Magdalena Szpunar – Contemporary models of indexing and classifying the knowledge on the folksonomy and tagging example as mechanisms of the bottom-up indexing information

Abstrakt:

Artykuł podejmuje kwestie związane ze społecznościowym klasyfikowaniem wiedzy. Autorka zwraca uwagę, iż zmiany społeczno-kulturowe generowane przez nowe technologie implikują redefiniowanie takich terminów jak: wiedza, autorytet i mądrość. W świecie wikinomii stopnie naukowe, afiliacje, czy przynależność do grona tracą swój monopol i autorytatywność w określaniu tego, co stanowi rzetelną, niepodważalną wiedzę. Istotne znaczenie w procesie tworzenia wiedzy odgrywa mechanizm społecznego tagowania treści (*social tagging*), który nie tylko ułatwia proces klasyfikacji, ale również w znaczący sposób determinuje ich społeczną wartość. Folksonomia rozumiana jako organiczny, oddolny mechanizm klasyfikowania informacji ułatwia porządkowanie internetowych zasobów, stając się sposobem na okiełznanie internetowego chaosu spowodowanego nadmiarem informacji.

Abstract

This article aims to show the transformations taking place within the formation, classification and legitimization of knowledge. The author describes a bottom-up mechanisms for indexing knowledge which we can find in the web space. The population of the Internet users reject the representatives of the objective knowledge – scientists, specialists, gatekeepers, believing rather collective intelligence functioning through knowledge mechanism based on skills and abilities of individuals cooperating with one other. Thanks to the joint actions of individuals, the collective increases the level of knowledge and expertise of its members through the extensive cooperation and debate.

We grew in the tradition, in which the knowledge must be authorized by experts. How Paul Levinson notice, regardless of whether this knowledge comes from the clergyman, professor or newspaper publisher, finally professionals determine what is acceptable, satisfying and in consequence in force. Knowledge – Levinson says – to be reliable must have an imprimatur, specific seal which constitutes the proof of its approval by the examiner (Levinson 2010:136). How Andrzej Radomski and Radosław Bomba notices, from a few centuries learning was most valued and distinguished kind of the knowledge, constituting sui generis new religion. Scholars created from the 17th century specific "Republic of scholars" which constituted the peculiar kind

of the corporation, in which determined what science is and what isn't (Radomski and Bomba 2010:131-133). Tadeusz Sozański in reference to Jonathana H. Turner notices, that ability to produce the formal theory, codifying and accumulating the knowledge, depends on whether the organization can include formal, among others "Move the laity from the impact on creation knowledge, (…) to concentrate control in one's hands and administering stores essential to create the knowledge" (Sozański 1998:487-506). Simultaneously as Radosław Sojak notices, scientists at the stage of formulating scientific theories not always use the basic code of science, supported by useful-unusable dichotomies, power-failure of power, ethical-unethical and more important: "aren't able to grab real course of the formation of scientific knowledge" (Sojak 2004:89). Stanisław Ossowski puts uncompromising diagnosis of the sociologists scientific community, which in his opinion: "behaves as the knowledge began from him: he builds own notional apparatus, putts former issues from the beginning, often discovers, which other already earlier made or which accessed already into the sphere of the popular knowledge, and grant them appearance of scientific natures" (Ossowski 1962:164). How Edwin Bendyk notices, we prefer the situation in which: "knowledge for which encyclopedia is a symbol, is a domain of experts. University degree, honorary titles and membership in scientific societies and academies are supposed to assure that expert legitimacy himself is trustworthy – can prepare the article in encyclopedia or scientific journal" (Bendyk 2006:74).

Currently however, university degree, affiliations or membership in the circle of experts, in wikinomy [1] world lose its monopoly and authoritativeness in determining, what constitutes a reliable, indisputable knowledge. Social-cultural transformations generated by new technologies are entailing redefining such terms as: knowledge, authority and wisdom. We are evolving today in direction which deprives current authority exclusivenesses for determining, what is truth and what isn't. How correctly Pierre Levy notice: "Nobody knows everything. Everyone knows something. Entire knowledge has mankind" (Levy 1997:20). Such a belief breaks conviction coming from the Aristotelian tradition, in which they assumed that because knowledge and well-being are connected, the way one reality only exists, there is only one structure of the knowledge. The best source of knowledge is an expert knowledge. The digital era, according to David Weinberger, eliminates all of these assumptions, changes the perception of knowledge, and even its meaning (Weinberger). The key importance in the evolution of perspective on the process of creating knowledge plays a social mechanism tagging contents (social tagging). The population of Internet users reject the representatives of the objective knowledge – scientists, specialists, gatekeepers, believing rather collective intelligence (Levy 1997), which is functioning based on the knowledge creating

mechanism on the basis of skills and abilities individuals cooperating with each other. Thanks to joint actions of individuals, the collective increases the level of knowledge and expertise of its members through the extensive cooperation and debate (Jenkins 2007:10). Jan van Dijk shows that producing the knowledge rare often has individual character nowadays and more often becomes a social activity of the communities (2010:104). The population of Internet users deprecates taxonomy, replacing it with the community marking and assessing contents. An essential model of creating knowledge in the Internet is model based on collective intelligence, wisdom of crowds, what constitutes the excellent exemplification even if the biggest Internet encyclopedia Wikipedia. In this article, due to its limited framework, mainly models of marking and classifying the available knowledge online will be described.

Internet users in order to bring the chaos under control, caused by the increasing number of information appearing on the Web as well as to minimize problems with the quality assessment and presented online accuracies of the information use tagging mechanisms and folksonomy, to facilitate organizing information. Folksonomy – from Eng. folks – people and nomy – given field legal system, should understand as the grass-roots, organic ranking which organizes online resources (Tapscott and Williams 2008:71). This term on his blog in 2004 Thomas Vander Wal defines as the result of marking information by users for own purposes – most often organizing information (Wal 2007). Bruce Sterling folksonomy describes as the spontaneous meeting online users of information, who wonder about description of the given word and mark it with determined labels. Sterling notices that although folksonomy is almost worthless for searching specific and detailed information offers categorizing (Sterling 2005). This classification system, whether differently including indexing of contents, facilitates dealing with the diversity of option and choices in the Internet space, eliminating experts from this process (Tapscott and Williams 2008: 70). They can admittedly participate in this action, but this activity is based mainly on amateur action, grass-roots choices of Internet users. How the results from the Pew Internet & American Life Project report, almost every third American Internet user declares tagging of accessible online contents – 28% (Rainie 2007). It is worthwhile add that this examination was led in 2007, so we can conclude that scale of this phenomenon is nowadays even greater. Tagging, that is marking information/sources of accessible online according to certain feature, products of different kind are being subjected to human activity: texts, films, video files, sound files and even blog entries etc. Recently, an extremely popular tagging form is Facebook button “Like it”. How authors of the New Media notice. Introduction, crucial it is here that in the process of classification information or data, there is no outside control, and users perform a controlling function (Lister, Dovey, Giddings et al. 2009:311).

These alone determine according to which key classify the given information. In this way, huge reserves of the Internet are described and categorized, without need to incur high financial outlays associated with employing many specialists in taxonomy (Hofmokl 2009:165). Of course this grass-roots action of Internet users doesn't constitute the panacea miraculous remedy to control chaos in the network, in the significant way minimizes and cause simpler getting to interested information. Anna Maj notices that social aspiration to collection and sharing available online information became a trait of the contemporary culture, and crucial element of this type action is that services used for a public categorization, exploit subjective ways of organizing the knowledge (Maj 2009:147). Here also a specific recommendation of the person trusted, well-known to us is significant. If her interests are coinciding from our, her tags much facilitate us process of the network resources data verification.

In Figure 1 presented possible means tagging contents – starting from those which have character typically personal, e.g. Flickr in which users tag materials mainly for their own needs, through Technorati, which uses delivered by the user descriptions of blogs, in order to others could reach them, to Wikipedia which above all categorization contents of other users for other persons (Hammond, Hannay, Lund, Scott 2005).

Fig. 1. Individual and social indexing of the content

Source: T. Hammond, T. Hannay, B. Lund, J. Scott, *Social Bookmarking Tools. A General Review*, in: D-Lib Magazine, April 2005, Vol. 11 No. 4.

P. Tafiłowski thinks, that main problem of wrong tagging relies on the fact that users don't often know how to use tools which they have at their disposal, not actually reading the meaning of assigning them. Their knowledge with opinion of the author, determines the quality of the labels given by them (Tafiłowski 2010). Perhaps this way is in many cases, however in my opinion the core of problem lies somewhere else. Good tagging of information can occur when person about similar look at world, similar world view or education performs it. For example information tagging by students of sociology as essential, can be not very significant for the sociology teacher (certain issues can be treated by them selectively, and because of that can receive inappropriate markings), and completely unimportant for the engineer, of course if we are talking about specialist information, rather than e.g. about cooking, although also in this case close are important similar tastes. Tagging information for the person not-dividing bases for its tagging i.e. world view, taste or religious beliefs of the author isn't worth much. However mechanism of tagging, labeling, community marking of contents plays an important role in the circulation of content. Henry Jenkins believes that today should talk about spreadable media i.e. where

recipients plays key role, which send interested contents to themselves. The seemingly trivial choices of single users exert – with Jenkins opinion – significant effect to the contemporary media landscape – ones materials are becoming very popular, others are losing the attention of users (Filiciak, Danielewicz et al. 2010:137). Number of tags assigned by users to given contents (Flickr, Del.icio.us), number of hyperlinks leading to given website (Google PageRank, web pages, blogs), whether popularity of given contents what is transferred on exists of them in many popular services (YouTube, Blogger, MySpace) determines their social value. What is equally essential, the information value of certain sources depends exclusively on the decision collective intelligence, action grass-roots, but not-imposed upon ex cathedra. The meaning of labeling contents is deeper than organizing, classifying found online information, because it has creative character – searching for some indexes conduct finding persons about interests similar to us.

The most popular services to tag are Flickr and Delicious. Flickr service was created in 2004 year, and its popularity owes among others tag cloud method [2] which constitutes graphical depicting the contents of web site. For example the inside image of St Mary's church in Cracow indicated is the following tags: Poland, Kraków, Krakow, Cracow, Church, UNESCO, Old Town, Gothic etc. Delicious.com is the second popular service facilitating categorizing contents, allowing for collect and categorizes links to favorite web pages.

Fig.2. Sample tag cloud for the term Web 2.0

Source: Źródło: http://pl.wikipedia.org/w/index.php?title=Plik:Web20_pl.svg&filetimestamp=20081107123921

Anna Maj describing community, grass-roots ways of creating the knowledge uses wikification term. In her opinion wikification means dialogigue in the process of creating knowledge, unceasing opening on her negotiate, permanent and immediate interconnectivity, opening to other user and his authority. The expert knowledge undergo leveling with the layperson knowledge, amateur (Maj 2009:151-153). According to D. Weinberger the knowledge becomes a form of conversation, dialogue, and the more voices in discussion the better (Weinberger). In the diversity of voices and opinion based is a size. This incessantly negotiated, reconfigured, whether using the term H. Jenkins remixed knowledge (2007), leads to the fact that becomes still conversation, k disputes that never ends. Levinson in reference to John Milton notices that both the truth and falsehood should have a possibility of free presentation on the idea market, because in the confrontation with each other the truth is ultimate winner, although it may come across to certain problems, e.g. in the form of censorship which in process distorts the final result

(Levinson 2010:136). In case of the collectively created encyclopedia – Wikipedia, legitimized a certain degree doesn't change anything in drawing the password, because status of the scientist is equal to the position of layperson, who can bring as much as specialist to the whole. Such adhering to the full egalitarianism often raises conflicts and disagreement between opponents who don't want to regard rightness none of sides. Nobody trusts the expert a priori, even if he can demonstrate university degree title or specialization in the given field. Often long and laboriously he must prove his point and in such ways loses in polemics with the amateur-layperson. Excellent exemplification such difficult to combine situation are so-called editing wars of Wikipedia. It is situation in which two or more sides disagree as for the meaning of some password and repeatedly are changing them according to the own recognition. This situation usually regards difficulty of establishing a common position on religious slogans, political, philosophical. Rarely casus the edit wars are animosities among Wikipedia (http://pl.wikipedia.org/wiki/Wikipedia:Wojna_edycyjna). In case when the password is stubbornly changed, administrators decide to block temporary password, what enables to discuss the arguable issue and to calm emotion. How point P. Levinson perfect Wikipedia is such who doesn't joining their interests with work on the article, in other words writing or editing the password shouldn't have nothing to gain or to lose in the personal, financial or professional meaning (Levinson 2010:142). Many times happens that Wikipedians try to promote oneself and their artistic work what is of course at variance with rules prevailing in this encyclopedia. Trying to control quite big divergence of positions or auto-promotion in many cases, Wikipedia developed certain principles which supposed to facilitate efficient and effective editing works. Applying the principle of neutral point of view is one of such principles, what in consequence supposed to mean that article edit by us shouldn't express no particularistic point of view, simultaneously postulated to cite reliable and verifiable sources. In explaining what a neutral point of view is, we read: "Wikipedia is an encyclopedia, i.e. compilation of human knowledge, but because this resource about global reach is created from certain bond of authors we can't expect that our partners will agree in all cases (or even in the majority of cases) about what forms the human knowledge in dense meaning. So we can adapt "loose" meaning of "human knowledge", according to which a broad spectrum of contradictory theories creates what we name with "human knowledge". Therefore, we should – both individually and collectively – make every effort in order to present these contradictory theories diligently, without attempts of any defense" (http://pl.wikipedia.org/wiki/Wikipedia:Neutralny_punkt_widzenia).

However, there are services which in contrast with Wikipedia – which is putting for referring to source materials – puts to the colloquial knowledge, often

disregarded or undervalued by experts. Banco Comun project is an example de Conocimientos (The Bank from Common Knowledge) which according to A. Maj is specific base of knowledge: "it is possible here to report desire or possibility to learn of any field of knowledge (…) the knowledge is given immediately, in the amount suiting recipients, regarding subjects in which they are interested and is free of charge, doesn't exclude anyone because of their age, lack of time or other issues" (Maj 2009:152-153). There are here no unimportant subjects, they are so important what extent interest are gaining and attention of recipients.

This leaving the rank of authority in categorical defining reality we can observe on different levels of education. In the industrial age the teacher was a person which had monopoly and exclusiveness to knowledge. His educational role limited to one-way handing over knowledge and its enforcing, which most often garbed to literal reconstructing its transmission. Currently – how Tapscott notices – such educating model completely isn't joining young generation which wants to treat education like the good and interesting play. According to Tapscott view teachers must learn to obey and talk to their pupils, encouraging them for independent discovering world, not contenting with enforcing the committing to memory of provided information (Tapscott 2010:230-237). One of reason dissonance between ideas of students, how education should look like, and educational realities faced by schools is that they belong to completely different generations. Generations of students are digital natives, whereas generations of teachers are digital immigrants. Digital natives – according to the concept of Marc Prensky – is person birth after 1983 year, they belong to the generation which grew up in world of new technologies. Entire life they spent in new media surrounding, therefore they constitute natural, integral element of their world, and the communication online constitutes for them natural way of communicating. Digital natives demonstrate problems with understanding long and complex text in the book, they prefer image and sound, and mobile devices are for them personal items, which willingly they experiment. Different perceiving about media surroundings is characterized by digital immigrants (contemporary teachers). In contrast to students, they indicate problems in controlling and understanding what is happening on the display screen. They better understand text than image, and in the process of acquisition knowledge they prefer patience and regularity. Treat new technologies with the mistrust and reserve (Prensky 2001). Immigrants dominate the digital language of Internet and new technologies, and assimilation with the new media environment runs analogy, like immigrants in the offline world, always remain strangers from the outside, outsiders. Frequently is that immigrants never assimilate with surroundings, culture of the new state in which they settled. We can observe identical behaviors at digital immigrants; although they learn the Internet and computer

service (and as a rule dominate this ability) language of this medium isn't their natural language, but the artificial prosthesis, which sometimes they are forced to live, because there is such requirement of times. Separateness worlds of digital natives, which in "virtual" are from always and immigrants which like strangers from the outside try to understand the new language of virtual environment, cause that natives doesn't understand the ignorance of immigrants in using new media and immigrants aren't dividing fascination of natives with virtual environment.

In science we are dealing with a different situation. Appealing to other authors is unusually important and valuable, but authorship as such, isn't blurred. How Andrzej Radomski notices: "It is appeared that the humanism works is at the same time a specific expression for the author: his personality, subconscious, experience, biography, system of values and the like of factors. The authorship of different works becomes also a base of the academic career: promotions, distinctions, authority, prestige and fame" (Radomski 2010:105). Simultaneously the author notices that many scientific works hide the authorship of certain concepts, however it doesn't mean to mask someone's deliberate an artistic work and e.g. about certain inspiration, reflection which are rising after the reading of earlier read work. In consequence it is hard to disagree with Radomski who thinks that even in science a mechanism of the collective intelligence works, because if to take into account all persons which contributed to the creation of given work, always we are dealing with collective activity (Radomski 2010:106). In many reviewers but also authors of article/book, in the significant way influence on its shape and character. Ludwik Fleck notices that knowledge has social character, because almost every exchange of ideas causes the situation, when appears ideas and standards which it is hard to assign to some specific individual. Raises something on account mental team shape (Denkkollektiv), which is characteristic for certain mental style (Denkstil) (Fleck 2006:325) which simultaneously is characteristic of this community, distinguishing it from others schools, electricities, mental styles etc. Fleck takes the view that the collective nature of scientific knowledge becomes evident today what mechanisms of the group cooperation are confirming, the group co-authorship of many academic publications, huge amount of magazines, inspections, conference, committees, assemblies, societies and congresses what in consequence implies the fact that every academic recognition is public action, because indeed appeals to the knowledge and abilities handed over by others. Fleck in his deliberations concerning the collective nature of academic recognition, goes step further – claims straight out that single, isolated man would be sentenced to the intellectual infertility (Fleck 2006:325-327). It is hard to disagree with this statement. Conferences, congresses it isn't only the social round, but above all meetings aimed to what others are doing in my field, what new, interesting

topics were raised by fellow scientists, as well as possibility of the cooperation. Sometimes one sentence, one scheming thought gorge our mind, not letting rest, until for instance partly satisfying answer to the question bothering us will be found. Collective work forces on scientists also extrinsic factors. Progressing complicating the social structures, their increasing complexity, imply pressure in order to take Multi – disciplinary examinations and cooperation, which facilitate understanding and clarifying many issues. Tools and methods which representatives of the given field of study use more often stops being enough. It is necessary to use methods and tools developed on land of other disciplines.

Internet and media are changing not only in science field, but also redefine perceiving knowledge and representative knowledge – scientists. How Małgorzata Liskowska-Magdziarz notices, the scientist thanks to functioning media become media, so are characterizing it charisma, hyperactivity, preternatural abilities, irony, but it can also be sexy. Increasingly it is shown in the convention facilitating identifying, because is a man likes us. Many times in the name of science must "strikingly muddy, expose to danger or ridicule in order to build the message about the availability, affordability, commonness precisely what could as the scientific knowledge scare off excessive complication and theoretical" (Lisowska-Magdziarz 2009:197-198). The scientist in media must assume the role of showman, to use simplifications, joke, fun, because can't bore and tire the recipient. Simultaneously the opposite mechanism regards representatives of the popular knowledge. In order to authenticate theses thesis propounded by them overlapping "masks and latex gloves as well as seriously useful staffage with simple meta characters, suggesting importance of this knowledge, seriousness, basing on scientific procedures and authority of experts" (Lisowska-Magdziarz 2009:198). Between the crazy scientist-freak and showman-amateur the equal sign is put, because both are representatives of the knowledge although the second has nothing to do with scientific knowledge, because appeal to collective experience, of what still "everyone knows". Function in human minds, thanks to the process of exchange and community experience. That is fragmentary, random, simplified doesn't constitute obstacles to its dissemination and promotion, and straight out facilitates transmission, because appeal to experience observable by everyone and "common sense". Jerzy Biniewicz notices, that poetics of the scientific discourse is surrendering (among others thanks to media for significant transformations) scientific works more closely to the convention of the essay, than solid dissertation. Scientist language is full of metaphors, visualizations, relaxations (Biniewicz 2010:190), what facilitate his decoding. Biniewicz analyzing published articles in the "Politics" reprimand to the following mechanisms mediate of scientific discourse among others:

1. Selection of text determines the attractiveness (fashion, timeliness, sensational)
2. Significant reduction in scientific terms and replace them with synonyms, metaphors
3. Emotionalism of the language
4. Peculiar composition of the text (dividing argument into smaller parts, signaling each segment of text with separate title)

Hermetic, difficulty assailable knowledge is displaced by edutainment, which through leading fun conventions to science is supposed to facilitate and enhance learning process. Dichotomy science – fun nowadays goes out to rest. In order to assimilate knowledge it isn't necessary motionless to sit in desk, copying theses articulated thesis by the teacher. Digital natives – use Marc Prensky terminology – don't want in the modern school or in college to meet Professor Pimko Gombrowicz, who stated that "Słowacki was a great poet". According to Dona Tapscott, teachers must learn active listening and talking with their pupils, encouraging them for independent discovering world, and not limited to enforcement of the memory control information passed to them (Tapscott 2010:23-237). Contrary to appearances don't need large financial outlays in order to enhance the teaching process. How Henry Jenkins notices, history teachers could for example ask their students how to perceive the alternative historical scenarios, e.g. how would look like fates of the world if Germans would win the World War II (Jenkins, Clinton, Purushotoma et al.). In this type case studies there is no good or wrong answers, an inspiration for the own prospecting is most essential.

The grass-roots mechanisms associated with the community marking of contents, collective models of creating the knowledge which we can observe even in case of the Internet encyclopedia, whether media representations knowledge aimed on edutainment are distinct indicators of the fact that creating and classifying the knowledge models are changing nowadays. Knowledge today undergo processes of wikification, dialogic unceasing negotiating its meanings. Legitimized by the authorities, scientists, specialists from one side might say that is subject to a process of the pauperization (must be easily consumed by masses, that is deprived of foreign-sounding terms for colloquialisms), from the other side leaving the experts monopoly to recognize what should be regarded as knowledge and what shouldn't, for the collective intelligence in many cases can constitute the chance of improving its quality. Although, certainly can also support worsening its quality through subjectivity or appealing to the popular knowledge.

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[1] Don Tapscott and Anthony D. Williams define the phenomenon wikinomy appealing to four basic components: openness, partnerships, community resources and activity on the global scale. These four elements according to authors determine the trajectory of social, cultural and economic changes today observed in the surrounding us world.

[2] Marks called tags use to classify the content of web pages. Tagging service elements facilitates fast choice of interested information for the reader.