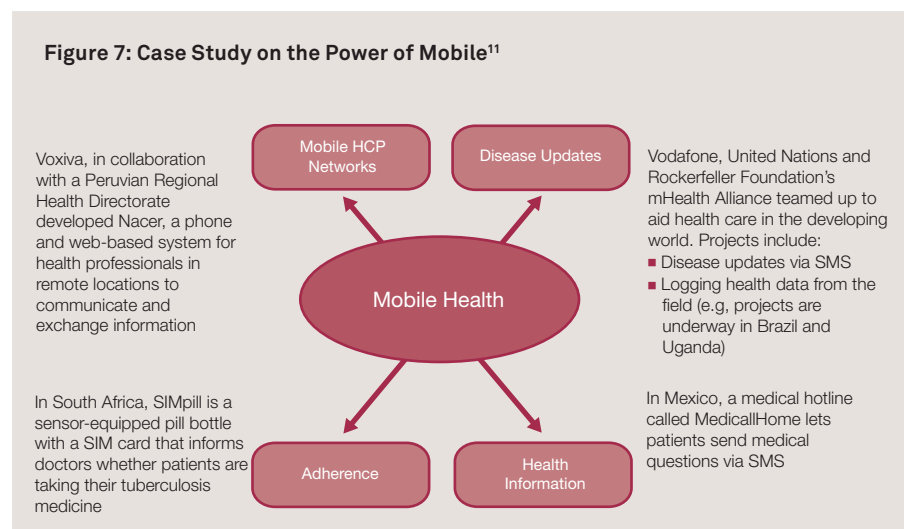
Life sciences companies are now accepted as part of physician online communities, with 59% of physicians welcoming pharma participation on physician social networks.[9] With an average physician age of 47, Sermo allows visitors to poll the community and post questions and also features icons located next to targeted conversations to facilitate access to relevant pharma information and services.[10]

Risk Tolerance for Improved Market Benefits

Health 2.0 includes risk, which has driven limited adoption by life sciences companies, especially in a risk-adverse and uncertain health care environment. The challenges primarily focus on:

- Loss of control over messaging
- Regulatory and compliance concerns
- Measuring ROI
- Effective execution

Figure 7: Case Study on the Power of Mobile[11]

Voxiva, in collaboration with a Peruvian Regional Health Directorate developed Nacer, a phone and web-based system for health professionals in remote locations to communicate and exchange information

In South Africa, SIMpill is a sensor-equipped pill bottle with a SIM card that informs doctors whether patients are taking their tuberculosis medicine

Vodafone, United Nations and Rockerfeller Foundation's mHealth Alliance teamed up to aid health care in the developing world. Projects include:
- Disease updates via SMS
- Logging health data from the field (e.g, projects are underway in Brazil and Uganda)

In Mexico, a medical hotline called MedicallHome lets patients send medical questions via SMS

Mobile HCP Networks · Disease Updates · Mobile Health · Adherence · Health Information

7 "Mobile Phones to Serve as Doctors in Developing Countries." ReadWriteWeb. S. Perez. February 20, 2009. Retrieved March 3, 2010 from http://www.readwriteweb.com/archives/mobile_phones_to_serve_as_doctors_in_developing_countries.php

8 "The "E-Dimensions" of Pharmaceutical Advertising," ORC Guideline, Trend Report June 2009.

9 "Physician Online Communities: Physician Social Networking and the New Online Opinion Leaders," Manhattan Research, Taking the Pulse v8.0 Study, 2008.

Life sciences companies need to holistically weigh the benefits against the risks, as the opportunities can be substantial when looking at the overall potential return across the product lifecycle.

Loss of Control over the Marketing Message

Social media requires collaboration and transparency, leading to a natural loss of control over the message. As messages get re-communicated, they can get distorted. (Remember the telephone game from childhood?) Traditionally, life sciences companies provide complete product information and education in static forms: marketing collateral and company-controlled product information websites. Marketing campaigns using viral or social media should be designed to enable patient or physician engagement while preventing dilution or distortion.

Increased Uncertainty Surrounding Regulatory Restrictions and Adverse Event Reporting

Tight monitoring is required and fast responses are needed if marketing messages are modified or misrepresented when forwarded. As social media evolves, newly released tools like Google Sidewiki can open up life sciences companies to unauthorized comments "alongside" their own company webpages, where they can monitor but cannot control access, heightening the need to be engaged with their stakeholders.

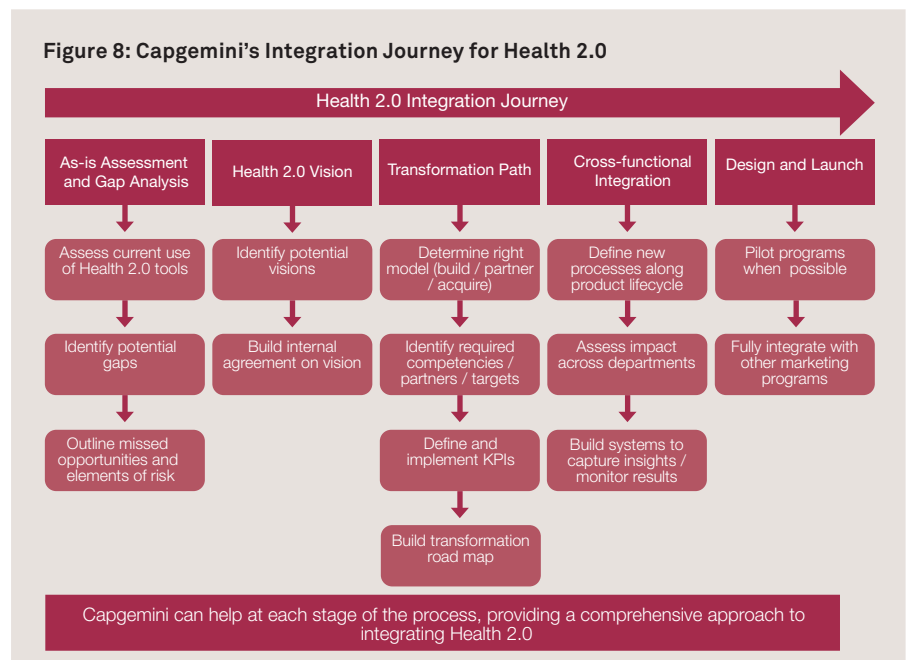Online media and the mobile environment make it difficult for life sciences companies to fully disclose all risks and benefits. In 2009, controlled media, like display search engine ads, resulted in six life sciences companies receiving fines by the FDA due to the lack of risk information; responsibility for information that is not controlled by those companies is even more difficult to contain. Social media, like Twitter with its limit on characters, also restrict the feasibility of including risk information. POLs and KOLs do not have vested interests in providing balanced information. With this in mind, the challenge facing life sciences companies is how they can enable these types of communication while remaining compliant with FDA rules for providing full disclosure.

The recent FDA hearings on social media on November 11-12, 2009 highlighted life sciences companies' interest in receiving clarity on this topic, especially given the concern about potential increased adverse event reporting and the anonymity of the web.[12] FDA guidelines are not expected until late 2010 at the earliest, but the FDA recognized the need to address several issues:

- Clarity is needed on how life sciences companies should handle adverse event reporting while remaining compliant with FDA rules
  - Techniques were suggested on ways to collect the information directly and simplify the process, including consumer-friendly language
  - Challenges remain on the ability to recognize and capture the required information for an adverse event
- Rules and guidelines for how life sciences companies listen to their customers
  - Interest expressed in monitoring their customers for trends while containing exposure to increased risk

Figure 8: Capgemini's Integration Journey for Health 2.0

Health 2.0 Integration Journey

As-is Assessment and Gap Analysis	Health 2.0 Vision	Transformation Path	Cross-functional Integration	Design and Launch
Assess current use of Health 2.0 tools	Identify potential visions	Determine right model (build / partner / acquire)	Define new processes along product lifecycle	Pilot programs when possible
Identify potential gaps	Build internal agreement on vision	Identify required competencies / partners / targets	Assess impact across departments	Fully integrate with other marketing programs
Outline missed opportunities and elements of risk		Define and implement KPIs	Build systems to capture insights / monitor results	
		Build transformation road map		

Capgemini can help at each stage of the process, providing a comprehensive approach to integrating Health 2.0

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[10] "Sermo Survey of US Physicians Indicates AMA No Longer Represents Them," Sermo Press Release, July 8, 2009.
[11] Retrieved March 20, 2010 from http://mobilewellbeing.info
[12] Retrieved March 20, 2010 from http://www.fda.gov/AboutFDA/CentersOffices/CDER/ucm184250.htm

Companies should design their commercial strategies to incorporate adverse event reporting as an integral part of their social media campaigns.

What Is the ROI for Increased Customer Engagement?

Measuring ROI for social media, even outside of life sciences, remains difficult. For life sciences companies, where customers are often not able to buy their products directly, this added layer prevents direct tracking. ROI can be partially quantified through increased product and brand awareness but should not be the main goal for social media. The greater benefit is increased market insight, driving a positive effect on the product lifecycle, and deeper personalized relationships for increased customer engagement. Despite the difficulty in measuring ROI, social media offers a strong cost benefit compared to other forms, due to its low infrastructure cost for tool development and maintenance, especially for developing countries or smaller niche markets.

Failure to Execute Social Media Well

Along with life sciences companies' concerns on participating, these companies have often failed to implement Health 2.0 well, treating it as a traditional one-way communication method. In response, patients and physicians ignore it, resulting in low engagement. Case in point, a life sciences company promoted its product on YouTube, with the end-result of only 32 subscribers after two months and no opportunity to capture patient complaints or adverse events.

A Partner to Successfully Help You Integrate Health 2.0 into Your Commercial Strategies

Capgemini Consulting has the experience to assist life sciences companies with designing and implementing Health 2.0 strategies (see Figure 8). Short-term opportunities include outreach to KOLs and POLs via social media, creation of a Health 2.0 company vision, or development of mobile applications for increased compliance or outreach in developing countries. A long-term strategy would integrate social media throughout the organization, from R&D to commercialization. With our experience in accelerating transformation, Capgemini Consulting can help life sciences leverage Health 2.0 as an essential element of its overall commercial strategies and marketing plans.

About Capgemini

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