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PHARMACEUTICAL INDUSTRY'S WEB 2.0 INITIATIVES IN THE NEW COMMUNICATION LANDSCAPE

Upotreba Web 2.0 tehnologija u komunikacionim strategijama farmaceutske industrije

Abstract

Pharmaceutical companies function in complex, heavily regulated markets characterized by declining access to physicians, limited customer loyalty, downward pricing pressure and low levels of public trust. The communication with key influencers requires above-average creativity and knowledge, and old, analogue patterns of communication in the new digital world are not an effective option anymore. Building on the fundamental ideas of Web 2.0, this paper deals with Web 2.0-oriented solutions for pharmaceutical companies. New communication landscape requires pharmaceutical companies to rethink the communication logic, which will help them to reach out to key influencers.

Keywords: *Web 2.0, pharmaceutical industry, social media, marketing*

Sažetak

Farmaceutske kompanije funkcionišu u kompleksnom okruženju koje karakteriše stroga zakonska regulativa, sve teži pristup lekarima, limitirana lojalnost potrošača, pritisak da se snize cene farmaceutskih proizvoda, kao i nizak nivo poverenja javnosti. Komunikacija sa uticajnim donosiocima odluka u oblasti zdravstvene i farmaceutske zaštite zahteva natprosečnu kreativnost i znanje, a stari, analogni obrasci komunikacije, u novom digitalnom svetu više nisu najefektivnija opcija. Polazeći od ključnih ideja na kojima su Web 2.0 tehnologije zasnovane, rad istražuje komunikaciona rešenja u sferi Web 2.0 tehnologija namenjena farmaceutskim kompanijama. Novi komunikacioni „pejzaž" zahteva da farmaceutske kompanije revidiraju svoju komunikacionu strategiju, što im može pomoći da njihove poruke dopru do ključnih donosioca odluka u sferi zdravstvene i farmaceutske zaštite.

Ključne reči: *Web 2.0, farmaceutska industrija, društvene mreže, marketing*

Introduction

Over the past few years, we have been witnessing the transformation of McLuhan's vision of the Global Village into reality: the number of Internet users has grown by over 140 times since 1995; more precisely, from 16 million in late 1995 (accounting for 0.4% of the world's population at the time) to more than 3.3 billion in November 2015 (46.4% of the global population) [29]. The network effect generated in such a fashion [20, pp. 509-542] has unprecedentedly transformed the communication landscape: becoming a universal information source at work as well, and imposing an imperative need to be online, the Internet has served as an avenue for introducing business into the era of ultimate transparency owing to Web 2.0, and caused "businesses [to] have increasingly less control over the information available about them in cyberspace" [33, p.60]. Consequently, Web 2.0 has become very influential in identifying and/or defining needs, potential suppliers, and in the final selection of a supplier [64]: by placing at free disposal a practically unlimited choice of easily and simply available (more or less) independent and reliable user-generated content about products and services, Web 2.0 tends to facilitate the discovery and evaluation processes, and, owing to the experiences of others, enables identifying and learning practically everything about a

product or service without interaction with retailers, which essentially influences the negotiating powers and positions.

Yet, having analysed over 400 research papers in the field of Internet marketing created in the same period, Corley at al. [18] have reached the conclusion that one of the major thematic gaps in research lies within the area of Web 2.0. Focussing the scope of attention on recent empirical data and business practice of pharmaceutical companies yields the information that online presence by pharmaceutical companies in 2013 was dominantly achieved through: company websites (84%), product (71%) and disease websites (70%) – still in secure realm of Web 1.0 [59]. A complementary note is sounded by the opinion that pharmaceutical industries still view social media as uncertain [59], and the report of Capgemini consultant agency *The Digital Advantage* [15] which deals, among others, with the digital (im)maturity of pharmaceutical industry, scoring them low in both digital intensity dimension (investment in technology-enabled initiatives) and transformation management intensity dimension (leadership capabilities to drive digital transformation through organization).

The article is built around the concept of utilisation of Web 2.0 technologies by pharmaceutical companies, in order to achieve some of their communication (and marketing) goals. The first part of the paper introduces fundamental ideas on which Web 2.0-based social media are established, with the main purpose to reveal its impact on changing communication landscape. The second part of the paper leads marketing practitioners from pharmaceutical industry towards available prescriber and patient-oriented Web 2.0 initiatives, discussing the benefits and perils of their utilization.

Fundamental ideas of Web 2.0 technologies

Using "network as a platform" [47], Web 2.0 technologies enable users to evolve from mere passive consumers of one-to-many created web content in the one-way dialog of the Web 1.0 era into active creators, whether as independent creators or contributors (or both) of Web content by using user-friendly easy-to use application not requiring specific ICT knowledge (many-to-many Web content creation). "The

most popular categories of Web 2.0 applications (often referred to as building blocks concatenated into Web 2.0) include blogs, wikis, social networking, tagging and social bookmarking, multimedia sharing, podcasting, RSS, etc." [57, pp. 87-88]. These products of Web 2.0 evolution rest on some (or all) of the key ideas of Web 2.0 [3]:

Individual production and user-generated content is the idea serving as a basis for the so-called citizen journalism or grassroots journalism [25], podcasts, multimedia sharing sites (such as YouTube, Flickr, etc.) and social networking sites (such as Facebook, MySpace, Twitter, LinkedIn, etc.).

Wisdom of Crowds, as one of the manifestation forms of the Harnessing the Power of the Crowds principle, "is the basic idea of Web 2.0-style thinking, starting from the viewpoint that the solution to the problem, proposed collectively but independently by individuals comprising a large group, the so-called 'crowd', is better in quality than a solution offered by the most intelligent group member" [58, p. 746]. The same principle applies to "asking the audience" in the "Who Wants to Be a Millionaire?" quiz show [3, p. 16], while typical examples of Web 2.0 services/applications based on the Harnessing the Power of the Crowds principle are wiki systems, and, to some extent, blogs.

Architecture of participation refers to the idea of designing a Web 2.0 service so as to provide an architecture whose simplicity and ease of use encourages and facilitates mass user participation; through the contribution of a large number of members to generating contents offered by the service, mass user participation contributes to improving the quality of service.

The idea of *Openness* is based on the concept of open source software, but rather than the code, it opens the content, and thus enables mash-ups, i.e. its re-use in various combinations. Even if users do not generate original content, they can take the role of active producers by disseminating content or generating new combination of data.

Based on Metcalfe's Law, *Network effect* concerns the economic and social implications of adding new users to a social network: the value of a network grows with every new registered user (but also with new posts, multimedia content upload, comment, or as little as a mere view). One

should, however, not ignore the fact that users are less likely to leave networks with more numerous members, which makes "competition at the early adopter phase of the innovation demand curve where social phenomenon such as 'word of mouth' and 'tipping point' and the human tendency to 'herd' with others play an important role" (Klemperer [35] cited in [3, p. 21]) exceptionally important.

Data on an epic scale: the volume of available data has never been larger in the history of mankind. However, quoting Tim O'Reilly [48], Anderson [3, p. 25] points out that "...the power may not actually be in the data itself but rather in the control of access to that data. Google doesn't have any raw data that the Web itself doesn't have, but they have added intelligence to that data which makes it easier to find things."

Research conducted by Andriole [4], regarding the use of Web 2.0 technologies by pharmaceutical companies, shows that they see blogs, wikis and podcasts as most beneficial platforms. All the three categories belong to the social media [33], which is an umbrella term that covers the categories of Web 2.0 online media offering their users the generation and/or remixability of content (text, images, audio, video etc.) and supports social interaction among users by sharing, talking, participating, collaborating, networking, bookmarking, etc. [2], [62], [13].

Blogs. With their ease of use of Web 2.0-based collaborative communications tools (or even knowledge management systems) for knowledge sharing, reflection and debate [70], where "knowledge elements are annotated and augmented by the readers" [9, p. 455], blogs feature as an "important and influential socio-cultural force" that promotes critical, analytical, creative, intuitive, analogical, associational thinking, and, through the combination of the "best of solitary reflection and social interaction", they increase access and exposure to quality information [22]. A special type of this media is audio blogging, better known as podcast, defined by Anderson [3, p. 10] as "audio recordings... of talks, interviews and lectures, which can be played either on a desktop computer or on a wide range of handheld MP3 devices". In addition to audio files, podcasts also provide very simple availability of video footage (vidcast), as well as .pdf files, but a podcast may refer to any other type of file.

Wikis. Unlike content-centric blogs, wikis are collaboration-centric. They can also be defined as ever-growing knowledge repositories under permanent community-based peer revision, which "embody the collective efforts of multiple users and reflect a generally agreed-upon view" [64]. The positive characteristics of blogs can be attributed to wikis as well, and Kokkinaki [36] extends them further: "...wikis improve teamwork skills, group processing and social skills...they promote better comprehension, active processing and positive interdependence while at the same time they can be used as a digital environment for 'problem sharing' and prompt feedback" [36, p. 1121].

The pharmaceutical industry's communication environment and goals

Pharmaceutical companies function in a complex environment. According to Campbell [14], demand on this market is generated through three key groups of influencers: prescribers, patients and payers. Consequently, communication goals have to be tailored towards these constituents through the prism of their competences, role and impact on decision making regarding the choice of pharmaceutical therapy. The focus of this paper will exclusively shift towards ethical (prescription) drugs. Prescription pharmaceuticals require expert medical opinion in diagnosis; seriousness of condition dictates medical supervision during the treatment; and finally, inappropriate use may represent serious health hazard. Besides being one of the most heavily regulated markets[1],

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1   The sources of such legislation should also be sought in historical data, where unregulated promotion in this sphere of trade resulted in the sale of pharmaceutical products by the formula '...one for man, two for beast...' Without strict legislation, '...often not labelled with their ingredients, resulting in benign substances as well as dangerous chemicals being touted as cure-alls containing "secret" ingredients.' [65, p. 12]. Although there is no precise data, it was not uncommon for such preparations not only not to help patients, but also to exacerbate their condition, including the case of sulfanilamide poisoning in 1937, leading to the loss of 100 lives. Another tragedy, 30 years later in Europe, taking the sedative Thalidomide in pregnancy resulted in the births of a large number of children with deformities. These two isolated cases contributed to a strict regulation of pharmaceutical industry, with the requirement to prove the safety and effectiveness of a drug before the sale license is issued. Legislation defining the labelling, packaging and promotion of pharmaceuticals was developed simultaneously.

the market for ethical pharmaceuticals has specific characteristics that require knowledge and above-average creativity to communicate with the target market. The OTC products ("over the counter", sometimes referred to as the parapharmacy) market resembles more the FMCG ("fast moving consumer goods") market.

The moving forces on the demand side in pharmaceutical industry can be identified through three aforementioned key roles. However, physicians in role of prescribers and patients as end users will be discussed in details, whereas payers' facilitating role is left out of the scope of this paper.

- Physicians as prescribers play a key decision making role in the choice of pharmaceutical treatment. It is therefore no wonder that they are indicated as the most important communication "target" for pharmaceutical industry [11], [52], [27], [21]. The prescribers "initiate drug therapy and select the product that best fits patient's needs and personal situation" [14, p. 42], and the key factor differentiating them from other stakeholders is their right to prescribe a drug. Smith et al. [60] support the thesis that, when speaking of ethical drugs, the focus of interest of pharmaceutical marketing is on the intermediary rather than the final consumer. Unlike consumer goods (and OTC medications), in the case of ethical drugs, a relatively small group of people makes decisions on specific products that the final consumers or patients are to use. In order to address this specific group of decision makers, companies have so far relied on massive sales force and personal selling (referred to in the industry as detailing). Available time for sales pitch is steadily declining [38], [12], so companies are finding new methods strongly supported by Web 2.0 technologies, i.e. e-detailing [1], [68], [59]. According to Weinstein [69], expenditures for e-detailing are gaining larger share of promotional budget, and the most successful e-detailing campaigns have a three-figure percentage rise in the number of "virtual visits" to physicians.

- Patients act as the end users of pharmaceutical therapy. As much as their role in influencing the choice of (pharmaceutical) therapy is far more limited than when choosing a bar of chocolate or a new tablet, it

is wrong to conclude that patients have no influence in this process. "Today's and tomorrow's patients are demanding, informed and sophisticated." [19, p. 18]. Pharmaceutical industry and its marketers have the task of understanding the consumers in their patient role, their motivation and decision-making process, as these parameters will reflect powerfully on generating the appropriate marketing mix. Web 2.0 tools can be, and already are used as powerful, almost CRM-like [49] systems for tracking patients' experiences with different medical misalignments and/or therapies, from searching the information to supporting patients' compliance[2]. Furthermore, concept of Patient 2.0 [1] was introduced to define the change affecting relationships between different constituents of healthcare system, dominantly recognizing the role of new technologies in supporting this transition.

- Health insurance systems (public and/or private) provide the complete or partial coverage of the healthcare cost, including the costs of pharmaceuticals. The payers' special position can be defined through three key objectives of the healthcare system [44]: quality, costs and availability.

Consequently, the specific nature of pharmaceutical products [34], [46], [50] "…complex, and sometimes controversial amalgam of science and business" [14, p. 4] draws extraordinary attention of vast stakeholder front, from policy makers to general public. The problem is certainly not new, as Reekie [53, p.33] stated, "Advertising frequently generates controversy. Few industries, however, have so much strong feeling aroused by their promotional activities as pharmaceuticals." Being under the keen eye of the public, the pharmaceutical industry's communication efforts are constantly on the brim of controversy, the clash between "for-profit" business logic and "consumers' preference for health-related endeavours to operate with

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2   Patient compliance has two key segments: taking medications in accordance with the prescribed regimen (i.e. three times a day) and perseverance in terms of adherence to therapy over the prescribed time period. Unless the patient adheres to therapy, i.e. if (s)he deliberately reduces either the frequency or duration or therapy, therapeutic effect can be diminished, but also this will produce a reduction of the theoretical market for a given medicine.

sensitivity to communal norms" [40, p. 163] being the main source of debate. One of the major challenges is the way pharmaceutical companies are addressing multiple audiences on their target markets, especially in light of the dramatic changes in the communication landscape over the last two decades.

Pharmaceutical industry and WEB 2.0

Pesse et al. [51] introduced the idea of networked healthcare. The concept makes a lot of sense if cross-referenced with advances in technology and new "networked" world in which we live. It is amplified by the fact that pharmaceutical industry has its meaning in a wider frame of reference, as a part of available (mainstream) healthcare system in a certain geographical area.

According to Meadows-Klue [42, p. 247], "Web 2.0 DNA" supports creation of platforms that enable creation of social networks[3], with the ability to generate and share content – social media. Additional support for this course of action is certainly in the industry's response to troubled relationships with stakeholders. Many authors have already

indicated inadequate understanding of the industry's marketing environment, declining access to physicians (so far dominant target of pharma communication), shift towards personalized solutions in health care and pharmacy, limited customer loyalty, downward pricing pressure and low levels of public trust [23], [43], [61], [1]. Web 2.0 is certainly not a panacea, but offers an opportunity, with other efforts, to improve the pharmaceutical industry's "health" – dominantly through better understanding of network constituents and significant potential for enhancing influence and image (see Figure 1).

The Networked Healthcare concept can facilitate creation and delivery of value added (which is, essentially, the central issue of marketing) to all stakeholders, (the whole "network" as such), in a balanced and "sustainable" manner [63]. Web 2.0 services – based on their two-way exchange of information – provide pharmaceutical companies with ability to gather data and simultaneously exercise influence on various target audiences [10]. Better understanding of various elements of network (see Figure 1) translates into ability to use acquired knowledge in adjusting organizations to suit the needs of stakeholders

Figure 1: Points of WEB 2.0 impact on networked healthcare market
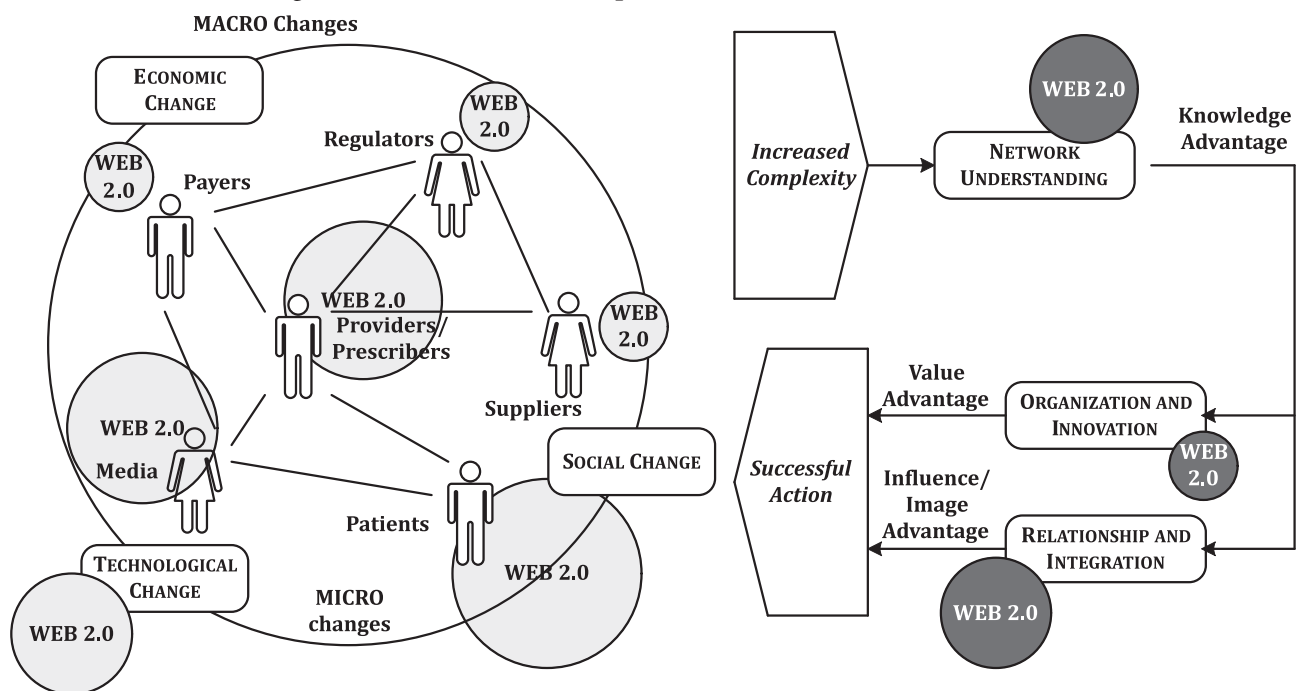
Source: Adapted from [51, p. 170]

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3   Social networks are not new to humanity; social psychology studies mutual relationships between individuals within a particular social group, the development of Internet and Web 2.0 moved the concept to virtual communities.

better, and, to a certain degree, to employ findings in their organizational model, as well as their R&D process.

The advantage of networked healthcare model [43] is its compatibility in logic with the major communication tool of marketers today – Web 2.0. Following this idea, a pharmaceutical company can employ systematic approach to:

a) defining the communication goals (raising awareness about the disease, promoting prevention, building awareness about possible therapies (including building product/brand recognition), supporting patient compliance, rehabilitation, etc.);

b) understanding the stakeholder network – "mapping" the network allows identifying key groups for goal achievement, and figuring out possible technologies for reaching these groups, as well as tailoring message to the specific needs of target audience; and

c) analyzing influence of networks – understanding "network knots", identifying different aspects of contacts among social network members, patterns of influence, types of connections (professional/social, regular/irregular, with/without feedback), allowing creation of Web 2.0 tools and tactics for managing these networks. An average marketing student today is educated to encompass "social media, word of mouth, buzz and influence" [26], [71] in integrated communication plans.

We shall now look at some specific examples of Web 2.0 initiatives, which can focus our attention on this emerging, yet not fully utilized, communication channel and its benefits.

Prescriber-oriented Web 2.0 initiatives

SERMO (www.sermo.com) is the largest online community for physicians in the US, although not yet global [7]. We can say that SERMO is the Facebook of MD's. Currently, there are more than 200,000 physicians, covering 68 different specialities. Recent acquisition of SERMO by WorldOne Interactive promises the global development of platform based on SERMO model to gather virtual community of 1.8 million health care professionals from 80 different countries [7]. A recent rise of strong competitors like Doximity and

PeerCase [6] speaks volumes about benefits of business idea to create social networking platform dedicated to physicians. SERMO financing model is based on allowing "…financial institutions and government agencies to view discussions between doctors." [41, p. 56], but is rapidly expanding its client base with pharmaceutical companies. Benefits for different stakeholders are obvious:

- The government has a more efficient pharmacovigilance[4] system;

- Financial institutions (in the role of healthcare insurance companies) get insights related to standards in practice, therapies, and can even track some aspects of pharmacoeconomics[5];

- Pharmaceutical companies (like Pfizer as the first SERMO customer) follow prescribers' (MD's) communication and gain valuable information regarding different behavioural patterns of prescribers, which allows adjusting personal sales efforts to them, thus being translated into organizational enhancement. On the other hand, by following prescribers' practice and cases, new ideas can emerge transforming into R&D advantage.

As previously mentioned, the most commonly used Web 2.0 applications in pharmaceutical industry are blogs, wikis and podcasts. These platforms are considered most beneficial, and it is expected that they will be used at a greater scale in future, based on their perceived productivity, speed and cost. A whole plethora of possible web-solutions can be built having in mind the following two-dimensional matrix (See Figure 2):

- associations with companies (branded or unbranded).

- strategic orientation on: specific products, therapeutic areas or certain medical conditions.

It is (not) surprisingly difficult to find clear affiliations of branded web initiatives; they are usually "hidden" under

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4 Monitoring the adverse effects of drugs.

5 Scientific discipline comparing the value of one drug therapy to that of another; pharmacoeconomics analyses the cost (expressed in monetary units) and effects (expressed in monetary units, efficiency or improved quality of life) of a pharmaceutical. Pharmacoeconomic evaluation can be viewed from several aspects: cost minimization, cost-benefit analysis, cost effectiveness analysis and cost-utility analysis. The basic idea is that limited resources are allocated in a standardized and scientifically based way. Pharmacoeconomic analysis also implies decision making about the perspective from which the analysis is performed: institutional or social.

Figure 2: Different web-based communication solutions

	ORIENTATION ON DISEASE (CONDITION)	THERAPEUTIC AREA	SPECIFIC PRODUCT
UNBRANDED *without association to pharma company*	**PATIENTLIKEME.COM** *Website for sharing real life experiences and focus on different medical conditions . Not specialized in any particular disease .* *Active presence on different Web 2.0 services:*	**CARDIOLOGY/VASCULAR DISEASES** *http://drwes.blogspot.com/* *Blog by cardiologist Westby G . Fisher, coves interest in cardiology , but also broader topics in healthcare .* **THERAPEUTIC AREAS FORUM** *http://www.doctorslounge .com/* *Communication between patients and professionals in different therapeutic areas.*	**N/A**
BRANDED *With association to pharma company*	**PARKINSON'S DISEASE,** *www.parkinsons -voices.eu* *Company sponsored website ; platform for communication and sharing information between people with Parkinson's disease . Patients testimonies shared over*	**ONCOLOGY** *http://mylifeline.org* *Portal is supporting exchange of life stories and experiences of cancer patients. In list of major strategic partners are several pharmaceutical companies with strong portfolios in oncology .*	**ACCU-CHECK** *www.accu-chekdiabeteslink .com* *Company sponsored website ; links towards different social media . Oriented towards diabetes and clearly sponsored by brand of diabetes diagnostic tools from Roche Inc .*

Source: The authors.

strategic partnerships and in funding statements. Colombo et al. [17] expresses concerns regarding the transparency of the relationships between different patient/consumer groups and pharmaceutical companies, and argues that building trust and credibility requires affiliation/funding information to be clearly stated, which is currently not the case.

Chataway [16, p. 38] advocates shift from "…well funded advertising and corporate communications campaigns", because new media require new logic. Web 2.0 requires communication from both sides, and companies are impaired by legislation, and even more by tarnished reputation. Truth be told, bad reputation comes from a bad behaviour, which means that prior communicational efforts of pharmaceutical companies were perceived by public as troublesome. Pharmaceutical companies are advised to direct their activities at the more mediating role of "… adding relevant and useful information, or identifying other credible sources of information and amplifying thoughtful conversations, without trying to drive it." In the long run, image improvements are possible if actual behaviour is in line with that of a good corporate citizen. One of the most important tools or benefits of engaging

in Web 2.0 is actually listening; according to Houston [28], this is essential for any good social media initiative. Transferring old, analogue patterns of communication into the new digital world is not an effective option; the industry needs to rethink its entire communication logic. Web 2.0 offers wide opportunities to meet needs and expectations, simultaneously embracing technological change, and reaching wider stakeholder base (payers, media, general public, etc.).

Patient-oriented Web 2.0 initiatives

The real power (burdened with real perils) of Web 2.0 comes from the ability to connect with a much broader stakeholder base than was possible in the "analogue" era. Patient-oriented Web 2.0 solutions are numerous. Iskowitz [31] brings several stories of renowned companies that utilized blogosphere to gain valuable understanding of their target market, i.e. Roche supporting the Accu-Check brand through sponsoring influential diabetes bloggers, and later expanding activities to Facebook and Twitter.

The Snow Company [66] pioneered the Patient Ambassador program, dominantly focussed on building

various communication platforms to reach patients, dealing with their "…motivation, recruitment, screening and compliance training". Pharmaceutical companies benefited through gaining genuine patient insight that helps them in their patient outreach. At the same time patients can be assisted in their search for objective information.

Orientation to value-adding for various groups can alleviate some of the pressure generated by the so-called taboo trade-off [40], sending message about greater sensitivity to communal considerations. Numerous points of impact can be identified that can easily and effectively utilize Web 2.0 technologies, and are congruent with major (communication) objectives of the pharmaceutical industry.

All these have in common the ability to be perceived in the public/stakeholders' eye as much more leveraged, and useful, than other routes of communication. Patients identify much more easily with another patient, they listen more tentatively, and they act with more vigour.

Following a web page, blog or social network site oriented to patients with a certain condition, the gathered information can be used to change drug formulations and drug delivery, easing administration or supporting patient compliance with innovative ideas. Even greater benefits could be materialized in influence/image categories with possibilities of addressing wider audiences. Active participation in disease awareness programs and supporting disease prevention through web technologies makes a lot of sense for enhancing image and extending goodwill. Numerous programs also try to work on enhancing the life of patients suffering from certain medical conditions and are also a good opportunity to emphasize good corporate citizenship.

As a result of insight into complex healthcare networks, pharmaceutical company marketers must understand that the consumer/client is the network itself rather than any of its separate elements. Marketing effort, especially in segments where the pharmaceutical industry's efficiency and/or reputation is at stake, must be directed to various stakeholders who have key impact on their behaviour within the network or pharmaceutical market. A better understanding of the needs of the target market – defined as a complex network – leads to innovation in the function of meeting their needs more efficiently and effectively. Organization of marketing activities

becomes more efficient and oriented towards exploiting information and knowledge with the aim of achieving business results, and it also opens the opportunity to strengthen the reputation of pharmaceutical companies which become integrated through this process into the environment in which they operate.

The other side of the coin: controversy of liberal media and controlled market

Pharmaceutical companies' online presence, and especially their utilization of Web 2.0 technologies, is still relatively low. We shall briefly address some of the major obstacles to more efficient and effective utilization of this obviously important, and even hip communication channel. The fact is that pharmaceutical companies are following trends and want to be where the action is; expenditures for internet promotion are increasing [45], [30]. It is as simple as – if you are not present, others might be – your competitors, or opponents, or disillusioned customers, grumpy public, and it is increasingly easy for all stakeholders to engage in communication and convey their message wider than ever before. Pharmaceutical industry seems to be hesitating to engage Web 2.0 technologies for enhancing the experience of all stakeholders. Factors that are perceived as obstacle are for sure: regulation, fear of losing control over communication process and content, tarnished reputation that haunts the industry, and last but not least, strategic indecisiveness of top management to accept technology with all its potential and limitations.

Strict regulation creates substantial barriers regarding the topics, scope and content of communication [6], [5], [31]. Making it possible for the other side to communicate actively (which is the main feature of Web 2.0), pharmaceutical companies are losing control over the content, but legislators still consider them accountable. Consequently, this induces rigorous monitoring (and censorship from the side of the company) of communication amplifying the voices of industry adversaries even more [1]. Whenever you give opportunity to the other side to express their opinions, you can count that there will be the negative ones [28], and the industry still needs to learn how to deal with those. Fragile trust and chipped image can easily break

apart through Web 2.0 – especially if you helped creating efficient a platform for sharing opinions and perspectives – information spreads like the flue through a kindergarten.

National legislation, although somewhat different[6], has the same standard for communication regarding pharmaceuticals. The primary purpose of pharmaceutical promotion is conveying objective and balanced information. Promotional activities on this market are strongly related to the content of the message, which has to be strictly based on clinical trials. However, Frosch et al. [24] reveal that most of Big Pharmas' communication glorifies benefits and diminishes side-effects, which certainly does not help with tarnished reputation. The decades-long debate on direct-to-consumer (DTC) promotional activities is fuelling controversy even more. According to Egilman and Druar [21], research data confirm patients' perception that pharmaceutical promotion contributes to their understanding of health condition and treatments. The real question is the extent of unbiased, objective information provided by pharmaceutical companies.

The industry seemed previously to be handling the issue of DTC with (un)intentional clumsiness. "US internet-based marketing is available in all countries to anyone with an internet connection" [21, p. 4497], yet companies will hide behind ridiculous disclaimers, especially on branded, product-oriented websites. "This Web site is intended for US consumers only" (www.lipitor.com; www.advair.com; www.crestor; www.arimidex.com) will hardly keep away customers from other geographical areas. From the technological perspective there are far more efficient and simple solutions, like rerouting visitors from certain IP addresses to other (less promotion-oriented) websites.

McCubrey and Forgues [39] argue that legislators were slow in responding to the new communication channel and introducing guidelines, making the industry more wary of pursuing new communication channels. That certainly induces strategic/tactic indecisiveness regarding the web, and, more specifically, Web 2.0 technologies.

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6   Promotional activities of prescription drugs directed to patients are allowed on the US and New Zealand market; in the US with active legislation directing DTC practice, and in New Zealand – a lack of firm guidance on the issue allows DTC promotion of ethical drugs. Pressure exists to allow this practice on EU market, but so far without EU legislator yielding in front of pharmaceutical lobbyists.

According to Capgemini report [15], "digital immaturity" of pharmaceutical industry comes from weighing threats and opportunities from engagement with social networking, blogosphere, multimedia sharing, wikis, and multidimensional downsides (aforementioned legislation and lack of control primarily).

Taking all things in consideration, the benefits are great and promising, but the industry seems to be constantly walking on the edge "…where boundaries between legal/illegal, ethical/unethical and commercial/altruistic are blurred most of the time" [50, p. 31].

Current state of affairs and conclusions

Communicational goals of an average pharmaceutical company do not differ from the goals of a company in any other industry. Legislation determines what is permitted in the promotion of pharmaceutical products, but it would be wrong to conclude that this limits the creativity in their promotion. Marketers in pharmaceutical industry have all the instruments of promotional mix and all their combinations at their disposal to convey the intended message to the multiple target audiences. What makes things more complex are the facts that depict this market:

- R&D-driven industry that spawns a substantial number of new pharmaceuticals;
- development of new communication channels; and
- internationalisation.

A number of interviews the authors conducted with professionals involved in marketing in the pharmaceutical industry have revealed that this market shows a strong orientation of marketing towards content, i.e. information and knowledge in the function of higher quality of decisions made by prescribers, in a joint mission of providing patients with the best possible and/or available therapy. Rod & Saunders [54] stress out the importance of informative component in pharmaceutical promotion.

Sackett et al. [56, p. 71] consider the concept of evidence-based medicine (EBM) as '…conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.' Where does this evidence come from? They are the output of scientific research process, clinical trials, advances in

and development of the medical profession. However, according to Kushner [37, p. 50], 'pharmaceutical industry has inserted itself into every aspect of medical practice from medical education to basic research and clinical care.' Modern society has opened space for the pharmaceutical industry to legitimately claim the right to such impact, relieving society of:

- a part (or all) of the care of continued education of physicians and pharmacists;
- the need to disseminate information in medicine/ pharmacy via formal channels; and
- to conduct clinical trials proving the effectiveness and safety of a drug at the expense of society.

In all this, the assumption on which the ethical/ moral aspect of this concept rests is that commercial interest will not overpower the medical/altruistic one. If the marketing function, marketing organizational unit and marketing activities were removed, would the problem disappear as well? Or are we trapped in a 'tangle of moral compromise' [8, p. 5], where each of the parties gives something in exchange for something, but none of them is entirely satisfied?

Kane et al. [32] see Web 2.0 as a tool that enables deep relationships with stakeholders, with the ability to be extremely efficient in mobilizing people and resources towards different goals, as well as the superior ability for knowledge generation and synthesis.

There is a new generation of physicians and a new generation of patients living their lives and making decisions, from Y generation to millenians or iGeneration [55], the latter two being native in digital society. How will they search for information, where will they turn, when they are so used to having everything available – not anymore with a mouse click, but with a swipe of their finger? Will they share news and update statuses on numerous social media about illnesses, cures, therapies, life style changes and experiences? It is already happening.

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