Olga Karpenko (Modern University for the Humanities, Moscow) Margarita Bershadskaya (Research University - Higher School of Economics, Moscow)

WEBOMETRICS RANKING: THE DYNAMICS OF NETWORK ACTIVITY OF WORLD UNIVERSITIES

The openness of information on achievements in educational and research activities of world universities in modern conditions is of paramount importance not only for the modernization of education, but also in the context of financial constraints related to the economic crisis. The main ideas which have been initially put in Webometrics Ranking is the information exchange. All these important indices have led to notable results which we recorded in the analysis of the dynamics of network activity of universities, particularly universities of Russia. We also consider a new aspect of leadership of higher education systems of countries - not only for individual universities- leaders, but for the full range of universities in the system. Taking into account the magnitude of the higher education system, Russia for the first time comes to leading positions
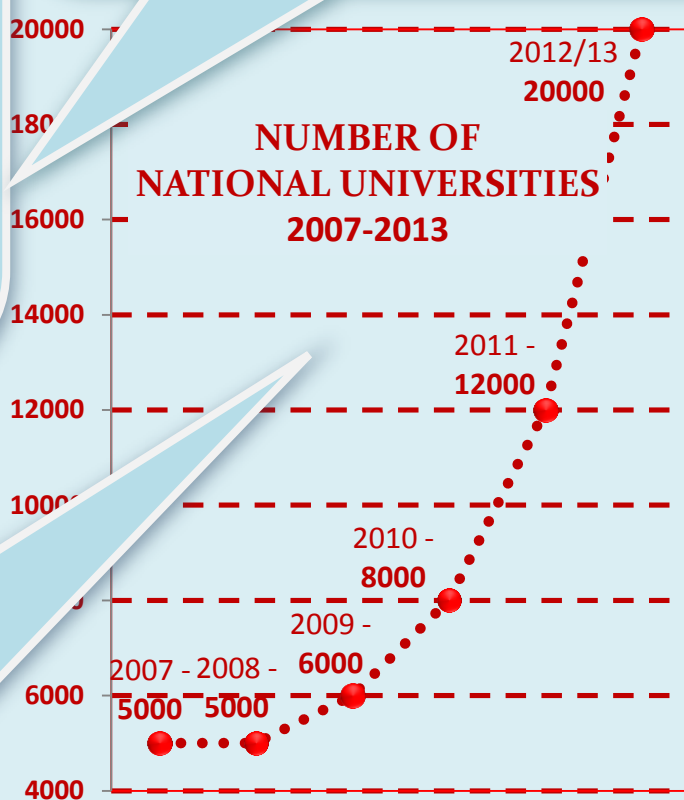
A NEW ASPECT OF LEADERSHIP

For the first time there appeared the opportunity to compare the systems of higher education of the countries not only by individual institutions-leaders, but by all the body of universities making the system.

NUMBER OF NATIONAL UNIVERSITIES AMONG SEVERAL THOUSAND WORLD BEST UNIVERSITIES IS THE INDICATOR OF SCALE OF HIGHER EDUCATION

FEATURES OF THE RATING WIDE COVERAGE OF UNIVERSITIES, THE TRANSPARENCY OF THE RESULTS

ADVANCED OPPORTUNITIES OF DEVELOPMENT OF UNIVERSITIES

Practically each university of the world has an opportunity on the basis of the analysis of the rating results to reveal their strengths and weaknesses and adjust the educational and research

NUMBER OF NATIONAL UNIVERSITIES 2007-2013

2012/13
20000

2011 -
12000

2010 -
8000

2009 -
6000

2007 - 2008 -
5000   5000

20000
180
16000
14000
12000
100
6000
4000

1

WEBOMETRICS RANKING INDICATORS

2004-2011

VISIBILITY (weight 50%)

the total number of unique external links received by a site from Yahoo Search

SIZE

(weight 25% in 2004-08, 20% in 2009)
number of pages recovered from four engines: Google, Yahoo, Live Search and Exalead

RICH FILES

(weight 12,5% in 2004-08, 15% in 2009)
the availability of different file formats such as Adobe Acrobat (.pdf), Adobe PostScript (.ps), Microsoft Word (.doc) and Microsoft Powerpoint (.ppt)

SCHOLAR

(weight 12,5% in 2004-08, 15% in 2009)
the number of papers and citations for each academic domain provided by Google Scholar. These results from the Scholar database represent papers, reports and other academic items.

2012-2013

VISIBILITY (50%)

IMPACT (weight 50%)

THE QUALITY OF THE CONTENTS IS EVALUATED THROUGH A "VIRTUAL REFERENDUM", COUNTING ALL THE EXTERNAL INLINKS THAT THE UNIVERSITY WEBDOMAIN RECEIVES FROM THIRD PARTIES. THE LINK VISIBILITY DATA IS COLLECTED FROM THE TWO MOST IMPORTANT PROVIDERS OF THIS INFORMATION: MAJESTIC SEO AND AHREFS

ACTIVITY (50%)

PRESENCE - 1/3 (weight 16,67%)

THE TOTAL NUMBER OF WEBPAGES HOSTED IN THE MAIN WEBDOMAIN (INCLUDING ALL THE SUBDOMAINS AND DIRECTORIES) OF THE UNIVERSITY AS INDEXED BY THE LARGEST COMMERCIAL SEARCH ENGINE (GOOGLE). IT COUNTS EVERY WEBPAGE, INCLUDING ALL THE FORMATS RECOGNIZED INDIVIDUALLY BY GOOGLE, BOTH STATIC AND DYNAMIC PAGES AND OTHER RICH FILES.

OPENNESS - 1/3 (weight 16,67%)

THE GLOBAL EFFORT TO SET UP INSTITUTIONAL RESEARCH REPOSITORIES IS EXPLICITLY RECOGNIZED IN THIS INDICATOR THAT TAKES INTO ACCOUNT THE NUMBER OF RICH FILES (PDF, DOC, DOCX, PPT) PUBLISHED IN DEDICATED WEBSITES ACCORDING TO THE ACADEMIC SEARCH ENGINE GOOGLE SCHOLAR THE OBJECTIVE IS TO CONSIDER RECENT PUBLICATIONS THAT NOW ARE THOSE PUBLISHED BETWEEN 2008 AND 2012 (NEW PERIOD).

EXCELLENCE - 1/3 (weight 16,67%)

THE ACADEMIC PAPERS PUBLISHED IN HIGH IMPACT INTERNATIONAL JOURNALS. THE INDICATOR IS RESTRICTED TO ONLY THOSE EXCELLENT PUBLICATIONS, I.E. THE UNIVERSITY SCIENTIFIC OUTPUT BEING PART OF THE 10% MOST CITED PAPERS IN THEIR RESPECTIVE SCIENTIFIC FIELDS. ALTHOUGH THIS IS A MEASURE OF HIGH QUALITY OUTPUT OF RESEARCH INSTITUTIONS, THE DATA PROVIDER SCIMAGO GROUP SUPPLIED NON-ZERO VALUES FOR MORE THAN 5200 UNIVERSITIES (PERIOD 2003-2010)

THE SCALE OF NATIONAL HIGHER EDUCATION SYSTEMS

WHEN ANALYZING THE RESULTS OF WEBOMETRICS WE HAVE REPEATEDLY STRESSED, THAT AMONG A LARGE NUMBER OF UNIVERSITIES BEING RANKED, THE NUMBER OF NATIONAL UNIVERSITIES WHICH WERE INCLUDED INTO THE CATEGORY OF THE BEST UNIVERSITIES OF THE WORLD IS BECOMING AN IMPORTANT INDICATOR CHARACTERIZING THE SYSTEM OF HIGHER EDUCATION OF THE COUNTRY.

STARTING WITH JANUARY 2012, WEBOMETRICS RANKS 20,000 UNIVERSITIES OF THE WORLD. SUCH SCALE OF STUDIES IS PRESENTED FOR THE FIRST TIME.
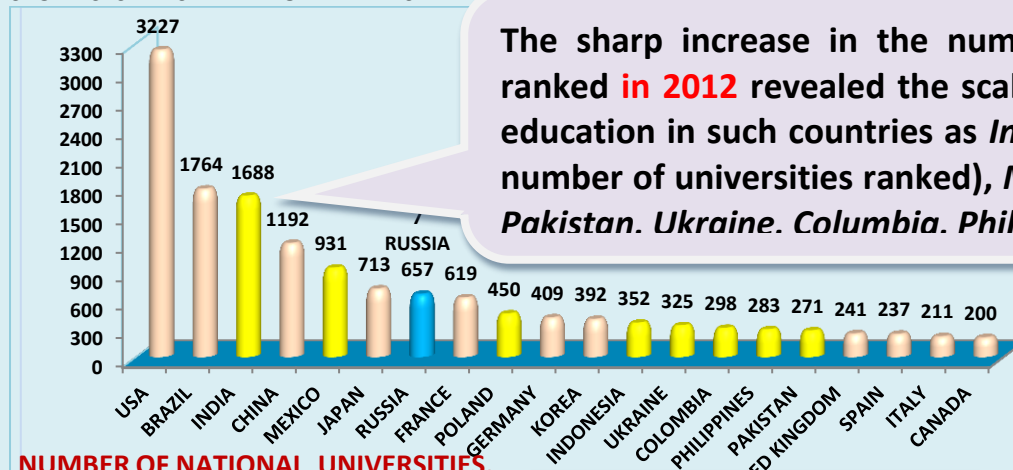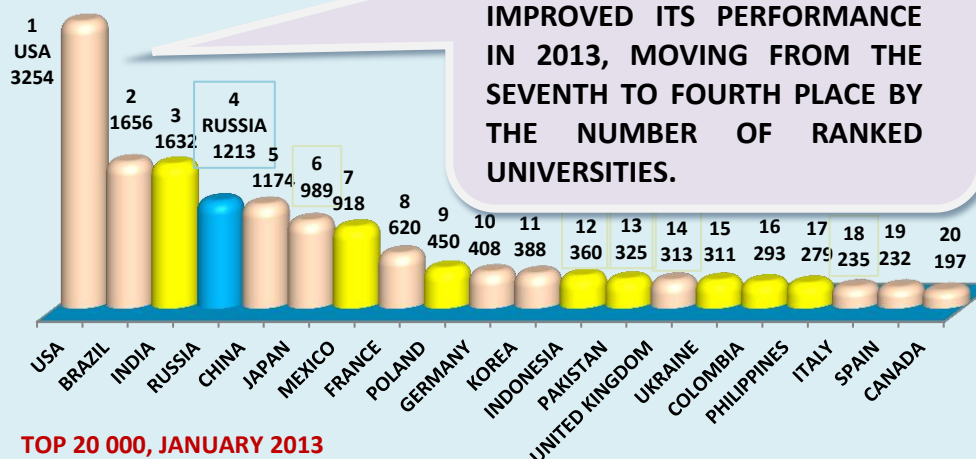
The sharp increase in the number of universities being ranked **in 2012** revealed the scale of the system of higher education in such countries as *India* (3rd place in the total number of universities ranked), *Mexico, Poland, Indonesia, Pakistan, Ukraine, Columbia, Philippines.*

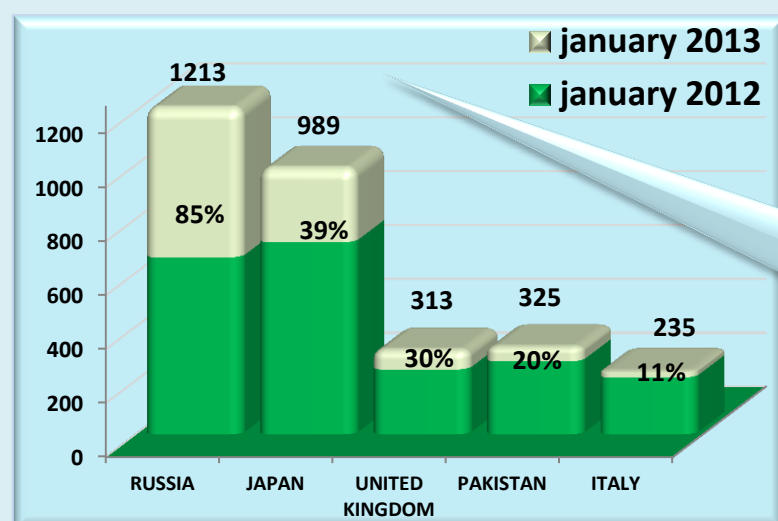**NUMBER OF NATIONAL UNIVERSITIES, JANUARY 2012, TOP 20 000**

Values: USA 3227, BRAZIL 1764, INDIA 1688, CHINA 1192, MEXICO 931, JAPAN 713, RUSSIA 657, FRANCE 619, POLAND 450, GERMANY 409, KOREA 392, INDONESIA 352, UKRAINE 325, COLOMBIA 298, PHILIPPINES 283, PAKISTAN 271, UNITED KINGDOM 241, SPAIN 237, ITALY 211, CANADA 200

RUSSIA HAS SIGNIFICANTLY IMPROVED ITS PERFORMANCE IN 2013, MOVING FROM THE SEVENTH TO FOURTH PLACE BY THE NUMBER OF RANKED UNIVERSITIES.

TOP 20 000, JANUARY 2013

Values: 1 USA 3254, 2 BRAZIL 1656, 3 INDIA 1632, 4 RUSSIA 1213, 5 CHINA 1174, 6 JAPAN 989, 7 MEXICO 918, 8 FRANCE 620, 9 POLAND 450, 10 GERMANY 408, 11 KOREA 388, 12 INDONESIA 360, 13 PAKISTAN 325, 14 UNITED KINGDOM 313, 15 UKRAINE 311, 16 COLOMBIA 293, 17 PHILIPPINES 279, 18 ITALY 235, 19 SPAIN 232, 20 CANADA 197

n-number of Russian universities among the best universities in the world; N - total number of universities in Russia

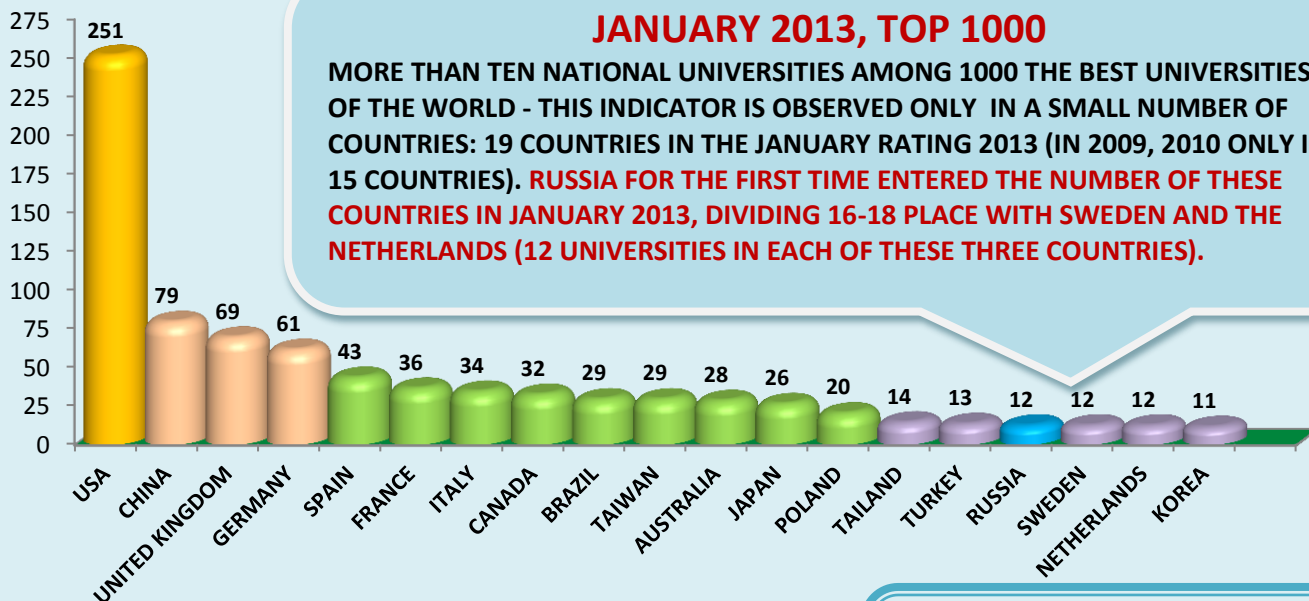| TOP 2000	n	N/n %
JANUARY 2012	657	57
JULY 2012	979	84
JANUARY 2013	1213	100

ONLY FIVE COUNTRIES OUT OF TWENTY INCREASED THE NUMBER OF RANKING UNIVERSITIES DURING THE YEAR (JANUARY 2012- JANUARY 2013). **THE GREATEST GROWTH OF NETWORK ACTIVITY IS IN RUSSIA (85%).**

Chart (january 2013 / january 2012):
- RUSSIA: 1213, 85%
- JAPAN: 989, 39%
- UNITED KINGDOM: 313, 30%
- PAKISTAN: 325, 20%
- ITALY: 235, 11%

ONE THOUSAND BEST UNIVERSITIES OF THE WORLD

Bar chart values:
- USA — 251
- CHINA — 79
- UNITED KINGDOM — 69
- GERMANY — 61
- SPAIN — 43
- FRANCE — 36
- ITALY — 34
- CANADA — 32
- BRAZIL — 29
- TAIWAN — 29
- AUSTRALIA — 28
- JAPAN — 26
- POLAND — 20
- TAILAND — 14
- TURKEY — 13
- RUSSIA — 12
- SWEDEN — 12
- NETHERLANDS — 12
- KOREA — 11

JANUARY 2013, TOP 1000

MORE THAN TEN NATIONAL UNIVERSITIES AMONG 1000 THE BEST UNIVERSITIES OF THE WORLD - THIS INDICATOR IS OBSERVED ONLY IN A SMALL NUMBER OF COUNTRIES: 19 COUNTRIES IN THE JANUARY RATING 2013 (IN 2009, 2010 ONLY IN 15 COUNTRIES). **RUSSIA FOR THE FIRST TIME ENTERED THE NUMBER OF THESE COUNTRIES IN JANUARY 2013, DIVIDING 16-18 PLACE WITH SWEDEN AND THE NETHERLANDS (12 UNIVERSITIES IN EACH OF THESE THREE COUNTRIES).**
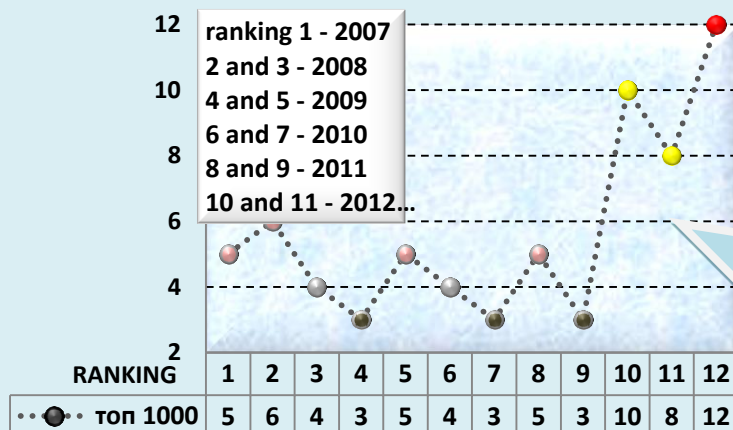
JULY 2009 TOP 1000

POLAND - 16
SWEDEN - 14
NETHTRLANDS - 13
FINLLAND - 11
in the two countrits - 10
three countries - 9
two countries - 8
two countries - 7
four countries - 6
four cjuntries - 5
(*including RUSSIA*)...

**JULY 2009
15 COUNTRIES WITH THE INDICATOR OF THE TOP 1000 MORE THAN 10**

Pie chart values:
- USA — 296
- UNITED KINGDOM — 70
- GERMANY — 63
- JAPAN — 50
- SPAIN — 43
- CANADA — 38
- ITALY — 38
- FRANCE — 36
- TAIWAN — 35
- BRAZIL
- AUSTRALIA — 28
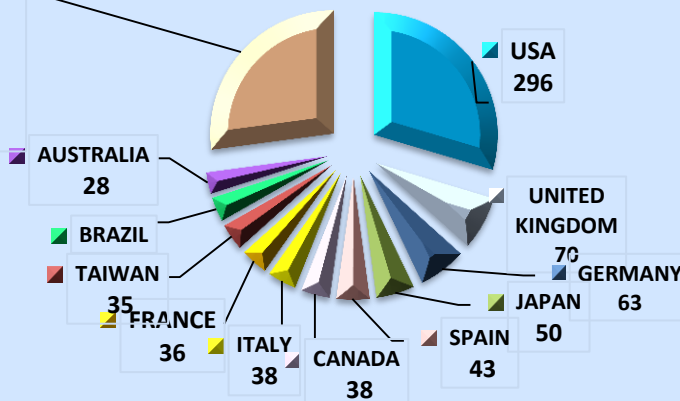
INDEX OF RUSSIA - 5 compared to 12 in 2013!

ranking 1 - 2007
2 and 3 - 2008
4 and 5 - 2009
6 and 7 - 2010
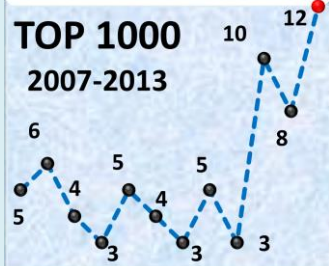8 and 9 - 2011
10 and 11 - 2012...

RUSSIAN UNIVERSITIES AMONG 1000 THE BEST UNIVERSITIES OF THE WORLD IN 12 RATINGS 2007-2013

**THE SHARP IMPROVEMENT IN 2012 WITH A RECORD RESULT IN JANUARY 2013**

RANKING	1	2	3	4	5	6	7	8	9	10	11	12
топ 1000	5	6	4	3	5	4	3	5	3	10	8	12

2012-2013

RECORD RESULTS OF RUSSIAN UNIVERSITIES

TOP 1000
2007-2013

HIGH PERFORMANCE FIRST TIME ACHIEVED BY RUSSISAN UNIVERSITIES IN JULY 2011, CONTINUES TO RISE AND REACHES A RECORD BREAKING RESULTS IN THE JANUARY 2013 RATING (UNLIKE THE "UPS AND DOWNS" OF THE PAST YEARS).THE RESULT OF THE TOP 1000 IN 2013, 2-4 TIMES EXCEEDS THE FIGURES OF 2007-2010.
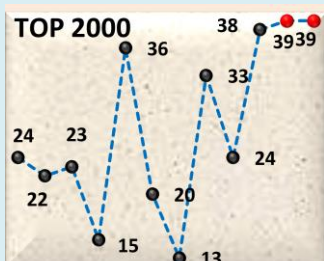
TOP 2000

IN THE TOP 2000 THE RESULTS IN 2012-2013 (THE LAST THREE RATINGS) IS 1,5-3 TIMES HIGHER THAN THE INDICES OF THE PREVIOUS YEARS (EXCEPTION – 36 UNIVERSITIES IN JULY 2009, AFTER WHICH THERE HAS BEEN A SHARP FALL IN THE RESULTS).
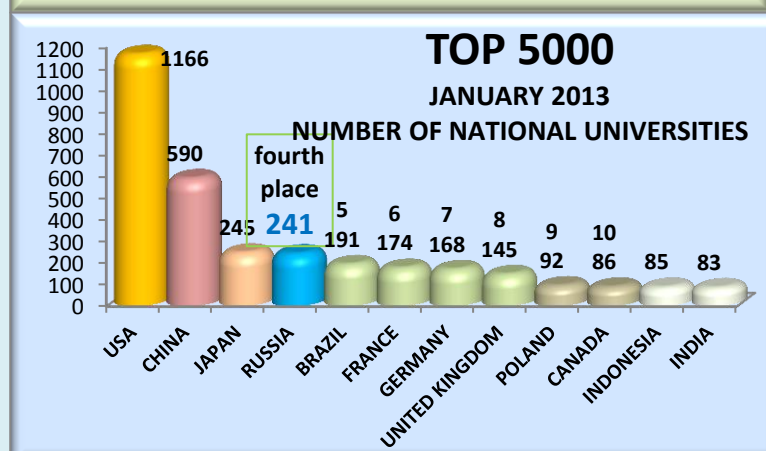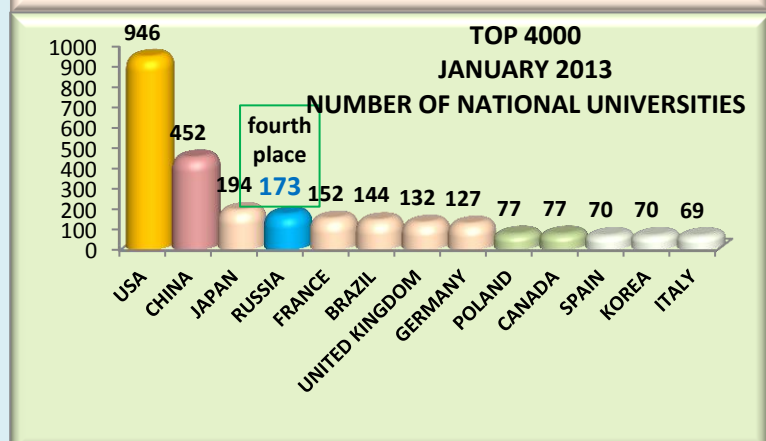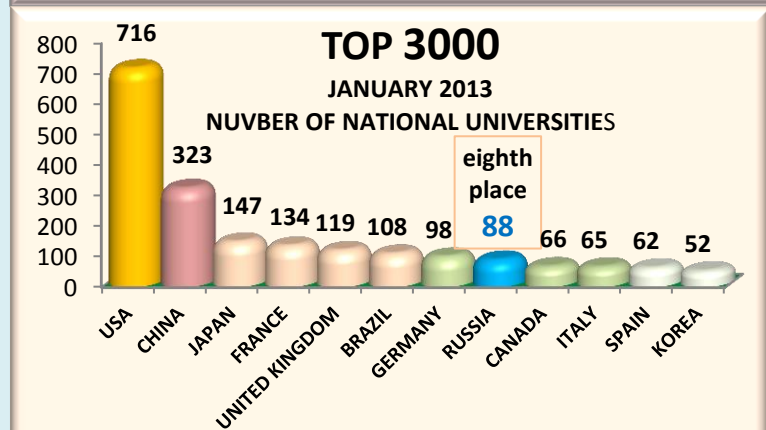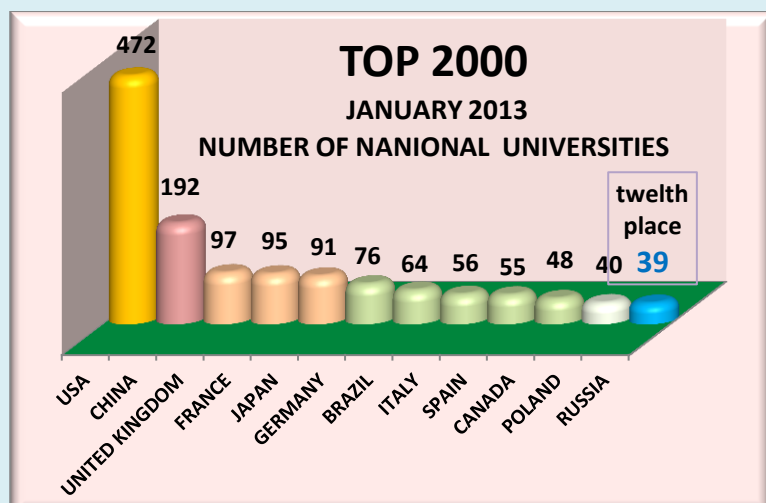
TOP 3000
2007-2013

IN 2011-2013 , STARTING FROM THE TOP 3000, RUSSIA IS AMONG THE TOP TEN COUNTRIES BY NUMBER OF NATIONAL UNIVERSITIES AMONG THE BEST UNIVERSITIES OF THE WORLD. IN 2012 FOR THE FIRST TIME RUSIA REACHED **8-TH PLACE IN THIS SAMPLE.**

TOP 5000 - 2007-2013
NUMBER OF RUSSIAN UNIVERSITIES
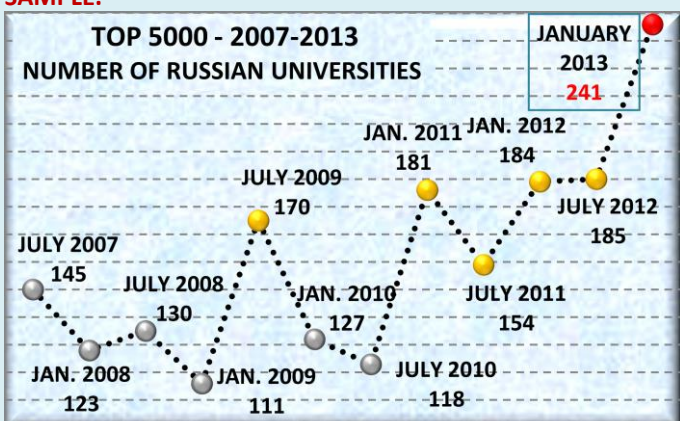
IN THE TOP 4000 AND TOP 5000 RUSSIA FOR THE FIRST TIME RANKED 4TH IN COMPARISON WITH 7-9 PLACES IN PREVIOUS YEARS.

TOP 2000
JANUARY 2013
NUMBER OF NANIONAL UNIVERSITIES

twelth place **39**

TOP 3000
JANUARY 2013
NUVBER OF NATIONAL UNIVERSITIES

eighth place **88**

TOP 4000
JANUARY 2013
NUMBER OF NATIONAL UNIVERSITIES

fourth place **173**

TOP 5000
JANUARY 2013
NUMBER OF NATIONAL UNIVERSITIES

fourth place **241**

BY THE NUMBER OF NATIONAL UNIVERSITIES AMONG 5000 BEST UNIVERSITIES OF THE WORLD, RUSSIA IN THE LATEST RANKING MOVED CLOSER TO JAPAN, OCCUPYING THE THIRD PLACE.

## RUSSIAN REGIONS IN THE WORLD EDUCATIONAL SPACE

AS IN PREVIOUS RATINGS (2007-2013),

STARTING FROM THE TOP 3000
AMONG THE BEST UNIVERSITIES OF THE
WORLD **ALL FEDERAL DISTRICTS OF
RUSSIA ARE PRESENTED**– fig. 1

**AMONG 12 BEST RUSSIAN
UNIVERSITIES(TOP 1000) ONLY 4
MOSCOW UNIVERSITIES**, DESPITE THE
FACT THAT MOSCOW ACCOUNTS FOR
ABOUT 40% OF THE UNIVERSITIES IN
THE COUNTRY– fig. 2

**IN THE TOP 2000 AMONG 39 RUSSIAN
UNIVERSITIES** DOMINATE UNIVERSITIES
OF SIBERIA (10 OF 39), FOLLOWED BY
MOSCOW (9 UNIVERSITIES) AND VOLGA
FEDERAL DISTRICT (8 UNIVERSITIES).
THIS SAMPLE REPRESENTS **ALL FEDERAL
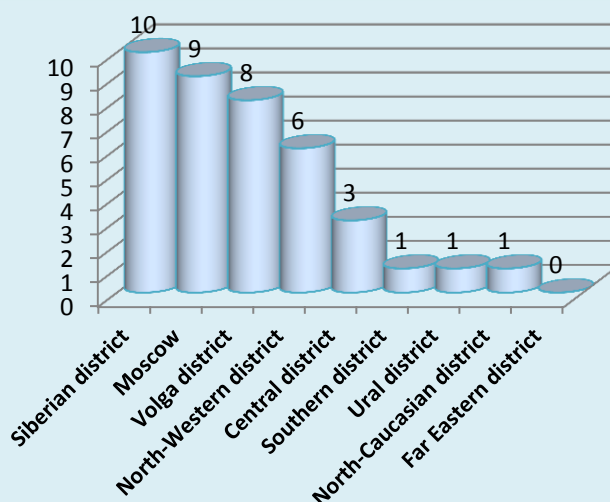DISTRICTS EXCEPT FOR THE FAR
EASTERN DISTRICT**– fig.3.

**IN THE TOP 3000 (88 RUSSIAN
UNIVERSITIES FROM ALL EIGHT
FEDERAL DISTRICTS)** REMAINS THE
SUPERIORITY OF SIBERIA (22 OF 87),
FOLLOWED BY MOSCOW (19
UNIVERSITIES) AND THEN VOLGA
FEDERAL DISTRICT (15 UNIVERSITIES) –
fig.1.

JANUARY 2013
TOP 3000
87 RUSSIAN UNIVERSITIES
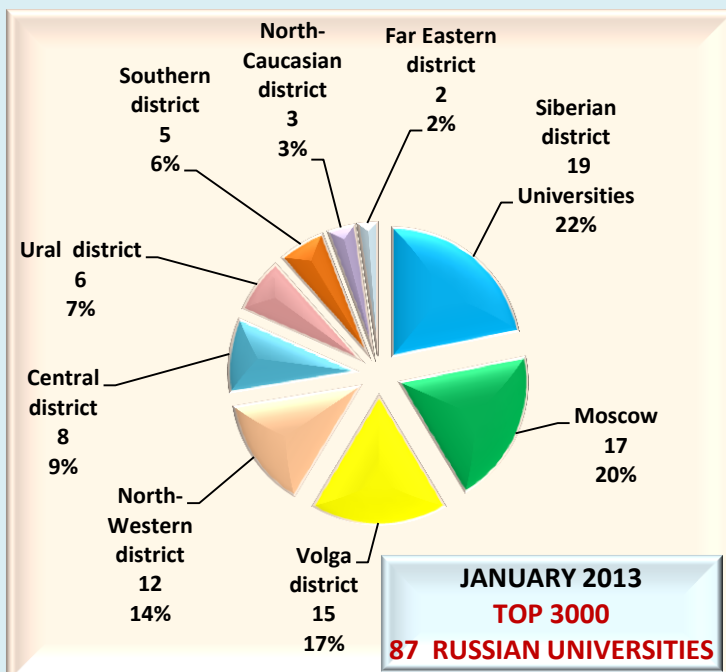
Fig.1. DISTRIBUTION BY FEDERAL DISTRICTS OF 88
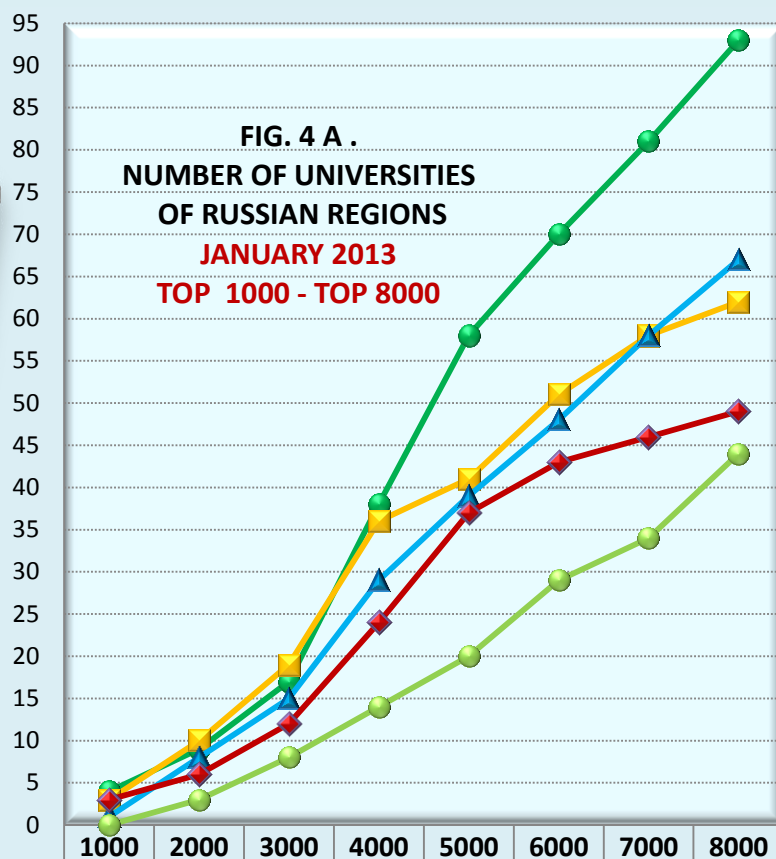RUSSIAN UNIVERSITIES - **TOP 3000 (**JANUARY 2013**)**
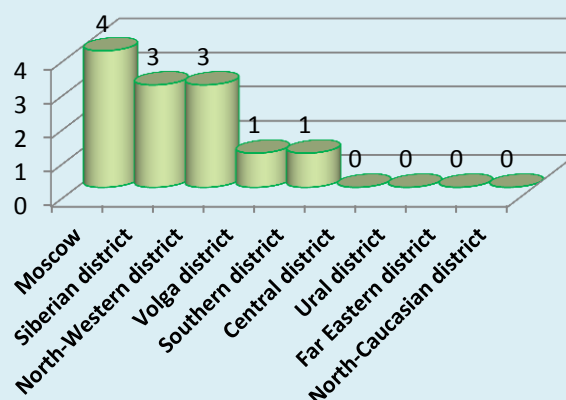
Fig.2. DISTRIBUTION BY FEDERAL DISTRICTS OF 12
RUSSIAN UNIVERSITIES - **TOP 1000 (**JANUARY 2013**)**


RUSSIAN REGIONS IN THE WORLD

FIG. 4 A .
NUMBER OF UNIVERSITIES
OF RUSSIAN REGIONS
JANUARY 2013
TOP 1000 - TOP 8000

	1000	2000	3000	4000	5000	6000	7000	8000
Moscow	4	9	17	38	58	70	81	93
Siberian Federal district	3	10	19	36	41	51	58	62
Volga Federal district	1	8	15	29	39	48	58	67
North-Western Federal district	3	6	12	24	37	43	46	49
Central Federal district	0	3	8	14	20	29	34	44

UNIVERSITIES OF THE URAL,SOUTHERN, FAR EASTERN AND NORTH-CAUCASIAN DISTRICTS ARE CHARACTERIZED RELATIVELY LOW NETWORK ACTIVITY. (especially Far Eastern and North-Caucasian districts – fig.4 B.

FIG. 4 B.
JANUARY 2013
TOP 1000 - TOP 8000
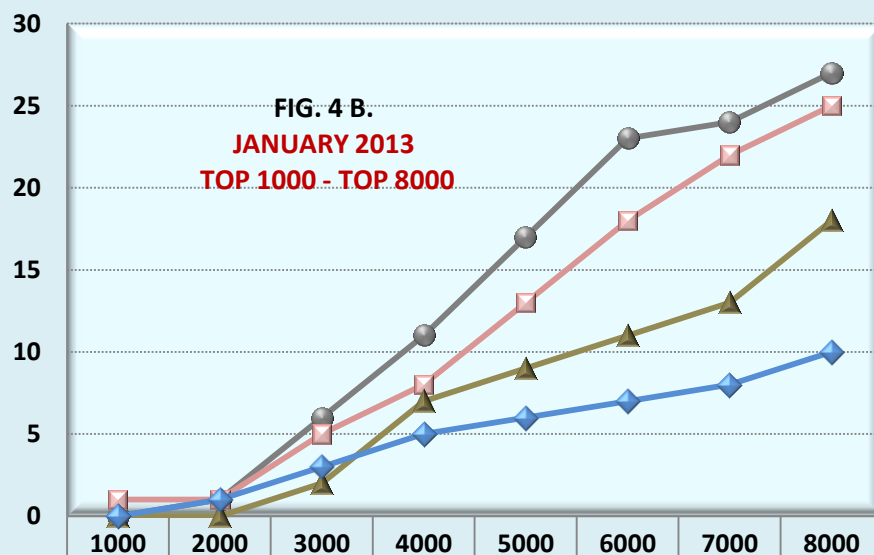
	1000	2000	3000	4000	5000	6000	7000	8000
Ural Federal district	0	1	6	11	17	23	24	27
Southern Federal district	1	1	5	8	13	18	22	25
Far Eastern Federal district	0	0	2	7	9	11	13	18
North-Caucasian Federal district	0	1	3	5	6	7	8	10

THE CHARACTERISTICS OF THE NETWORK ACTIVITY OF RUSSIA'S BEST UNIVERSITIES

THE NUMBER OF UNIVERSITIES WITH A HIGH LEVEL OF CERTAIN INDICATORS

INDICATOR	NUMBER OF UNIVERSITIES WITH THE POSITIONS			
	from 1 to100	from 1 to 200	from 1 to 500	from 1 to1000
OPENNESS RANK The global effort to set up institutional research repositories is explicitly recognized in this indicator that takes into account the number of rich files (pdf, doc, docx, ppt) published in dedicated websites according to the academic search engine Google Scholar the objective is to consider recent publications that now are those published between 2008 and 2012 (new period).	4	6	24	66
THE MAIN FEATURE IS A VERY HIGH LEVEL OF OPENNESS RANK: THE NUMBER OF UNIVERSITIES WITH THE POSITIONS OF THIS INDICATOR 1-1000 IS 5.5 TIMES GREATER THAN THE NUMBER OF UNIVERSITIES INCLUDED INTO ONE THOUSAND BEST UNIVERSITIES OF THE WORLD. . THE NUMBER OF UNIVERSITIES WITH OPENNES RANK 1-500 IS 12 TIMES GREATER THAN THE NUMBER OF UNIVERSITIES WITH WORLD RANK FROM 1 TO 500.				
PRESENCE RANK The total number of webpages hosted in the main webdomain (including all the subdomains and directories) of the university as indexed by the largest commercial search engine (Google). It counts every webpage, including all the formats recognized individually by Google, both static and dynamic pages and other rich files.	2	5	18	43
THE NUMBER OF UNIVERSITIES WITH THE POSITIONS OF THIS INDICATOR 1-1000 DOUBLE THE NUMBER OF UNIVERSITIES WITH WORLD RANK FROM 1 TO 1000				
IMPACT RANK The quality of the contents is evaluated through a "virtual referendum", counting all the external inlinks that the university webdomain receives from third parties. The link visibility data is collected from the two most important providers of this information: majestic seo and ahrefs	1	0	3	10
EXCELLENCE RANK The academic papers published in high impact international journals. The indicator is restricted to only those excellent publications, i.e. the university scientific output being part of the 10% most cited papers in their respective scientific fields. Although this is a measure of high quality output of research institutions, the data provider scimago group supplied non-zero values for more than 5200 universities (period 2003-2010).	0	0	1	2
THE WEAKEST LINK - INSUFFICIENT QUALITY OF SCIENTIFIC RESEARCH - EXCELLENCE RANK. Only two Russian universities (Lomonosov Moscow State University and Saint Petersburg State University) have relatively high rates.				
WORLD RANK	1	1	2	12

MORE THAN 80% OF UNIVERSITIES WITH SUCH OPENNESRANK ARE LOCATED IN THE VOLGA AND SIBERIAN FEDERAL DISTRICTS. THUS, AN INCREASING NUMBER OF RUSSIAN UNIVERSITIES, PARTICULARLY REGIONAL ONES, ARE IMBUED WITH THE IDEAS OF WEBOMETRICS, OF WHICH THE MOST ATTRACTIVE FOR RUSSIA IS THE EXCHANGE OF SCIENTIFIC INFORMATION THROUGH ONLINE PUBLICATIONS.
HIGH PRESENCE RANK ALSO PROMOTES THE EXCHANGE OF EXPERIENCE BETWEEN THE REGIONS OF THE COUNTRY.

DURING THE ECONOMIC CRISIS, COMPLICATING THE FULL-TIME EXCHANGE OF EXPERIENCE BETWEEN REGIONS, THE GROWTH OF THE NETWORK ACTIVITY OF UNIVERSITIES AND ESPECIALLY EXCELLENCE RANK AND PRESENCE RANK, PLAYS A CRUCIAL ROLE FOR THE INTELLECTUAL DEVELOPMENT OF THE REGIONS.

In August of this year there were published the results of the July 2013 ranking, which will be discussed in detail in our next study. According to preliminary analysis, Russian universities after a period of sustained improvement in the ranking positions, unfortunately, suddenly worsened their results. Whether it's a casual decline - can be judged after the analysis of the next two or three ratings. However, the reasons need to think about now. One of the reasons may be associated with the activation of the process of modernization of Russian higher education and with some uncertainty of a number of universities in this period. The instability of the financial situation during the period of the modernization of education, certainly is compounded by the

The main conclusions of the review of the results of the dynamics of Russian universities in the period 2007-2013 (including July 2013) are as follows:

1) By number of national higher education institutions among 5000 best universities of the world Russia enters in the top ten since 2007. In 2011-2013 Russia is among the top ten, starting with a sample of 3000. In 2012 for the first time reached the 8th place in this sample.

2) Development of the network activity of Russian universities promotes intellectual development of the regions. Since 2007, among Russian universities, included in the 3000 best universities of the world, universities from all Federal districts of Russia are represented. Moreover, among the best universities of Russia there is predominance of regional universities.

3) The important feature of network activity of regional universities - high ranking indicator, characterizing the openness of information (OPENNESS). The weak point - EXCELLENCE RANK.

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THANK YOU FOR YOUR ATTENTION