How do we measure the popularity of an e-business website:
A comparison of top ranking websites by different providers

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Abstract

The popularity of a website is often judged by the amount of traffic it attracts. But the question of what is the best measure of site traffic is not simple. Should we consider the number of unique visitors (reach), the total number of visits including repeats (page views), just the number of return visits (revisits), or the average length of stay at during a visit (stickiness)? The problem is further complicated by the fact that it is not possible to track the entire online population in the whole world. Most web traffic providers only track the browsing behavior of a selected sample audience. Therefore it is difficult to know which website ranking list is the most reliable. This paper examines several top-100 most popular website ranking lists from a number of providers to determine how the ranks may be affected by the metrics used in web traffic measures.

How to measure web traffic?

Activity-based criteria, also known as traffic-based ranking is usually regarded as the most objective method. Here, websites are ranked according to the amount of activities that took place on the site. Table1 lists the site traffic ranking providers investigated in this paper.

Table 1: Website Traffic Ranking Providers
(A) Alexa Internet, Inc. http://www.alexa.com;
(C) Compete, http://www.compete.com
(Q) Quantcast, http://www.quantcast.com
(R) Ranking.com, http://www.ranking.com;
(W) Websearch, http://www.websearch.com;

Top twenty websites in comparison:

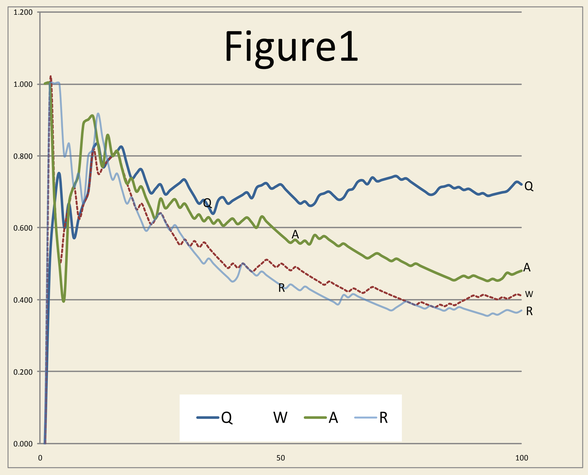
	Compete	Quantcast	Websearch	Alexa	Ranking
1	yahoo.com	google.com	yahoo.com	google.com	yahoo.com
2	google.com	yahoo.com	google.com	yahoo.com	google.com
3	live.com	msn.com	myspace.com	myspace.com	msn.com
4	myspace.com	live.com	facebook.com	youtube.com	live.com
5	msn.com	wikipedia.org	msn.com	facebook.com	youtube.com
6	facebook.com	aol.com	live.com	live.com	aol.com
7	ebay.com	youtube.com	youtube.com	msn.com	microsoft.com
8	aol.com	myspace.com	websearch.com	wikipedia.org	ebay.com
9	youtube.com	microsoft.com	aol.com	ebay.com	google.co.uk
10	craigslist.org	ebay.com	craigslist.org	aol.com	myspace.com
11	amazon.com	amazon.com	ebay.com	craigslist.org	wikipedia.org
12	cnn.com	facebook.com	comcast.net	blogger.com	facebook.com
13	wikipedia.org	about.com	microsoft.com	go.com	ask.com
14	go.com	mapquest.com	go.com	amazon.com	go.com
15	blogspot.com	blogspot.com	wikipedia.org	cnn.com	starware.com
16	microsoft.com	nextag.com	google.ca	espn.go.com	findstuff.com
17	pogo.com	craigslist.org	casalemedia.com	photobucket.com	google.ca
18	comcast.net	ask.com	att.net	flickr.com	casalemedia.com
19	bankofamerica.com	reference.com	google.co.uk	microsoft.com	blogspot.com
20	walmart.com	answers.com	yieldmanager.com	comcast.net	att.net

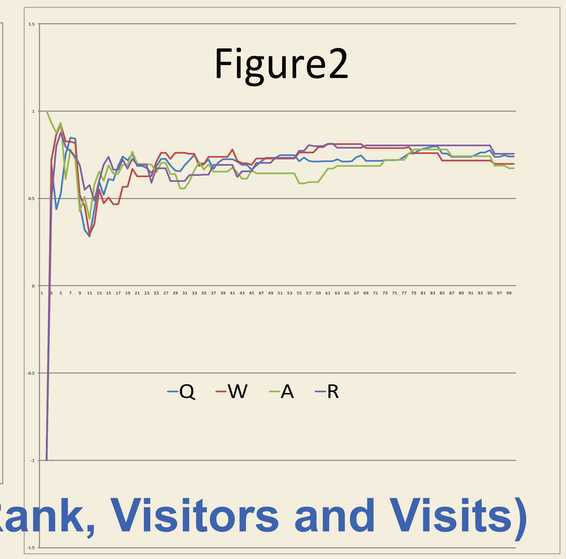
Three basic concepts of measuring web traffic

- **Reach**: percentage of unique visitors who visited a website at least once during a measurement period. This indicates the breadth of audience coverage.
- **Frequency**: average number times that a visitor (those who visited at least once) visits a website during a measurement period. This indicates the likelihood of repeat visits.
- **Duration**: average time (say in minutes) that visitors spend on a website. This indicates the "stickiness" of the website.

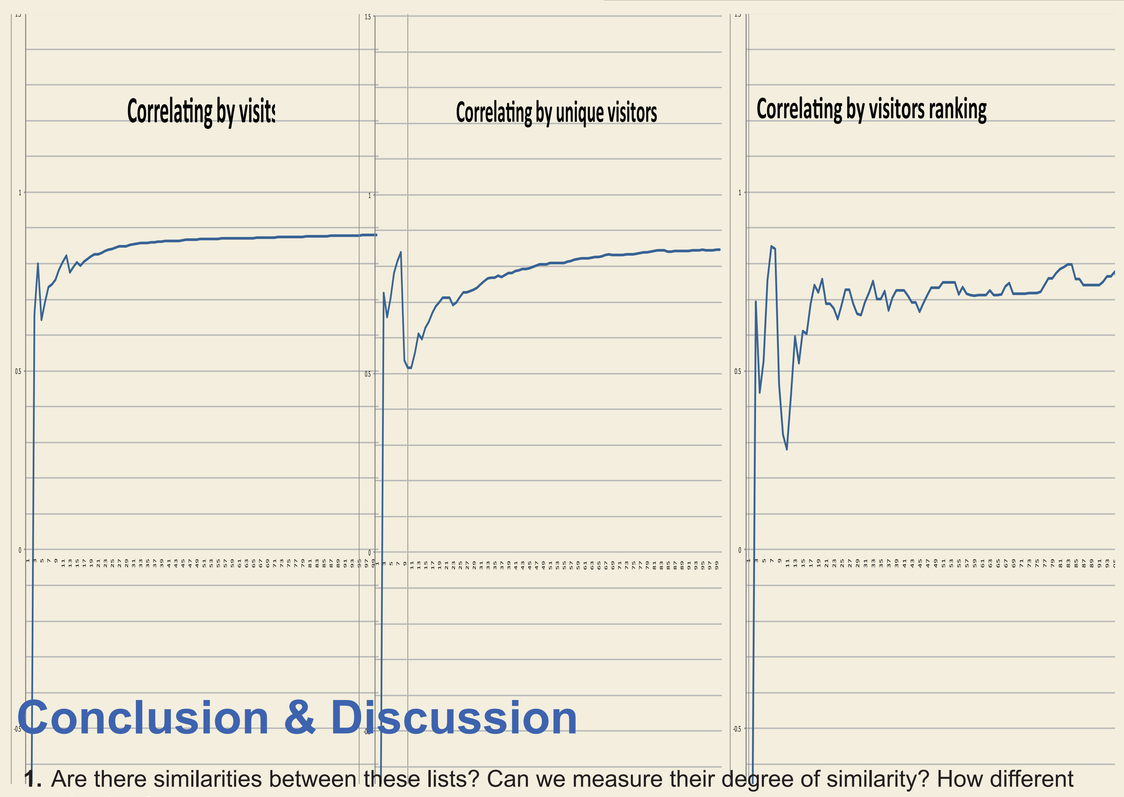
Membership Commonality and Correlation Graphs

Figure1 shows the percentage of common sites between two lists of a given size. Figure 2 is a plot of the rank correlation coefficient between two ranked lists. (The both graphs have "Compete" as base comparison.)





Compete vs Quantcast (Rank, Visitors and Visits)



Conclusion & Discussion

1. Are there similarities between these lists? Can we measure their degree of similarity? How different are the lists?

2. Using the metrics described, we can discern that ranking lists based on similar ranking methods, do exhibit a certain degree of similarity. Generally speaking, most lists agree on who are the top two sites, and also show a fair degree of agreement for lists of size 30 or more. But it is difficult to demonstrate the reliability of ranking lists of size in the range of 10s or 20s.

3. Because the ranking lists are so sensitive to the method of ranking, it is essential that we obtain rank lists from a variety of sources so that they can be used to validate each other. Comparing the visitor, visit, and rank correlations of two different providers we can say it is reliable and consistent for general purpose.

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