

Anja Ebersbach-Markus Glaser Towards Emancipatory Use of a Medium: The Wiki

Abstract:

With the rapid growth of the Internet in the 1990ies due to the WWW, many people's hopes were raised that the spirit of egality, the emancipatory power of the medium then, would be brought to the masses. With the increasing commercialization, the net became and is becoming more and more a one-way medium for advertising. Against this development, a new form of web pages has emerged and is becoming increasingly popular: the Wiki. Its distinctive feature is that any web page can be edited by anyone. Participants attribute the success to this openness and to the resulting collective production of content. In his 1970 article "Constituents of a theory of the media", Enzensberger developed a list of seven criteria that qualify, in his opinion, the use of a medium as emancipatory. These are used to investigate the question: Can wikis be thought of as a new form of emancipatory use of the medium?

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 - Missing Link Fragen an die Informationsgesellschaft (= Schriftenreihe der Universität Regensburg 28), hg. v. Anja Ebersbach, Richard Heigl, Thomas Schnakenberg, Regensburg 2003

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Introduction

With the rapid growth of the Internet in the 1990ies due to the WWW, many people's hopes were raised that the spirit of egality, the emancipatory power of the medium then, would be brought to the masses. It suddenly seemed possible that Brecht's and Enzensberger's requirements for an empowering use were fulfilled and that it was just a matter of time for this potential to make its impact. However, reality disappointed those expectations. With the increasing commercialization, the net became and is becoming more or less a one-way medium for advertising.

Against this development, a new form of web pages has emerged and is growing increasingly popular: the Wiki. Its distinctive feature is that any page can be edited by anyone. Participants attribute the success to this openness and the resulting collective production of content. This integrative usage raises the question: Can wikis be thought of as a new form of emancipatory use of the medium?

In his 1970 article "Constituents of a theory of the media", Enzensberger developed a list of seven criteria that qualify, in his opinion, the use of a medium as emancipatory. To answer the above question, we will take each criterion and apply it to the use of wikis.

A new form of web-based collaboration: Wiki

"A wiki [...] is a website (or other hypertext document collection) that gives users the ability to add content, as on an Internet forum, but also allows that content to be edited by other users."

The name is derived from the Hawaiian word for "very quick", which also characterizes a wiki's main feature: Working with a wiki provides a "quick and easy way"ⁱⁱ to produce content in the WWW and to collaborate via internet. The first one to introduce the wiki concept was Ward Cunningham, who, in 1995, published the first wiki system in the internetⁱⁱⁱ. The actual breakthrough came in 2001 with the launch of its now most prominent example, wikipedia.org^{iv}, a collaboratively created web based encyclopaedia. Wikis are also used to provide and publish tutorials and FAQ-lists for software (e.g. *German Smalltalk User Group*^v), dictionaries (e.g. *Wiktionary*^{vi}), and sources for expert information

(e.g. *JuraWikt^{vii}*). They can be used as an alternative medium for discussions to forums and mailing lists^{viii}, serve as a tool for brainstorming and provide a platform for project organisation and documentation.

The key idea of a wiki is that any page that can be viewed can also be edited. Since wikis are usually WWW-based, there is an edit link on each page which leads to a form, where the source text of this page can be changed. This includes adding links to other pages and even adding new pages. Technically, thus, wikis are a set of dynamic web pages. In order to keep track of the changes made to a page, its previous versions are stored and can still be viewed. These concepts resemble the original ideas connected with hypertext by Bush^{ix} and Nelson as well as those of the founder of the WWW, Berners-Lee^x. The facility easily to create structured content leads to a vast number of possible usages of a wiki, for personal purposes as well as for large scale websites.

User participation is vital to the success of a wiki web, and so various measures are taken to faciliate contributions. First of all, wiki pages do not use HTML as their base but have their own, simplified markup language, which resembles the signs used in email communication to indicate emphasis. So formatting a page becomes a rather intuitive act. Secondly, the internal link system is simplified. Page headings are used as references. One way to reference such a page is to include it in some kind of brackets. However, the more common variant is to use WikiWords for page names. They consist of a word beginning with an uppercase letter and containing at least one more uppercase letter and are automatically recognized as links. Thus, expanding the link structure within a wiki web becomes as easy as typing a word. Non-existing pages are automatically displayed in edit mode, which allows the user to create that page. Thirdly, there are various pages to encourage users to participate. There are a few easily accessible introductory or tutorial pages and one page called SandBox, where new users can try editing a page without actually changing any "real" content. Furthermore, many sites contain pages that indicate recently edited, most visited, or wanted pages as well as search functionality to give the users entry points for their contribution to the wiki and handle the emerging complexity.

The fact that, technically, the restrictions posed on the structure and content of a wiki web are kept to a minimum makes the participants and their level of organization a key issue for the success of a site. As in real life, there is a need for social behaviour. This is especially true in the case of conflicts as well as in the case of vandalism.

Of course, participants are not always happy if their articles are changed and do not reflect their opinion anymore. In extreme cases, this can result in downright edit wars, where two persons repeatedly roll back or undo each other's changes. To avoid this problem, usually a separate discussion page is created to keep the ongoing conflict out of the focus of the casual reader who is not interested in these details. Also, editors are recommended to keep a so called neutral point of view (cf. Decentralized program).

Many people object to the idea that editing can be open to anyone on the web, arguing that this at best leads to confusion or chaos and at worst produces nothing more than nonsense. However, wikipedia and others show that it may work; the articles in wikipedia in most cases are of rather high quality^{xi}. Yet Vandalism exists and comes in two forms. On the one hand, some people just delete the content of a page. This is of course easily detected and can be undone quickly, since every page does have its own history, and any version out of this history can be restored with a mouse click. On the other hand, there are fake entries or just nonsense statements to get some attention. These again can be undone via the history, but are harder to find. Usually, there is a core of wiki users who fill the role of maintainers, i.e. they regularly look at the recent changes page and take care that the entries are not destructive. Note, though, that these users normally do not have and don't need more rights than any anonymous user. Thus, it are the people that constitute the (sometimes really huge) community and therefore must take responsibility for the quality of the content.

The openness of wikis, their success and the emphasis on social community instead of technological means to produce quality content raises the question whether they are especially suited to be used by social movements, in other words, whether their use can be thought of as being emancipatory.

Enzensberger's Constituents

Enzensberger wrote his "Constituents of a theory of the media" in 1970. In the tradition of Brecht and Benjamin, he was making his contribution to a critical theory of the media, which is mainly concerned with the social consequences and the emancipatory power of media usage. In his famous "Radio Theory" (1927), Brecht proposes to "change over distribution apparatus from to this communication"^{xii}. Enzensberger directly follows these suggestions and elaborates the conditions and consequences of an emancipatory use of media. His "Constituents" were widely received and are often cited in theoretical discussions about alternative media. With the rise of the Internet, when many people put great hopes into this medium because of its egalitarian structure, his postulations seemed to become true. However, the actual use of the Internet has not proved his theses, since with commercialisation, there also came centralization and control. Of course, anyone still can add pages to the WWW. However, those sites that are widely recognized are mostly organized like conventional mass media.

The main criticism on the "Constituents" came from Baudrillard^{xiii}. He points out, that Enzensberger still maintains the distinction between sender and receiver and states that in order for a medium truly to provide the basis for an emancipatory use, this distinction has to be overcome. Without getting too deep into this discussion, we believe that the total dissolution of the subject, the complete loss of an indentifiable sender of a statement, leads to the loss of history and context. This cannot be emancipatory. It is necessary to be able to identify even with a collectively created piece of work and it is also useful to know the source(s) of a text in order to determine its intention. For further defence of Enzensberger against Baudrillard cf. Kellner (2004). Another point often brought against the "Constituents" is that it is too techno-deterministic. Given the right technical basis, the emancipatory potential of a medium would have to unfold. The recent development of the Internet gives impressive evidence that this is not the case. Therefore, in the rest of the article, we will talk about the actual use of media, not of their potential.

Enzensbergers criteria provide a useful framework to investigate the phenomenon of wikis and their usage. In what follows, we will compare his seven postulations with the reality of web sites that are based on wikis.

Decentralized program^{xiv}

"Potentially, the new media do away with all educational privileges and thereby with the

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cultural monopoly of the bourgeois intelligentsia.^{***}

Centralized organisation within media production gives a few people the power to decide on who may publish, what is published and who may receive. Naturally, this goes along with a position of power, which is usually occupied by those who are already in upper positions of society. The opportunity to publish one's thoughts is dependent on factors like education, experience or reputation. What these factors are and who suits them is not the result of a public discussion but of a decision made by the already mentioned group of operatives whe are not democratically controlled. Of course, they will not easily allow publications of people who do not conform to the prevailing philosophy. Since we are talking about mass media, as a consequence, many people only hear or see what the editors allow them to hear and see. This may lead in its extreme to centrally defined truths, which are hard to contradict.

A point that is often overlooked is that centralized power over the media means control over who may receive the published information under which conditions. The ongoing debate about intellectual property rights is a good example for the attempts of the information rights holders to restrict access to their products to those who pay or even, for competition reasons, to completely prevent the published information to be used. An example for the latter are patents. Digital rights management extends the centralized control over usage of media products even beyond the acquisition and restricts the number of times a product can be consumed as well as the kinds of devices it may be used with.

example Wikis, however, are a good of decentralized use of media. Many wikis do not even have the facilities for access restrictions, so anyone on the web may publish. Even in the case of a restricted group of users, anyone of those may freely write what they want without any previous control of their work. If any editorial changes are made, they are made after the original work is published and saved in the page's history, thus they accessible. Of course, wikis do have are administrators and there may be as well some who misuse their position. In most cases, however, wikis are administered by a group of people with equal rights who control each other and whose work and decisions are subject to all users' discussion.xvi

Arguments within a wiki community mostly concern the content of a specific wiki page when different views on a topic exist. The principle of consensus

concerning organisational issues is a quite important point to secure the efficiency and effectivity of collaborative work. To cope with different opinions users of Wikipedia are recommended to take a so called neutral point of view (NPOV). This encourages the authors to have their own point of view but avoids that these are presented as the only opinion possible. In practise often argument trees are built with pro and contra branches to give information on both sides and present links to pages of different opinions, e.g. like in the Wikipedia article on death penalty^{xvii}. In our opinion, the NPOV is at least problematic: There are points of view that are not acceptable and tolerating them is a statement in itself, e.g. the Holocaust denial. We think that a critical discussion of the consequences of the neutral point of view is necessary, yet this goes beyond the scope of this article.

Since many people are potentially involved in the editing process and therefore the definition of even a group of authors is hardly possible, it is common practice to let the masses produce for the masses, i.e. to put it under some kind of free public licence. An effect of this is that wiki pages can not only be viewed by anyone but that they are also protected against any kind of future restrictions of property rights.

Each receiver a potential transmitter

"A revolutionary plan should not require the manipulators to disappear; on the contrary, it must make everyone a manipulator." ^{xviii}

To meet this criterion, a medium has to become a many-to-many medium. Active participation of the many is not so much dependent on centralized control but on the costs of participation. These include financial costs, social obstacles to the access of the medium as well as the effort needed to acquire the necessary skills. A medium intended for emancipatory use must seek to keep these potential access restrictions as low as possible.

Participation in the Internet is still an almost exclusive privilege to educated people in the western world. Access is characterized by the Digital Divide. Only 5% of the world population have access to the Internet, two third of them live in five countries: USA, Japan, Great Britain, Canada and BRD^{xix}. But there exists also a kind of social divide which points to inequalities among the population within one nation, whereby mostly old, poor and female people remain technologically disconnected.



Financially, the costs for the devices needed to publish in or even to access this medium are still not affordable for most people in the world. In many parts of society, the internet plays only a marginal role, so that they are far away from considering the possibility of publishing anything on the net. Even for those who do have access to the net and consider contributing, the skills needed for creating pages on the WWW as well as the knowledge required for publishing these pages is still rather high standard and therefore mostly confined to experts.

As wikis are a part of the Internet, the above mentioned access restrictions remain. However, for those who do have access in the sense of receiving pages, it is also rather easy to create and publish content within a wiki. First of all, no own server or webspace is needed, since the data is hosted within the data base^{xx} of the wiki. Second, the tool for viewing and editing a page is the same, namely a web browser. Therefore, no new skills concerning the handling of a software have to be acquired. Third, editing a page is as easy as writing plain text. To add some structure, new pages or layout, a very simplified markup language is used, which is easy to handle. However, for almost each different wiki system, there exists an own set of markups, which have to be learned. The above mentioned SandBox helps to learn these by trial and error. Also, it is simple to correct one's own creations, so that users do not need to fear that a mistake once made is published forever.

Mobilization of the masses

"When I say mobilize, *I mean* mobilize.[...] to make men more mobile than they are *"xxi*

The previous two constituents, concerning the freedom to publish without centralized authorities and major technical or financial obstacles, implicate the following: people should be mobile in a sense that they are not restricted to the part of mere receivers. It is vital that possible ways of action are not confined to simply switching media on or off, but people are given room to act as potential transmitters. For this purpose they need a "real" communication medium that provides a platform where anyone has the chance to read, write and comment upon topics and which records historical material so that everyone can reproduce it for current purposes.

Wikis seem to be the direct answer to Enzensberger propagated "need to take part in the social process

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on a local, national, and international scale; the need for new forms of interaction, for release from ignorance and tutelage; the need for selfdetermination"xxii. With their egalitarian structures wikis allow each visitor to contribute to the wiki in his own personal way: whereas some will only read and use the wiki as a reference from time to time, some will return to the list of changes regularly, others might add texts or do some markup like linking texts. With so many possibilities given to the participants they have the freedom - and the responsibility - to contribute in those ways they think are best suited for them. Taking people seriously and giving them responsibility brings out the full potential in them. Furthermore, all activities and intermediate results of the production process are documented by a logging mechanism, so that later participants can benefit from previously made experiences, achievements or even mistakes.

Collective production

"A further characteristic of the media – probably the decisive one – confirms this thesis: their collective structure."

In a medium where everybody has the possibility to publish, a lot of people will share their individual opinions with others. This leads to a lot of information noise, and as a result, many individual contributions face the danger of marginalization. However, if participants begin to organize and start interacting, they may find that there are common interests which are worth making known to others. The content produced collectively is more likely to meet the concerns and issues of the community since it has its sources in a social interaction. Furthermore, working on a common project does have a highly integrative function. Participants will identify with the piece of work they produce and also with the group it emerged from. The unifying character of collaborative work is probably one of the main emancipatorial features of media usage.

Leuf and Cunningham (2001)^{xxiv} describe the possible evolution of a wiki article as follows: first of all, there is a sequential discussion, where everybody appends his or her individual opinions to a wiki page. With the page getting longer, the participants start directly responding to previous messages after exactly the sentence or part, at which the reply is directed, sometimes deleting previous messages that contain outdated or wrong information. From time to time, some people go over the page and "refacture" the content by putting together individual contributions to one single text.



Given that "[e]verybody feels that they have a sense of responsibility because anybody can contribute"^{xxv}, the quality of the text emerging in such a way is surprisingly high. There are other wikis (like Wikipedia), that do not start with a discussion part but have the form of an article from the beginning. In these cases, discussion about controversial issues is often sourced out to a separate discussion page, whereas non-controversial changes can be put directly into the page.

It is important to note that the main goal of an entry in a wiki web is not to depict individual opinions but the view or the facts a group of people, at best all the "netizens", holds to be true. A wiki page can therefore be described as a never finished summary of an ongoing discussion. Participation in such a discussion can be very motivating. First of all, there is the aspect that no one's contribution is a priori excluded from being taken seriously. So people will be motivated to participate. Also, they have their share in the direction and quality an article will take. Thus they will very likely identify with their work and also with the group that created it. This is an important point in the case of a political learning process.

Interaction of those involved, feedback

"Equipment like television or films [...] allows no reciprocal action between transmitter and receiver; technically speaking, it reduces feedback to the lowest point compatible with the system."

Everyone who publishes is exposed to criticism, but not in every medium feedback plays an important part. Often different forms of feedback like letters to the editor or a contribution to a web forum's discussion work as an outlet for the reader/viewer but have no further consequences. In the process of collaborative work, in contrast, feedback has some indispensable functions. To begin with, it gives the author a feeling as to whether his work is accepted or not and provides him with the appreciation he needs to go on. Secondly, it is also a part of the production process as every comment contributes to the publication.

In a wiki the way to give feedback exceeds by far the facilities of other media as anyone can actually refacture^{xxvii} the whole page, be it the comments or the previous edits. This might be the reason, why in wikis there is so little noise compared to forums. The changes made here are real and effective. The one who gives feedback is expected to have a better version in mind; otherwise his modifications are quickly reversed by other participants. Although this form of criticism is quite constructive and easier to accept than the often personally tinged attacks in e.g. an email, many people are afraid that their contributions might be changed by another person without them knowing why. This is a possible hindrance for participation and the handling of this new way of criticism will depend on whether people are willing to cope with it.

Social control by self-organisation

"[T]he manipulation of the media cannot be countered, however, by old or new forms of censorship, but only by direct social control, that is to say, by the mass of the people, who will have become productive."*xviii

For media production in order to become really emancipatory, it is necessary that the means of production, the media infrastructure, is controlled by the public. As mentioned before, this is the only way to prevent attempts to manipulate public opinion centrally. A publicly controlled medium, however, will need its own structures and rules of interaction to function. The important point is that these rules emerge from within the medium by using it. Furthermore, they are always subject to discussion and can be altered if they are found to be unnecessary. This discussion has to be lead within the community and should be open to all participating members in order to reflect all the concerns there are within a group.

The original wiki software by Cunningham^{xxix} was put under the GNU Public License (GPL)^{xxx}, which states that access to the program source is open to the public and any program derived from his software must also be under GPL. Many wiki clones follow this example. So the technology is public property. However, wikis, as subsystems of the internet, are dependent on the infrastructure the internet provides. This means, a wiki system is centrally hosted on a server and the person or organization controlling this server also ultimately has control over the wiki – they can just switch it off. Nevertheless, since the content of a wiki web is also free, there can be copies of the data base that are distributed all over the net.

As in any social community, within a wiki community there are rules emerging. These rules, which are sometimes explicitly written down in a wiki page, specify the codes of conduct that have evolved in the group. Since these rules come from within, they



are especially suited for the one community that uses a specific wiki. For example, the neutral point of view rule, which is thought to be neccessary in Wikipedia, might not be productive in a wiki community that is explicitly taking sides with respect to political issues. Although self-reflection and discussion of the rules produce some overhead in the work with wikis it is vital for the functioning of a community with egalitarian structure.

Of course, wikis are not free from unsocial behaviour. Vandalism is very easy. Sometimes it may be necessary for the functioning of the rest of the community, that these vandals are excluded for some time from the use of the wiki. In the bigger ones, like Wikipedia, there are a few users that have the right to ban certain IP addresses for some time. There is an ongoing discussion about the position of power of these administrators. Who becomes admin is discussed on a wiki page^{xxxi} and their actions are about^{xxxii}. monitored and also talked So administrators usually merely have the function of an executive organ of collectively found decisions. However, the respective discussion pages are often not too easy to find. That way, users are supposed to have a certain familiarity with the wiki community before participating in discussions; the casual visitor is more or less excluded. Yet, since there are no barriers of participation in principle this seems to be an acceptable practice even in the light of Enzensberger's criterion.

A political learning process

"Any socialist strategy for the media must, on the contrary, strive to end the isolation of the individual participants from the social learning and production process."

An emancipatory use of a medium must aim at the education of the masses. Experts should meet ordinary people and exchange their knowledge with them. By working together, the experts will of course also profit from the interaction in the way that they adapt their explanations and the topics they work on to the needs of the people. As well as this, by publishing in the public sphere, people will have to (re-)consider their positions in discussions with others. This means, their views will be guestioned and will have to be defended or refined. Moreover, the social issues that arise in a decentralized medium as described so far bring the need for organization. When this self-organization is proved to work within a community in the medium, people might try to apply it also in the physical world; that is, to act politically.

In the process of writing an article in a wiki, the exchange with the community is vital. So in addition to the knowledge one gains when composing one's own contribution, the process of learning will also continue when watching how the "seeded" article "evolves". Thinking about why changes were made and contacting the people making changes as well as editing other people's contributions leads to a deeper understanding of the topics. As these edits can be read by anyone, great care is often put into the work. "Wiki doesn't work in real time. People take time to think, sometimes days or weeks, before they follow up some edit. So what people write is generally well-considered."

The fact that wikis do work gives impressive evidence that collaborative work without restrictions can produce qualitatively high-standing work, even without incentives like money and competition. That is, there are alternative ways of social organization that do work within small (or large, but restricted to the virtual world) communities. The recognition of this might lead some people to take the organization of work in a wiki as a model that could succeed in the real world as well.

Conclusion

Facing the fact that Enzensberger wrote his article in 1970, it is amazing how farsighted his constituents are formulated. One could get the impression that he anticipated the development of the internet, in particular wikis. That those are often used by all kinds of NGOs and political and social movements to inform and organize their members all over the world seems to affirm his assumptions in a quite practical way.

Of course, a medium itself is a neutral thing. Whether a medium is used for negative or positive purposes depends on WHO uses the medium with WHICH intentions. But while a medium is being developed and even later when it is used, our society puts certain limitations on it that at least make it more difficult to adopt it for emancipatory aims. Concerning wikis those imposed barriers, be it technical, legal or psychological ones, are currently at a very low level, which makes it easier for people to learn, to participate and to create.

Today, the conflict about digital rights and free access to information plays a central role; participation in a wiki, and especially in Wikipedia, also is a voluntary decision to take sides in favour of freedom of information. This is a political act; it is IJE

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affecting the real world by keeping some more information in the public sphere.

References

- Baudrillard, J. (1981) Requiem for the media. Reprinted in: Noah Wardrip-Fruin and Nick Montfort (Eds.): The New Media Reader. MIT Press, Cambridge, London, 2003, 278-288.
- Berners-Lee, T., R. Cailliau, A. Luotonen, H. F. Nielsen, A. Secret. (1994): The World Wide Web. In: Communications of the ACM, 37(8):76-82.
- Brecht, B. (1932): The Radio as an Apparatus of Communication. Reprinted in: J. G. Hanhardt (Ed.): Video Culture. A Critical Investigation. Rochester: Studies Workshop Press, 1986, 53-56.
- Bush, V. (1945): As we may think. In: The Atlantic Monthly 176/1, 101-108.
- Capital Punishment (2004) <u>http://en.wikipedia.org/wiki/Capital_Punishment</u> 17.11.04.
- Enzensberger, H. M. (1970): Constituents of a Theory of the Media. Reprinted in: Noah Wardrip-Fruin and Nick Montfort (Eds.): The New Media Reader. MIT Press, Cambridge, London, 2003, 261-275.
- Kellner, D. (2004): Baudrillard: A New McLuhan? www.uta.edu/huma/illuminations/kell26.htm, 20.08.04.
- Kurzidim, M. (2004): Wissenswettstreit. c't 21/2004, 132-139.
- Leuf, B. and Cunningham, W. (2001): The Wiki Way. Addison-Wesley, Boston.
- Rilling, R. (2004): Internet. <u>http://www.rainer-</u> <u>rilling.de/texte/inkrit-internet.html</u>, 20.08.04.
- WhyWikiWorks (2004). <u>c2.com/cgi/wiki?WhyWikiWorks</u>, 20.08.04.
- Wiki (2004) <u>en.wikipedia.org/wiki/Wiki</u>, 20.08.04.
- WikiUserTypes (2004) <u>http://www.twiki.org/cgi-bin/view/Codev/WikiUserTypes</u>, 20.08.04.
- Wikipedia_talk:Administrators (2004) <u>en.wikipedia.org/wiki/Wikipedia_talk:</u> Administrators, 20.08.04.
- Wikipedia:Requests_for_adminship (2004) <u>en.wikipedia.org/wiki/Wikipedia</u> Requests_for_adminship, 20.08.04.

Proceedings of the symposium "Localizing the Internet. Ethical Issues in Intercultural Perspective" sponsored by Volkswagen*Stiftung*, 4-6 October 2004, Zentrum für Kunst und Medientechnologie (ZKM, Karlsruhe)

- ⁱ Wiki, 20.08.04.
- ⁱⁱ Leuf and Cunningham, 2001: cover
- iii c2.com/cgi/wiki
- ^{iv} www.wikipedia.org
- v swiki.gsug.org:8080/GSUG.1
- vi www.wiktionary.org
- ^{vii} www.jurawiki.de
- viii cf. e.g. WikiUserTypes, 22.08.04
- ^{ix} Bush 1945
- * Berners-Lee et al. 1994
- ^{xi} Kurzidim 2004
- xii Brecht 1932 :53
- xiii Baudrillard 1981
- xiv The following seven headings are quoted from Enzensberger 1970:269
- ^{xv} Enzensberger 1970:265
- ^{xvi} Wikipedia_talk:Administrators, 20.08.04.
- xvii Capital Punishment, 17.11.04
- ^{xviii} Enzensberger 1970:265
- xix Rilling 2004
- ^{xx} This may be a database or a file system.
- xxi Enzensberger 1970:261
- ^{xxii} Enzensberger 1970:268
- xxiii ibid., 266
- xxiv Leuf and Cunningham 2001:326f
- ^{xxv} WhyWikiWorks, 20.08.04.
- ^{xxvi} Enzensberger 1970:262
- ^{xxvii} Cunningham defined this term as "technical term for iterative adjustment based on new input." (2001:330)
- xxviii Enzensberger 1970:265
- xxix c2.com/cgi/wiki
- xxx www.gnu.org/copyleft/gpl.html
- ^{xxxi} Wikipedia:Requests_for_adminship, 20.08.04.
- xxxii Wikipedia_talk:Administrators, 20.08.04.



xxxiii Enzensberger 1970:267

xxxiv WhyWikiWorks, 20.08.04.