Оценка надежности интернет-информации

Assessment of the reliability of the information from Internet

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Статья посвящена выявлению и описанию возможных критериев достоверности интернет-информации. Наряду с таким критерием достоверности, как истинность информации, предложено оценивать ее правильность и конструктивность. Предложено также в качестве критерия достоверности рассматривать: 1) понимание информации ее автором; 2) интерпретацию приводимых фактов; 3) логические критерии и 4) методы получения информации источником.

Информация является необходимым условием общественных отношений.

Оригинальность работы заключается в разработке и внедрении инструмента, который позволяет выявить несоответствия между декларативными данными и данными, близкими к решениям, принимаемым на практике.

Необходимо различать критерии надежности по содержанию и происхождению и отделить вопросы надежности информации от вопросов доступности и удобства использования информации.

Интернет — это сложная саморегулирующаяся система. Поскольку бремя поиска и оценки информации зависят от знаний, опыта и навыков пользователя, это исследование тщательно и комплексно исследует опыт пользователей Интернета.

Точно так же Интернет создает серьезные и неожиданные проблемы для заинтересованных сторон. К ним относятся среднестатистические потребители, которые самостоятельно извлекают необходимую информацию для принятия решений в среде, которую сложно освоить и не всегда безопасно.

Интернет постоянно расширяет природу и объем традиционных информационных систем. В таких системах качество информации оценивается и контролируется организацией. Например, качество баз данных охраняется предприятием, а качество новостей контролируется редакторами до их публикации. Интернет, напротив, представляет собой нерегулируемую глобальную систему, которая не контролирует качество своих данных. Люди используют его, потому что он предлагает множество преимуществ, включая доступ к крупнейшему централизованному источнику информации, общение в режиме реального времени с глобальной аудиторией и возможность практически бесплатной публикации.

Ключевые слова: достоверность, истинность, правильность, конструктивность.

The article is devoted to identifying and describing possible criteria of the reliability of Internet information. Along with such a criterion of reliability as the truth of information, it is proposed to evaluate its correctness and constructiveness. It is also proposed to consider as a criterion of reliability: 1) understanding of information by its author; 2) interpretation of the facts presented; 3) logical criteria and 4) methods of obtaining information by the source.

The originality of this work is the design and implementation of a tool that allows approaching the inconsistencies between declarative data and data close to the decisions made when in action.

In so doing, we argue that we need to distinguish content and pedigree criteria of reliability and that we need to separate issues of reliability of information from the issues of the accessibility and the usability of information.

The Internet is a self-regulating complex system in which users decide what is relevant through their actions. Since the burden of locating and evaluating information depends on knowledge, experience, and skill, this study rigorously and holistically investigates the Web users' experience.

Similarly, the web poses profound and unexpected challenges to stakeholders. These include average consumers who are left to their own devices to extract needed information for decision making in an environment that is difficult to master and not always safe (Internet Safety Resources, 2013).

The Internet has continuously been expanding the nature and scope of traditional information systems. In such systems, the quality of information is evaluated and controlled by the organization. For example, the quality of databases is guarded by the enterprise, and news quality is regulated by gatekeepers before it is published. The Internet, in contrast, is an unregulated global system that exerts no control over the quality of its data. People use it because it offers many advantages including access to the largest centralized source of information, real-time communication to global audiences and the ability to publish at almost no cost. Professionals, who had been working thus far independently in their own disciplines, are finding themselves sharing the

same web space with others. This raises the broader issue of whether a unification of knowledge would prove useful and, at the same time, help to better understand and utilize the medium.

Keywords: *reliability, truthfulness, correctness, constructiveness.*

> *Usually, when we search for information, we focus on the amount of information received. However, not quantity, but reliability of information is its most important characteristic.*

The relevance of research. Relevance of the problem

Almost everyone is on the Internet almost every day. Unlike paper editions, which pass through at least some "filters", authorship on the Internet is available to everyone. Because "learning is light and ignorance is darkness" in the variety of Internet information, most of it is unreliable. Due to that reason, the problem of distinguishing reliable information from unreliable has become extremely relevant.

In accordance with Hovland et al.'s (1953) definition of credibility, the credibility of websites depends on their expertise and on the degree of confidence granted by the user. Websites collect user information for various purposes [1]. Among others, personal information is used for advertising, and is shared or sold with third parties. An aspect of being trustworthy is to explain to users via privacy policies how this information will be handled, to extend users choices regarding how their information is to be treated, and to honor these preferences. Until recently, many users have been less concerned about privacy [2]. This may have changed due to the Edward Snowden revelations and the awareness of NSA practices. The survey data for this study reflects the views of the pre-Snowden era.

A bright example of the importance of assessing the reliability of information is the problem of the occurrence of COVID-19, otherwise humanity may face COVID-26 and COVID-32, Peter Hotez, an American expert on coronavirus and infectious diseases in the United States, said on Monday, May 31, on NBC News. Earlier, on May 26, US President Joe Biden instructed US intelligence services to "double efforts" in finding the source of the coronavirus.

On May 20, the US House of Representatives Intelligence Committee reported "circumstantial evidence" of data that the leak of a new type of SARS-CoV-2 coronavirus originated from the Wuhan Institute of Virology. China called such a theory slander and conspiracy. A statement from the country's embassy in Washington noted that "some political forces have tried to manipulate and blame from the very beginning of the pandemic.''

Methods and methodology of the study

The research methods are system analysis, content analysis of Internet sources, statistical research methods.

Results of the study
Reasons of the appearance unreliable information

The worldwide system of united computer networks, the Internet, is growing exponentially — every year the number of users is growing by 30—50%. At the same time, even the same facts and statistical data are interpreted differently, which leads to the appearance of unreliable information. It seems that the main reasons for the appearance unreliable information are the following: 1) misunderstanding of the essence of the problem — unintentional creation of a fake, for example, due to the natural obsolescence of information; 2) intentional creation and/or distribution of false information [3].

Reliability as truth, correctness and constructiveness

To assess the reliability of information found on the Internet, we usually strive to evaluate its Internet source by its reputation, commitment, and competence. But often this is not enough, because it does not guarantee reliability. A description of what else can be used to increase the possibility of obtaining reliable information is the subject of this publication [4]. However, we will start by defining the basic concepts used.

Among the large number of properties of information (relevance, completeness, accuracy, security, etc.), **reliability** of information takes a special place. Information on any issue can be as complete and relevant, but if it is unreliable, then it is practically useless and moreover, misleading, harmful [5].

Reliability is usually understood as truth. **Truth** is a characteristic of our judgments about really existing objects, phenomena and processes from the point of view of the correspondence of their content to these objects.

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But the truth is not a characteristic of all the judgments that we express every day. Only specific ***judgments-statements*** can be true or false: "Green grass", "Salt salt", etc. At the same time, from the point of view of truthfulness, ***general*** judgments-statements like "People are kind" cannot be evaluated, because truth is the correspondence of the content of a judgment to its object. And the object "people" does not exist, there are only separate "humans". Both kind and not so kind [6].

Along with judgments-statements, practically every Internet text contains ***judgments-prescriptions***: "Pay taxes", "Give way to the obstacle on the right", "If you want to be happy, be happy", which can also be neither true nor false. But they can be **correct**, i.e. compliant to the rules, or wrong — if do not comply to the rules. So the first judgment-prescription corresponds to the legislation, the second — to the traffic laws, and for the third there are no rules [7].

But right and wrong judgments-prescriptions can be ***constructive***, consequently, they can make it possible to create something new and practically useful, or not to be so. Therefore, it is proposed to consider its constructiveness as another representative (sign) of the reliability of information. *It is proposed to understand the reliability of information as its truthfulness, correctness and constructiveness. [8]*

Assessing reliability as truthfulness

Such an assessment, as already mentioned, is applicable only to those judgments that assert (or deny) something about objectively existing objects, phenomena and processes in nature, society and "second nature" (technical, sign and other man-created systems) [9].

The Internet is full of articles like "X designed a perpetual motion machine," "Y built a time machine," "Physicists proved the existence of God", etc. And at a time of declining scientific literacy, texts of this kind find their readers and admirers: learning is light and ignorance is darkness... But back in 1741, Robert Mayer formulated the law of conservation and transformation of energy, and since 1765 the French Academy of Sciences stopped accepting any ***Perpetuum Mobile*** projects for consideration. In 1905, A. Einstein created the special theory of relativity, the consequence of which is the understanding that time does not exist as an objective reality — there is a material world, the variability of which is time.

Science is the most reliable, but not easily accessible mean of assessing the truthfulness of the information. The principles and methods of science are initially aimed at obtaining guaranteed true knowledge. And if the Internet information contradicts the laws of science, then it is deliberately false.

Assessment of the correctness of Internet information

Correctness in the literal sense of the term is compliance with the rules. It is important to emphasize that only *judgments-regulators*, and not *judgments-statements* can be correct or incorrect, if there are any rules in relation to them. Due to the fact that any information exists in the form of concepts, judgments and inferences, which logic studies as forms of thinking, the most general criteria for assessing the correctness of information are logical laws and rules: the law of consistency, the law of the excluded middle, the law of sufficient reason, the rules of syllogism, etc. For example, the law of consistency says: two judgments incompatible with each other cannot be simultaneously true; at least one of them is false [10]. However, in contradictions as a unity of two opposites, one should distinguish between pithy and formal-logical opposites. Pithy, the objectively existing opposite to white is black, and the formal-logical, existing only in our imagination — "non-white", which really does not exist by itself, but in the form of red, blue, etc. And the information that contains formal logical contradictions is incorrect [11].

Internet information often contains reasoning ending in conclusions. To determine the correctness of this type of information, it is necessary, especially strict, vague reasoning, to compare with the types of logical inferences: inductive, deductive, inference by analogy, remembering that if the premises are true, only deduction necessarily leads to a true conclusion.

Other numerous rules can be used as criteria for assessing the correctness of Internet information. Therefore, the expression 2 + 2 x 2 = 8 is incorrect, because it violates the rule of the sequence of arithmetic operations, according to which multiplication and division are performed first, and only then addition and subtraction. Correct: 2 + 2 x 2 = 6.

Assessment of the constructiveness of Internet information

Any true information can be constructive, i.e. allowing creating something new and practically useful. But not all constructive information has a truth value. The truth of some judgments is difficult to establish even for a scientist and even more for an ordinary Internet user. Therefore, it is relevant and useful to assess the reliability of Internet information through its constructiveness. The theoretical basis for this is the well-known statement

of practice as a criterion of truth. At the same time, it is extremely important to interpret constructiveness not as a subjective usefulness, but as a real opportunity to use the information found to create something new and useful [12].

Understanding information as a criterion for its reliability

We may or may not understand texts (speech, writing, images) and phenomena of objective reality (nature phenomena, social processes, technical devices, etc.). Understanding a text is a reconstruction of the meaning put into it by the author. Of course, understanding complex texts requires a good theoretical background. But very often we do not understand even simple Internet texts. This should be alarming and give rise to the question "Is there any semantic content in the text? Does the author himself understand that he is telling?". Who understands, that understands that he understands. The one who does not understand even does not understand that he does not understand. Understanding begins from the moment when you begin to understand that you misunderstand something.

Facts and their interpretation

Facts are usually understood as either real events (objects, phenomena, processes), or their true descriptions. In science, facts are understood as true descriptions of events, if the evens would be understood as facts, then history as a science would be generally impossible.

In the general, the reliability of the facts is indicated by: 1) the presence of a description of the time, place and circumstances of their accomplishment; 2) the concreteness of their description; 3) the consistency of their presentation; 4) comparison of various sources of their receipt.

False interpretation of facts is likely if: 1) only isolated facts are presented; 2) only facts are presented that confirm only one point of view; 3) some of the presented facts are doubtful; 4) only facts are presented that confirm the expectations of their sender.

Logical criteria for assessing the reliability of information

Logic is the science of the forms of thinking. A person cannot think otherwise than in the form of concepts, judgments and inferences. The concepts capture the essential distinctive properties of objects, processes and phenomena. Judgment is the connection of two or more concepts. Inference is a connection of judgments, leading to the formulation of a new judgment. This chain will make sense if the initial concepts are defined. The absence of at least implicit, sketchy definitions in the Internet text is an indicator (indicator) of its non-constructiveness.

The presence of contradictions, as a unity of two opposites, is also a logical indicator of the lack of constructiveness and, consequently, the unreliability of Internet texts. But there are two types of contradictions: pithy and formal-logical. Pithy — inherent in the most objective reality, the world is contradictory in its nature and formal-logical. Let us explain the difference. The pithy contradiction to white is black: we see white, which emits or reflects the entire spectrum of electromagnetic radiation visible to the human eye; black — that which does not emit or reflect anything. In this sense, black and white exist objectively. Formal-logical, existing only in our minds and speech, the opposite of white is "non-white", which objectively does not exist by itself, but only in the form of red, blue, etc. [13—17]. The presence of pithy contradictions in the Internet text indicates an adequate understanding by the author of the nature of the world, the presence of formal-logical serves as an indicator of its unreliability.

Conclusion

Reliability of information and methods of obtaining it

The reliability of information largely depends on the methods of obtaining it.

Practically all forms of social consciousness generate information: mythology, religion, literature, art, politics, ideology, economics, technology, science. However, obtaining information in various forms of public consciousness is carried out based on different initial principles and methods.

In science — the principle of the concreteness of truth: among an infinite number of non-identical judgments about the same object, there can be no more than one true. In fiction: everyone has his or her own truth.

Not all reliable information is obtained by scientific methods, but information obtained by scientific methods, usually, is reliable.

Transparency is a good way to instill credibility. Trustworthy websites disclose their purpose and expertise to visitors; provide information about their owners, sponsors, contributors; and post the sources and currency of their articles. They also let users know what is fact and what is opinion including possible bias. They instruct users about their policies in an understandable way. Besides traditional content providers, user-generated con-

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tent has carved itself into the public discourse. Amateur writers share their experiences with others through blogs. Since some of these algorithms are open source, this technology will benefit the ones who cannot effectively know what information is hiding in piles of databases. The dilemma will ensue when the quality of stored information that has not been thoroughly vetted starts appearing on the Web in great quantities.

Список литературы

1. Большаков С. Н. О стратегии безопасности и гибридных угрозах: выбор внешнеполитических ориентиров Латвии, Эстонии и Финляндии // Региональная информатика и информационная безопасность : сборник трудов XVI Межд. конф. «Региональная информатика — 2018». Вып. 5. СПб.: СПОИСУ, 2018. С. 193—197.

2. Большаков С. Н. Стратегии и модели развития образовательной системы в странах ЕС // Сборник статей международного постоянно действующего научно-практического семинара «Век Информации». СПб.: СПБГУ, ВШЖиМК, 2013. С. 18—21.

3. McQuail A. Mass Communication Theory. 6th Ed. Sage Publications Inc. Thousand Oaks, CA. 2010. 410 p.

4. Большаков С. Н., Большакова Ю. М. Тенденции развития информационного пространства Рунета // Экономика и политика. 2014. № 1. С. 38—43.

5. Agarwal N., Yiliasi Y. Information Quality Challenges in Social Media // Proceedings of the 15th International Conference on Information Quality. 2010. Pp. 275—289.

6. Batini C., Scannapieco M. Data Quality: Concepts, Methodologies and Techniques. Springer Berlin. Heidelberg. New York. 2006. 240 p.

7. Canali D., Balzarotti D., Francillon A. The Role of Web Hosting Providers in Detecting Compromised Websites // Preprint of article accepted for publication in WWW'13. 2013. Pp. 1—11.

8. Eppler M. J., Münzenmayer P. Measuring Information Quality in the Web Context: A Survey of State-of-the-Art Instruments and an Application Methodology // Proceedings of the 7th International Conference on Information Quality. 2002. Pp. 187—196.

9. Yue C. Preventing the Revealing of Online Passwords to Inappropriate Websites with LoginInspector // Proceedings of the 26th Large Installation System Administration Conference (LISA). 2012. Pp. 68—81.

10. Иванова С. М. Оценка достоверности информации, найденной в сети Интернет // Преподаватель XXI век. 2015. № 4. С. 54—60. URL: https://cyberleninka.ru/article/n/otsenka-dostovernosti-informatsii-naydennoy-v-seti-internet. (дата обращения: 21.06.2021).

11. Никифоров В. Е. Достоверность информации и Fake News // Открытый город. 2020. № 2. С. 38—40.

12. Kargar M., Azimzadeh F., Ramli A. An Experimental Framework for Ranking Quality of Information on Weblog // Proceedings of the 13th International Conference on Information Quality. 2008. Pp. 1434—1444.

13. Kimberlin C. L., Winterstein A. G. Validity and Reliability of Measurement Instruments Used in Research // American Society of Health-System Pharmacists. Inc., 2008. Vol. 65. Pp. 2276—2284.

14. Klein B. D. When Do Users Detect Information Quality Problems on the World Wide Web? // Proceedings of the 8th Americas Conference on Information Systems, 2002. Pp. 1101—1103.

15. Rieh S. Judgement of Information Quality and Cognitive Authority in the Web // Journal of the American Society for Information Science and Technology. 2002. Vol 53. № 2. Pp. 145—161.

16. Рекомендации по оцениванию надежности интернет-ресурсов [Электронный ресурс] // URL: http://www.pandia.ru/text/78/22 7/92345.php. (дата обращения: 21.06.2021).

17. Vedder A., Wachbroit R. Reliability of Information on the Internet: Some Distinctions // Ethics and Information Technology 2003. № 5. Pp. 211—215.

References

1. Bolshakov S. N. On the security strategy and hybrid threats: the choice of foreign policy guidelines for Latvia, Estonia and Finland. *Regional`naya informatika i informacionnaya bezopasnost`. Sbornik trudov 16 mezhdunarodnoj konferencii «Regional`naya informatika — 2018»* [Regional informatics and information security. Proceedings of the 16th International Conference "Regional Informatics-2018"]. Issue 5. SPb.: SPOISU, 2018, pp. 193—197. (In Russian).

2. Bolshakov S. N. Strategies and models for the development of the educational system in the EU countries. *Sbornik statej mezhdunarodnogo postoyanno dejstvuyushhego nauchno-prakticheskogo seminara «Vek Informacii»* [Collection of articles of the international permanent scientific and practical seminar "The Age of Information"]. St. Petersburg: St. Petersburg State University. VSHiMK, 2013, pp. 18—21. (In Russian).

3. McQuail A. *Mass Communication Theory*. 6th Ed. Sage Publications Inc. Thousand Oaks, CA. 2010. 410 p.

4. Bolshakov S. N., Bolshakova Yu. M. Trends in the development of the information space of the Runet. *E`konomika i politika* [Economics and politics], 2014, no. 1, pp. 38—43. (In Russian).

5. Agarwal N., Yiliasi Y. Information Quality Challenges in Social Media. *Proceedings of the 15th International Conference on Information Quality,* 2010, pp. 275—289.

6. Batini C., Scannapieco M. *Data Quality: Concepts, Methodologies and Techniques*. Springer Berlin. Heidelberg. New York, 2006. 240 p.

7. Canali D., Balzarotti D., Francillon A. The Role of Web Hosting Providers in Detecting Compromised Websites. *Preprint of article accepted for publication in WWW'13,* 2013, pp. 1—11.

8. Eppler M. J., Münzenmayer P. Measuring Information Quality in the Web Context: A Survey of State-of-the-Art Instruments and an Application Methodology. *Proceedings of the 7th International Conference on Information Quality*, 2002, pp. 187—196.

9. Yue C. Preventing the Revealing of Online Passwords to Inappropriate Websites with LoginInspector. *Proceedings of the 26th Large Installation System Administration Conference (LISA),* 2012, pp. 68—81.

10. Ivanova S. M. Assessment of the reliability of information found on the Internet. *Prepodavatel` XXI vek* [Teacher of the XXI century], 2015, no. 4, pp. 54-60. Available at: https://cyberleninka.ru/article/n/otsenka-dostovernosti-informatsii-naydennoy-v-seti-internet. (accessed 21.06.2021). (In Russian).

11. Nikiforov V. E. Reliability of information and Fake News. *Otkry`ty`j gorod* [Open City], 2020, no. 2, pp. 38—40. (In Russian).

12. Kargar M., Azimzadeh F., Ramli A. An Experimental Framework for Ranking Quality of Information on Weblog. *Proceedings of the 13th International Conference on Information Quality,* 2008, pp. 1434—1444.

13. Kimberlin C. L., Winterstein A. G. Validity and Reliability of Measurement Instruments Used in Research. *American Society of Health-System Pharmacists. Inc.,* 2008, vol. 65, pp. 2276—2284.

14. Klein B. D. When Do Users Detect Information Quality Problems on the World Wide Web? *Proceedings of the 8th Americas Conference on Information Systems,* 2002, pp. 1101—1103.

15. Rieh S. Judgement of Information Quality and Cognitive Authority in the Web. *Journal of the American Society for Information Science and Technology,* 2002, vol 53, no. 2, pp. 145—161.

16. *Rekomendacii po ocenivaniyu nadezhnosti internet-resursov* [Recommendations for assessing the reliability of Internet resources]. Available at: http://www.pandia.ru/text/78/22 7/92345.php. (accessed 21.06.2021). (In Russian).

17. Vedder A., Wachbroit R. Reliability of Information on the Internet: Some Distinctions. *Ethics and Information Technology,* 2003, no. 5, pp. 211—215.

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