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Bodnar B.E., Kosolapov A.A., Loboda D.G.

WEBOMETRICS RESEARCH. RECOMMENDATIONS TO IMPROVE THE RANKING UNIVERSITY SITE

Annotation. Investigated four methods of forming rankings Websites. Formulated recommendations on the organization and content filling of the site, which will increase their popularity in educational and scientific fields.

Keywords: webometrics, the site of the University, higher ratings, recommendations.

Formulation of the problem

In the course of the global informatization of society, universities and research organizations exist in two forms: in real life off-line and in the virtual world, Web Internet - on-line. In this case, the scope of decision-making when choosing the university entrants, employers in the selection of young professionals, academic staff in selecting areas of research and evaluation of their results is shifted to the virtual area (on-line). Under these conditions, the efficiency of universities and research institutions in terms of their contribution to the world scientific and educational space is estimated by multiple ratings. Webometric rating reflects quantitative aspects of the design and use of information resources, structures and technologies as applied to the World Wide Web [1,2,3].

There are a large number of ratings that are related to various aspects of scientific and educational activities, they are constantly changing and give different results in the positioning of universities. In the process of implementing the new law on education in Ukraine there is the problem of forming their national indexes, standardization and alignment with international rating methodologies.

Analysis of publications

Webometrics notion was first introduced in 1997 [1]. In the mid-90s spanish company Cybermetrics Lab began to engage webometric research and ranking websites universities in the world in three main areas: - the development and use of web-indicators (citation indexes, observability sites in search engines); - Analysis of hyperlinks (in particular, the relationship between sites of universities and research institutions); - Collect data on the Web (search engines, information retrieval etc.).

As a result, was formed one of the largest databases of university rankings Webometrics, which now includes more than 48,000 domains of universities and research organizations in the world [2,3]. In parallel, were created other metrics: one of the most famous rankings of the best universities of the world - QS 100 [4], a worldwide ranking of universities reputation [5], the Shanghai Academic Ranking of World Universities in 2014 [6], the ratings of Russian Universities [7,8,9], the ratings of Belarusian Universities [10], the national ratings of Ukrainian universities [11,12], ratings research organizations [13].

The purpose of article, formulation of the problem

The purpose of this article is to create a set of recommendations to improve the rankings of web-resources of the University in a multi-variant techniques and dynamic development of Webometrics and show the need to develop set of problem-oriented national ratings (including Webometrics) in the framework of the new education law.

To study the webometric marks performed a comparative analysis of four methods: Webometrics ranking, RAO webometric index, RA BSU rating, RIAN transparency rating.

Basic material

Webometrics, proposed by the Spanish laboratory Cybermetrics, is one of the most respected in the world rankings webometric [2,3]. Based on 4 indicators: Size (S - total number of pages of site of high school), Visibility (V - the number of unique external links to pages from other websites), Rich files (R - the number of full-text files formats .pdf, .ppt, .doc posted on this site), Scholar or citation (Sc - number of articles published on the website and their citations, found with the aid of scientifically oriented search engine Google Scholar). The formula for calculating the resulting value (Q):

$$Q = 4 \times V + 1,33 \times S + 1,33 \times R + 1,33 \times Sc,$$

(This is not quantitative values are summed, but places a particular university in the rankings for each of the four indicators rating).

Webometric index developed by the method of the Russian Academy of Education (RAO) is used to calculate the same 4 indicators that Webometrics [8,9]. However, for references and pages are used other search systems, citation is determined by the RSCI (Russian Science Citation Index), and total formula have not weight coefficients.

RA BSU (rating agency, Belarusian State University) Webometric rating uses a number of indicators that fold into 2 microindexes [10] - The quality of the content (C), and Quality of execution, implementation (R). Microindex C reflects accommodation online information related to faculties, departments and the university as a whole; educational services; services and products to the scientific sector; social, cultural

and social aspects; vacancies. Also, this index includes the presence of high-quality English-language version of the site and electronic resources. Mikroindeks R characterizes the performance level of the site (structuring, design, ease of navigation, operation elements). The general formula for calculating the rating is as follows:

$$Q = C + R + W,$$

(Microindex W is calculated by the method of Webometrics, but with the summation values of the indicators, not their places in the rankings for each criterion).

Transparency websites rating designed by RIAN (state information and analytical agency of the Russian Federation), covers a list of indicators that characterize the degree of openness of the university site for the enrollee [7]. Such indicators allow for placement on the website the following information: a list of directions and specialties, admission rules, list of entrance examinations, the number of budget and paid places in each direction, the cost of training, benefits for the winners of the competitions, the minimum mark on the entrance tests, information about hostels, contacts and time of the selection committee, statistics acceptance of previous years, the electronic form of submission of applications. The calculation formula is the sum of points that are assigned to each indicator in the case of the presence on the site.

In the course of the study were drawn webometric rankings of universities of Dnipropetrovsk based on 4 listed techniques as of 01/12/2013 (see. Table 1).

Table 1 – Webometric indicators of universities of Dnipropetrovsk

Webometrics		Webometric index RAO		RA BSU rating		RIAN rating	
<i>Academy</i>	<i>Place</i>	<i>Academy</i>	<i>Place</i>	<i>Academy</i>	<i>Place</i>	<i>Academy</i>	<i>Place</i>
DNU	1	NGU	1	NGU	1	DNU	1
NGU	2	DNU	2	DNU	2	DNURT	2*
USUCT	3	DSMA	3	DUEL	3	PSACEA	2*
NMAU	4	DNURT	4	DNURT	4	USUCT	2*
DSMA	5	* - sites of these universities have the same total score					
DNURT	6						

The results show that all methods give different ratings, indicating a need for standardization in view of features of education and science in the world. For example, the Moscow State University is in the top 100 universities in the world and occupies 84th place in the Shanghai Academic Ranking [6] and the 54th by reputation rating of the universities of the world [5]. Unfortunately, none of the universities of Ukraine is not included in the top 100 in the world.

During the analysis webometric indicators used in the calculations of presented techniques have been developed a number of recommendations to improve the DNURT site's ranking:

1) Provide constant updating of the site.

2) It is necessary to fully expand the information content of the site. Basic steps in order to fulfill this task, the following:

- post general information about the university (preferably on the home page);

- post information about the university disciplines in the pages of all departments or faculties;

- create personal pages of university teachers;

- post more research papers, electronic versions prepared in university and defended dissertations; publish the results of research with practical application;

- place the retrospective materials, including historical information, video and photo reports;

- convert electronic resources to formats .pdf-, .doc- and .ppt, that will improve the value of the indicator "Rich Files" used in the methods of webometric calculations;

- post information about cultural and social aspects of development of the university;

- fill the site with information concerning the future employment of graduates (university vacancies, distribution, career opportunities, types of passing industrial practice);

- create a community of graduates.

3) Necessarily extend the language versions (especially tailor a site in the English version). The information resources that should primarily be in English include: general information about the university, data on the main divisions of the university and contact information, educational services for foreign citizens, the main directions of research and results, scientific publications.

4) Improve the quality of the site: to improve the navigation system (to organize working properly "Search" and create a "Map of site"); improve the visual perception of pages (preferably one design style).

5) Organize means of feedback in the form of questions and answers: consultations (for example, about university admission), forums (students communication, to conduct scientific internet conferences etc).

6) To increase the transparency of the site is necessary to place the electronic form application and full information about the conditions of the hostel.

Working with these recommendations has improved the rating indicators of the university. In particular, by the new MES rating (informative site ranking) DNURT occupied 10-11 place with Taras Shevchenko National University of Kyiv, ahead of such grants as KPI, CMA, NAU, KNU.

Conclusions.

The investigations have shown that in the virtualization of educational processes and research increasing the role webometric indices that provide an integrated assessment of the effectiveness of educational and scientific activities of the university.

There are dozens of international, national, departmental, university rankings, which are based on different indicators of site and give different results. This is confirmed by the city rankings calculated by the four indices.

Methodology for determining the rankings are constantly changing, perfected depending on the development of web services.

Under these conditions, a clear need webometrics standardization, for example at the level of the Ministry of Education and Science of Ukraine, linking them with international indices. For this research it is necessary to develop a set of problem-oriented methodologies for assessing levels (ratings) of educational and scientific web resources of Ukraine.

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