

# EVALUATING THE VISIBILITY AND ACCESSIBILITY OF WORLD UNIVERSITIES WEBSITES

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## INTRODUCTION

Although there are some criticisms by some parties in respect of the criteria used by Times Higher Education in ranking of world universities annually it has been proven that the top notched universities occupied almost the same position yearly. For example in *Times Higher Education's 2010-2011 World University Rankings* the top six universities in the world arranged according to their positions were Harvard University, California Institute of Technology, Massachusetts Institute of Technology(MIT), Stanford University, Princeton University, University of Cambridge. In 2009, the top six universities were Harvard University, University of Cambridge, Yale University, University College London, Imperial College London and University of Oxford. While in the lowest tier although there is some visible volatility, generally speaking, they also exhibit similar pattern as the top rank counterparts. For example in 2010 the bottom six universities in the World Ranking occupying No. 195,196,197, 198, 199, and 200 were University of Vienna, Kent State University, Zhejiang University, University of Illinois - Chicago, Simon Fraser and Swedish University of Agricultural Sciences, while in 2009 University of Vienna and Simon Fraser were placed at No. 132 and 196 respectively and the others were not listed. It seems that at least two out of the six universities still occupy the lowest rank in the World Ranking.

There are good reasons why private and media-based entities such as *Times Higher Education* were involved in world university ranking. As explained by Merisotis (2002) the major purposes were “to give information to the consumer in order to help him to make higher education choices, to function as an institutional marketing strategy, to promote quality of education institutions motivating competence among them.”

University rankings are inherently controversial as the quality of universities cannot be precisely measured by numerical indicators alone. We should therefore not completely rely on the ranking list as being definitive. Instead, the ranking is to be used simply as a kind of reference to assist in the decision making processes. Despite the shortcomings Baty (2010) believed that rankings have some real uses, and love them or hate them, they are here to stay. Rankings help students select courses, help faculty make career choices, help department heads choose new research partners and help university

managers set strategic priorities. Furthermore, as pointed out by Buela-Casal et al (2007) “ Nowadays, higher education has become so international that it is no longer enough for universities know their position in comparison to other universities from their own country. As universities increasingly compete in a global environment, they tend to compare themselves with world universities. In fact, the expression “World Class” has been created and many universities expect being considered as “ World Class Universities”.

All these universities whether they are occupying the top or bottom positions have a common feature in having university websites. With the introduction of the World Wide Web and graphical browsers in the 1990s the Internet has become widely accessible and many people have grabbed the idea of using it for their multifarious purposes and agenda. They have established all types of websites to foster their mission and visions. They recognize that Internet can enhance their scale of communication through the websites as the Internet is capable of delivering large quantities of information in a speedy manner to the public. All universities in the world have taken advantage of this phenomena by having their own websites. It is envisaged that universities websites do partake in the success or failure of universities to market their programs to the world at large. Perceptions of scholars as to the quality of programs offered by universities could be judged from universities websites. Their judgment might be swayed by what are available in the websites. As Conway and Dorner (2004) pointed out “ a party may be providing large amounts of information on its website, but if this information is difficult to find, its usefulness will be reduced. Likewise, a website may offer a high level of interactivity, but if a user cannot access the site it will count for little.” The crux of the problems lies in the visibility and accessibility of those websites.

What needs to be addressed is whether there are differences in terms of visibility and accessibility of the websites representing the top rank universities and the bottom rank universities as well as those that are not represented at all in the World Ranking. As these websites are around for quite sometimes already it is therefore appropriate to question on how effective are those websites. A study should be conducted to explore the differences.

## **PURPOSE OF THE STUDY**

The objectives of this study is to determine whether there are differences in terms of visibility and accessibility of the top rank ,the bottom rank and the nonlisted universities websites. Twenty five (25) samples was drawn from the top rank and the bottom rank universities based on the World ranking. Another sample of similar size was drawn from universities that are not listed in the top 200 World Ranking Universities.

## Visibility

The first thing that any organization would like to tell the world of its presence is through its website. The better a site can help the convergence of the goals of the users and the owner, the more successful the site will be. (Fan, 2006). A valid indicator of site visibility and online stature would be the volume of web traffic to a given site. Higher quality websites tend to attract more links.

According to Rowlett (2006), linking is an extremely important way to increase website visibility. The greater number of quality links you have coming to your site, the better your visibility.

It has also been shown that search engines generate a large proportion of web traffic and most modern search engine algorithms tend to return heavily-linked sites first.

One of the techniques that can be applied to study the issue of visibility is using the software, *Alexa*. In their study on quality of website, (Lin et. al, 2004) reiterated the significance of *Alexa*, “ With an installed base of well over 10 million toolbars, the *Alexa* traffic rankings represent the largest and most global sample of Internet usage available in the world.” According to (Hanson, 2000) the rankings of *Alexa* are based on the user popularity. The website usage can be an indicator of online quality.

Using *Alexa* it is possible to gauge the volume of the web traffic for a particular website. *Alexa* also offered context for each site visited: to whom it was registered, how many pages it had, how many other sites pointed to it, and how frequently it was updated. It should be pointed out that *Alexa* records the web traffic based on an average of three months. As such using *Alexa* to record a daily or weekly hits would not be useful. It should be used to record discrete data after at least a three months period.

Table 1 shows the number of in links, web traffic volume and the load time for opening the websites. As expected the number of in links for these top rank world universities are large. Stanford University has 18,189 in links, Columbia University with 14,524 in links, Princeton University with 11,723 and Yale University with 11,370. The odd one seems to be the University of California Berkeley with only 6 in links. However, this small number of in links are compensated by the huge web traffic of 3,241,862, the highest among the other universities. For the web traffic, aside from University of California Berkeley, other universities have also high scores. Harvard University has 16,081 web traffic, Imperial College London with 27,585 web traffic, University of Hong Kong with 10,418 web traffic and University College London with 10,692 web traffic. The lowest web traffic pattern is Stanford University with 1246 visitors. If we were to

aggregate the number of in links with the web traffic for the top six rank of world universities we will find the lowest figure i.e. for the University of Cambridge is around 10,000 items or more for the others. It is also to be noted that 17 of the universities have a fast speed of load time and Imperial College London has a very fast speed of load time at 0.55 seconds.

Table 1 Scoring for top rank world universities

Name of university	Number of link	Web Traffic	Load time (second)
Harvard Univ	4366	16081	1.13
California Institute of Technology	2366	8678	2.26
Massachusetts of Technology	8758	1300	1.39
Stanford Univ	18189	1246	1.21
Princeton Univ	11723	5518	0.98
Univ of Cambridge	3635	5799	0.95
Univ of Oxford	3465	6048	1.01
Univ of California Berkeley	6	3241862	NA
Imperial College London	2984	27585	0.55
Yale Univ	11370	4119	1.06
Univ of California Los Angeles	3732	2946	0.90

Univ of Chicago	2267	6683	1.76
John Hopkins Univ	3896	8172	1.14
Cornell Univ	3309	2766	1.42
Swiss Federal Institute of Technology Zurich	1861	8622	1.15
Univ of Michigan	8668	2955	0.87
Univ of Toronto	5422	4645	1.19
Columbia Univ	14524	3068	1.05
Univ of Pennsylvania	4204	2988	1.53
Carnegie Mellon Univ	4580	4329	0.72
Univ of Hong Kong	3062	10418	1.08
Univ College London	6068	10692	0.85
Univ of Washington	6560	2941	0.98
Duke Univ	6094	7004	0.82
Northwestern Univ	2706	7198	0.77

Table 2 shows the in links are relatively small as compared to the top rank universities. Here no universities have more than 10,000 in links and a couple of the universities have less than one thousand in links such as Swedish University of Agriculture Sciences with 531 in links, Yonsei University with 497 in links, Karlsruhe Institute of Technology with 428, University of Exeter with 875 and National Chiao Tung University with 810 in links. For the web traffic the Swedish University of Agriculture Sciences has

the highest number of visitors with 172,910 and the Royal Institute of Technology has the smallest number with 7258 visitors. In terms of load time the pattern is similar to the top rank world universities.

Table 2 Scoring for bottom rank world universities

Swedish Univ of Agriculture Sciences	531	172910	0.69
Simon Fraser Univ	4806	11900	1.02
Univ of Illinois-Chicago	5186	14835	0.94
Zhejiang Univ	1592	28342	0.93
Kent State Univ	1137	18786	0.97
Univ of Vienna	5467	9660	1.07
Royal Institute of Technology	1233	7258	0.78
Dalhousie Univ	1354	47189	0.94
Univ of Cincinnati	1773	17549	0.65
Drexel Univ	1693	17918	0.89
Yonsei Univ	497	59644	2.39
Eberhard Karls Univ, Tubingen	2995	37551	NA
Karlsruhe Institute of Technology	428	53055	1.29

Univ of Innsbruck	1938	23986	0.71
Univ of Konstanz	1871	44508	0.91
Univ of Twente	1134	16386	1.06
Univ of Exeter	875	45761	1.94
Middle east Technical Univ	1266	28648	0.54
RWTH Aachen Univ	1750	13814	0.88
National Chiao Tung Univ	810	30079	1.41
Univ of Bonn	2091	21823	1.04
Humboldt Univ of Berlin	2873	11994	0.8
Monash Univ	2249	8062	1.44
Univ of Copenhagen	1116	36678	1.06
Univ of Nottingham	3893	20625	0.83

Table 3 shows that the in links for the selected universities are indeed small. Not a single university has the in links more than 1000. On the other hand the web traffic recorded a good number of visitors such as Al Azhar University has 263,868, University of Bahrain with 135,243, Jawaharlal Nehru with 153114, University of Baghdad with 5,092,969, Manipur University with 2,074,811, International Islamic University Malaysia with 101,096 and University of the Philippines Manila with 100,430. The load time for most of the websites are mostly from slow to very slow. We have here cases in which the load time are really very slow such as in the case of University of Ibadan where the load time is 6.62 seconds and Kuwait University with 4.93 seconds.

Only five universities out of twenty five universities have their load time as fast or very fast.

Table 3 Scoring of universities that are not listed in the 200 World Rank Universities

Univ of Bahrain	151	135243	1.94
Univ of Dhaka	169	36607	1.76459
Al Azhar Univ	118	263868	2.22
Annamalai Univ	192	29412	2.05
Indian Institute of Technology Delhi	459	36791	3.11
Jawaharlal Nehru Univ	457	153114	0.65
Manipur Univ	227	2074811	NA
Universitas Gadjah Mada	875	11351	1.66
Institut Teknologi Bandung	964	21691	2.14
Universitas Indonesia	629	12808	0.98
Univ of Teheran	792	9713	2.65
Univ of Baghdad	41	5092969	NA
Jordan Univ	448	101942	2.55
Kuwait Univ	312	37429	4.93
Universiti Sains Malaysia	716	53505	0.85
Universiti Malaya	569	37006	1.66

International Islamic Univ Malaysia	90	101096	0.67
Univ of Otago	1493	56044	1.4
Univ of Ibadan	97	70015	6.62
Univ of Karachi	80	73268	2.46
Univ of the Philippines Manila	519	100430	3.07
Moscow State Univ	1066	11988	2.95
King Abdul Aziz Univ	532	9967	2.03
Univ of South Africa	726	22349	1.10
Chulalongkorn Univ	859	16839	0.72

The foregoing paragraphs clearly demonstrate that the top rank universities besides being rank highly on quality education and academic performance they are also highly visible as manifested from their large number of in links and web traffic. Their websites also do not suffer from loading time problem. The results also showed clearly that the non rank universities have some formidable challenges. It is possible that their visibility problems could affect their chances of being listed in the World universities ranking. Efforts should be geared towards making their presence known to their stakeholders by taking steps to ensure that their websites do not suffer from loading time problem at least for a start.

#### Accessibility

The development of any website has to comply with the existing accessibility guidelines. It is futile to have a website that is difficult to access by users owing to non compliance with the existing standards on accessibility. To check for such irregularities a software EvalAccess 2.0 was used. It is an on-line web accessibility evaluation tool which has been developed using Web Service technology. This tool provides different methods for evaluating web accessibility: evaluation of a single web page, evaluation of a web site and evaluation of HTML mark-up. It returns a complete report of errors as a result of the evaluation. For the purpose of this study we are concerned only with Priority 1 errors.

Priority 2 and Priority 3 errors are excluded from our evaluation. In cases where Priority 1 are zero errors no report will be made for those cases. It means that they have satisfied the Web Content Accessibility Guidelines(WCAG).

Table 4 shows the accessibility problems faced by top rank universities. Eight universities have Priority 1 errors. However, the number of errors range from 1 to 5 which generally are not serious.

Table 4 Scoring for top rank world universities

Name of university	Priority 1	Priority 2	Priority 3
California Institute of Technology	3	112	7
Stanford Univ	1	25	0
Univ of Oxford	1	7	0
Imperial College London	5	19	3
Univ of Toronto	1	9	0
Columbia Univ	1	25	9
Univ of Hong Kong	4	87	16
Duke Univ	1	0	1

Table 5 shows the accessibility problems faced by bottom rank universities. Only six universities have Priority 1 errors. Three of them, namely the Zhejiang University, University of Konstanz and University of Cincinnati have serious Priority 1 errors.

Table 5 : Scoring for bottom rank world universities

Name of university	Priority 1	Priority 2	Priority 3
Swedish Univ of Agriculture Sciences	1	19	1
Zhejiang Univ	29	70	12
Univ of Cincinnati	13	40	15
Univ of Konstanz	50	10	4
Univ of Twente	3	0	0
Univ of Bonn	1	5	1

Table 6 shows the accessibility problems faced by universities that are not listed in the 200 World Rank Universities. More than half of these universities are having Priority 1 errors. Eleven of them are having serious Priority 1 errors.

Table 6: Scoring of universities that are not listed in the 200 World Rank Universities

Name of university	Priority 1	Priority 2	Priority 3
Univ of Bahrain	16	125	38
Univ of Dhaka	15	17	0
Al Azhar Univ	28	71	17
Annamalai Univ	4	13	6
Indian Institute of Technology Delhi	23	96	27
Jawaharlal Nehru Univ	24	122	12

Manipur Univ	8	49	4
Universitas Gadjah Mada	6	24	3
Universiti Malaya	54	190	58
International Islamic Univ Malaysia	1	46	17
Univ of Otago	1	4	0
Univ of the Philippines Manila	1	28	4
Moscow State Univ	44	104	27
King Abdul Aziz Univ	2	12	7
Univ of South Africa	6	9	0
Chulalongkorn Univ	30	51	13

## Conclusion

By comparing the state of visibility and accessibility among the three clusters of universities websites the findings of the study revealed as expected that those top rank universities websites are more visible and accessible as compared to the other two clusters. It is pertinent therefore, for those universities that are not highly visible and accessible to take the necessary steps to improve the development of their websites. Hopefully by taking these measures it would help the university in their drive to be the best among their contemporaries.

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