

A Preliminary Approach to Citation Phenomena in the World Wide Web

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EASST / 4S Conference 1996

"SIGNATURES OF KNOWLEDGE SOCIETIES"

BIELEFELD, 10-13 OCTOBER 1996

Cyberspace, contents & Internet

- Cyberspace as the sum of all information available worldwide in electronic format
- Characteristics not yet achieved:
 - unity
 - accesibility
- Internet of contents = cyberspace
 - unity provided by the Web
 - global access with universal clients (=browsers)

Citation

Sitation

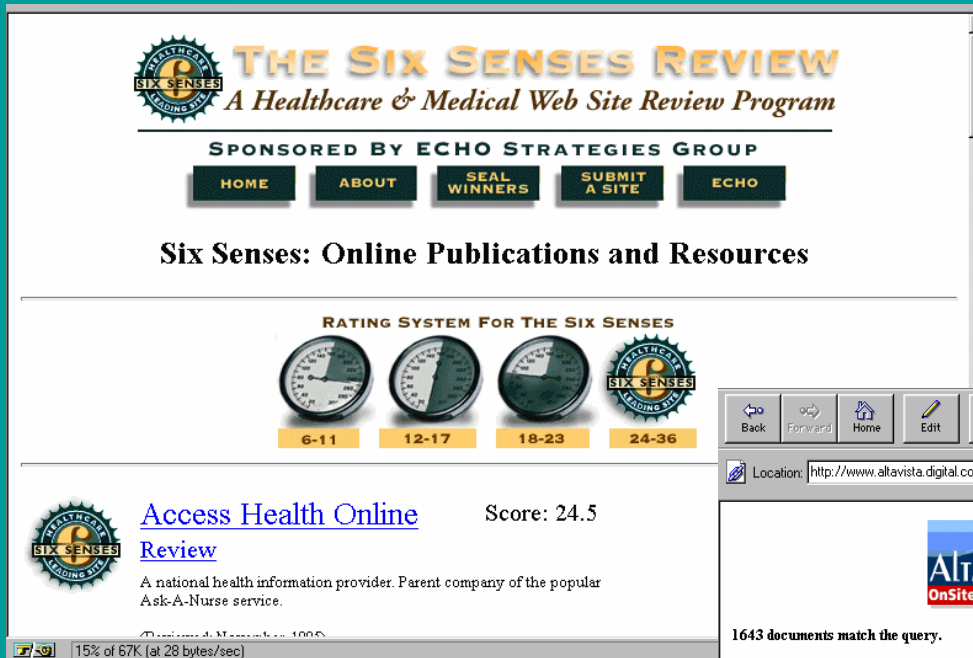
■ Scientific community

- bibliographic links
- by peers
- static
- quality association
- “endogamy”
- well developed “indexes”
- scientometrics

■ World Wide Web

- hypertext links
- by content makers
- dynamic
- thematic association
- globality
- to be developed measurements
- cyberscience

Methods



THE SIX SENSES REVIEW
A Healthcare & Medical Web Site Review Program

SPONSORED BY ECHO STRATEGIES GROUP

HOME ABOUT SEAL WINNERS SUBMIT A SITE ECHO

Six Senses: Online Publications and Resources

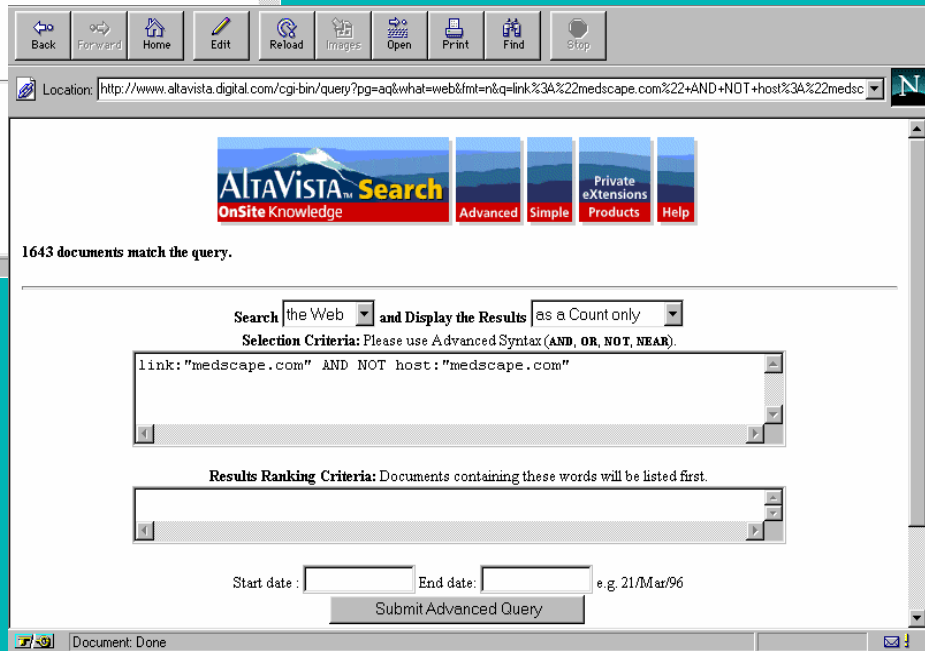
RATING SYSTEM FOR THE SIX SENSES

6-11	12-17	18-23	24-36

[Access Health Online Review](#) Score: 24.5

A national health information provider. Parent company of the popular Ask-A-Nurse service.

15% of 67K (at 28 bytes/sec)



Location: <http://www.altavista.digital.com/cgi-bin/query?pg=aq&what=web&fmt=n&q=link%3A%22medscape.com%22+AND+NOT+host%3A%22medscape.com%22>

AltaVista™ Search
OnSite Knowledge Advanced Simple Private eXtensions Products Help

1643 documents match the query.

Search and Display the Results

Selection Criteria: Please use Advanced Syntax (AND, OR, NOT, NEAR).

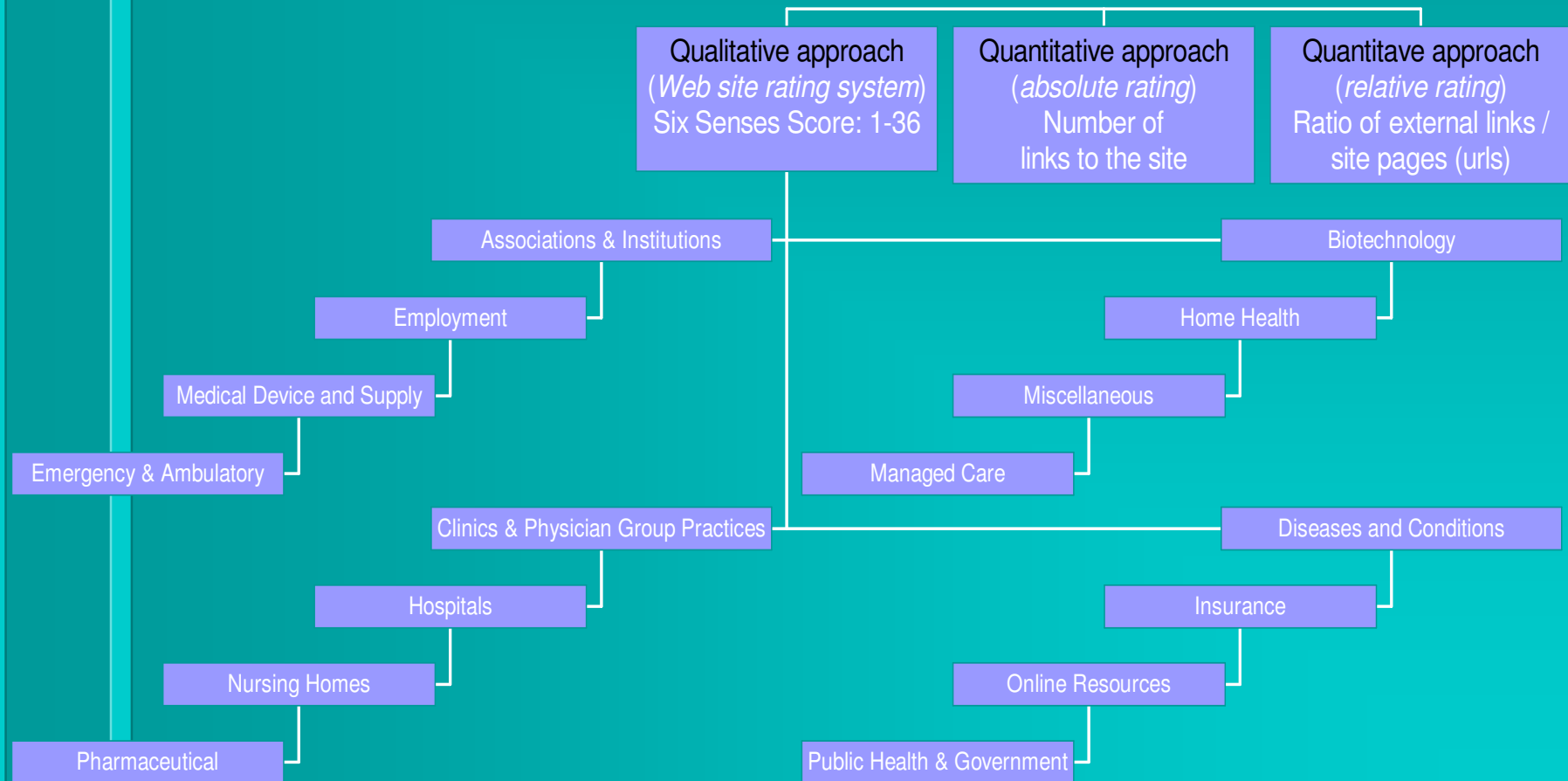
Results Ranking Criteria: Documents containing these words will be listed first.

Start date: End date: e.g. 21/Mar/96

Submit Advanced Query

Document: Done

Comparative Analysis



Biotechnology & Clinics

Biotechnology

		n	hosts	links	ratio	score
ExpASy Molecular Biology Server	expasy.hcuge.ch		619	9938	16,05	22.3
HeartWeb	webaxis.com/heartweb/index.htm		41	20	0,49	21.3
BioMet	www.biomet.com		42	96	2,29	24.0
BioSpace	www.biospace.com		6752	729	0,11	27.0
TransWeb Online	www.med.umich.edu/trans/transweb/twhome.html		1	319	319,00	23.3
		5	7455	11102	337,94	
	<i>Minimum</i>		1	20	0,11	
	<i>Maximum</i>		6752	9938	319,00	
	<i>Promedium</i>		1491	2220	67,59	

Clinics & Physician Group Practices

		n	hosts	links	ratio	score
Center for Human Reproduction	www.centerforhumanreprod.com		210	50	0,24	25.3
University of Washington IAIMS Program	www.hslib.washington.edu		835	1754	2,10	25.7
Atlanta Reproductive Health Centre	www.ivf.com		222	425	1,91	22.0
The Cheshire Medical Center	www.keenesentinel.com/~hospital/tcmc.shtml		1	62	62,00	21.0
Mayo Clinic	www.mayo.edu		68	83	1,22	23.3
Rush Alzheimer's Disease Center	www.rpslmc.edu/Med/RADC		1	8	8,00	24.7
Physician's Guide to the Internet	www.webcom.com/pgi		3	286	95,33	24.3
		7	1340	2668	170,81	
	<i>Minimum</i>		1	8	0,24	
	<i>Maximum</i>		835	1754	95,33	
	<i>Promedium</i>		191	381	24,40	

Diseases, Emergency, ...

Diseases and Conditions

		n	hosts	links	ratio	score
Chronic IllNet	www.calypte.com/		184	643	3,49	23.0
Children with Diabetes	www.castleweb.com/diabetes/		1015	411	0,40	33.7
Center for Disease Control	www.cdc.gov/		2098	14009	6,68	21.0
International Myeloma Foundation	www.comed.com/IMF/imf.html		1	289	289,00	21.0
Dr C's Ear, Nose and Throat Page	www.netdoor.com/com/entinfo/		20	5	0,25	19.7
OncoLink (UPenn)	www.oncolink.upenn.edu		1778	1824	1,03	28.0
Roxane Pain Institute	www.roxane.com		847	436	0,51	28.3
Rush Alzheimer's Disease Center	www.rpslmc.edu/Med/RADC		1	8	8,00	24.7
Infectious Disease in Children	www.slackinc.com/child/idc/idchome.htm		1	54	54,00	25.9
Melanoma Patients' Information Page	www.sonic.net/~jpat/getwell		6	18	3,00	29.3
World Health Network	www.worldhealth.net		181	49	0,27	20.3
		11	6132	17746	366,64	
	<i>Minimum</i>		1	5	0,25	
	<i>Maximum</i>		2098	14009	289,00	
	<i>Promedium</i>		557	1613	33,33	

Emergency & Ambulatory

		n	hosts	links	ratio	score
Mayo Clinic	www.mayo.edu		68	83	1,22	23.3
		1	68	83	1,22	

Employment

		n	hosts	links	ratio	score
MedSearch America	www.medsearch.com		699	3196	4,57	26.2
		1	699	3196	4,57	

Home Health

		n	hosts	links	ratio	score
Olsten Kimberly QualityCare	www.okqchomehealth.com		1	75	75,00	30.0
		1	1	75	75,00	

Hospitals, Insurance & Care

Hospitals

		n	hosts	links	ratio	score
HospitalWeb	neuro-www.mgh.harvard.edu/hospitalweb.ncl		1	597	597,00	24.0
The Virtual Hospital	vh.radiology.uiowa.edu/		1117	8193	7,33	30.5
Children's Medical Center of Dallas	www.childrens.com		107	77	0,72	27.33
Alpena Hospital	www.freeway.net/agh/		13	67	5,15	16.0
Health on the Net	www.hon.ch		121	170	1,40	33.6
		5	1359	9104	611,61	
	<i>Minimum</i>		1	67	0,72	
	<i>Maximum</i>		1117	8193	597,00	
	<i>Promedium</i>		272	1821	122,32	

Insurance

		n	hosts	links	ratio	score
First Integrated Health	www.fih.com		70	23	0,33	13.7
		1	70	23	0,33	

Managed Care

		n	hosts	links	ratio	score
Humana	www.humana.com		1	82	82,00	15.3
U.S. Healthcare	www.ushc.com		196	416	2,12	26.0
		2	197	498	84,12	
	<i>Minimum</i>		1	82	2,12	
	<i>Maximum</i>		196	416	82,00	
	<i>Promedium</i>		99	249	42,06	

Medical Device & Miscellaneous

Medical Device & Supply

		n	hosts	links	ratio	score
Med + Net	numedia.tddc.net/mednet		2	6	3,00	11.7
Baxter International	www.baxter.com	153	283	1,85	20.3	
Bristol-Myers Squibb	www.bms.com	43	526	12,23	23.7	
DesAcc	www.desacc.com	15	71	4,73	24.0	
Eli Lilly & Co.	www.lilly.com	553	3248	5,87	28.4	
Online Medical Sales Network	www.medsales.com	19	32	1,68	22.0	
Marquette Electronic	www.mei.com/	536	639	1,19	31.7	
MicroClimate Systems	www.microclimate.com	25	41	1,64	23.3	
MedInstrument Network	www.webcom.com/~mednet		1	99	99,00	14.8
		9	1347	4945	131,21	
	<i>Minimum</i>		1	6	1,19	
	<i>Maximum</i>		553	3248	99,00	
	<i>Promedium</i>		150	549	14,58	

Miscellaneous

		n	hosts	links	ratio	score
NetVet	netvet.wustl.edu		313	9992	31,92	27.0
The RenalNet Information Service	ns.gamewood.net/renalnet.html	1	426	426,00	24.5	
AIDS Quilt	www.aidsquilt.org	81	559	6,90	27.0	
Columbia/HCA Healthcare Corporation	www.columbia.net	1223	258	0,21	32.3	
NursingNet	www.communique.net/~nursgnt/	39	391	10,03	22.3	
ChronoNet	www.he.net/~chronow1	26	30	1,15	25.0	
Healthworks Online	www.healthworks.co.uk	846	301	0,36	24.0	
Medical Illustrator's Home Page	www.mednexus.com/med_illustrator/	1	950	950,00	28.3	
Thrive	www.pathfinder.com/thrive	1	2	2,00	31.7	
Physician's Guide to the Internet	www.webcom.com/pgi	3	286	95,33	24.3	
World Health Network	www.worldhealth.net	181	49	0,27	20.3	
Health Care Liability Alliance	www.wp.com/hcla		55	119	2,16	22.3
		12	2770	13363	1526,34	
	<i>Minimum</i>		1	2	0,21	
	<i>Maximum</i>		1223	9992	950,00	
	<i>Promedium</i>		231	1114	127,19	

Online Resources

Online Publications and Resources

		n	hosts	links	ratio	score
Mental Health Net	cmhc.com/mhn.htm		1	39	39,00	23.3
ExPASy Molecular Biology Server	expasy.hcuge.ch	619		9938	16,05	22.3
NetVet	netvet.wustl.edu	313		9992	31,92	27.0
HeartWeb	webaxis.com/heartweb/index.htm	41		20	0,49	21.3
Access Health Online	www.access-health.com	80		99	1,24	24.5
American Dental Association	www.ada.org/index.html	1		612	612,00	27.7
The American Journal of Nursing Company	www.ajn.org	757		870	1,15	28.8
American Medical Association	www.ama-assn.org/home/amahome.htm	1		192	192,00	24.0
Hardin Meta Directory of Internet Health	www.arcade.uiowa.edu/hardin-www/md.html	4		304	76,00	19.3
Women's Medical Health Page	www.best.com/~sirlou/wmhp.html	1		258	258,00	12.0
British Medical Journal	www.bmj.com/bmj/	1		2735	2735,00	14.5
Chronic IllNet	www.calypte.com/	184		643	3,49	23.0
Capnet Gateway Online Services	www.capnet.com	16		24	1,50	10.67
Children with Diabetes	www.castleweb.com/diabetes/	1015		411	0,40	33.7
Columbia/HCA Healthcare Corporation	www.columbia.net	1223		258	0,21	32.3
NursingNet	www.communicue.net/~nursngt/	39		391	10,03	22.7
Drug Info Net	www.drugintonet.com	152		135	0,89	20.1
WebDoctor	www.gretmar.com	479		357	0,75	26.7
HealthGate	www.healthgate.com	114		507	4,45	24.0
Health Net	www.health-net.com	251		119	0,47	12.7
Healthworks Online	www.healthworks.co.uk	846		301	0,36	24.0
Health on the Net	www.hon.ch	121		170	1,40	33.6
Health Services Journal	www.hsj.macmillan.com	15		55	3,67	25.3
University of Washington IAIMS Program	www.hslib.washington.edu	835		1754	2,10	25.7
Medicine on the Net	www.intac.com/~salenick/sa_med.html	1		0	0,00	10.0
MedAccess	www.medaccess.com	2936		611	0,21	25.5
MedNexus	www.mednexus.com/	564		1239	2,20	20.0
Medical Illustrator's Home Page	www.mednexus.com/med_illustrator/	1		950	950,00	28.3
MedScape	www.medscape.com	680		1712	2,52	32.0
Modern Healthcare	www.modernhealthcare.com	82		144	1,76	25.5
New England Journal of Medicine	www.nejm.org/	1293		702	0,54	29.3
Dr C's Ear, Nose and Throat Page	www.netdoor.com/com/entinfo/	20		5	0,25	19.7
NeuroSource	www.neurosource.com	23		103	4,48	19.7
CliniWeb	www.ohsu.edu/clinweb/	1		1307	1307,00	14.3
Thrive	www.pathfinder.com/thrive	1		2	2,00	31.7
PIE Online	www.pie.org	471		508	1,08	21.3
The Global Health Network	www.pitt.edu/HOME/GHNet/GHNet.html	1		1339	1339,00	19.3
Doctor's Guide to the Internet	www.pslgroup.com/docguide.htm	2		612	306,00	28.7
Medical Mall	www.rain.org/~medmall	4		86	21,50	18.0
Roxane Pain Institute	www.roxane.com	847		436	0,51	28.3
Infectious Diseases in Children	www.slackinc.com/child/idc/idchome.htm	1		54	54,00	26.0
MedInstrument Network	www.webcom.com/~mednet	1		99	99,00	14.8
Physician's Guide to the Internet	www.webcom.com/pgi	3		286	95,33	24.3
WellnessWeb Company	www.wellweb.com/welness	12		203	16,92	21.7
		44	14053	40582	8196,87	
	Minimum		1	0	0,00	
	Maximum		2936	9992	2735,00	
	Promedium		319	922	186,29	

Nursery & Pharmaceuticals

Nursing Homes & Long Term Care

WovenHearts Residential Assisted Living www.wovenhearts.com

n	hosts	links	ratio	score
	19	46	2,42	24.7
1	19	46	2,42	

Pharmaceuticals

Drug Info Net www.druginfonet.com

Eli Lilly & Co. www.lilly.com

PharmInfoNet www.pharminfo.com

n	hosts	links	ratio	score
	152	135	0,89	19.3
	553	3248	5,87	28.0
	805	6154	7,64	28.0
3	1510	9537	14,41	
	152	135	0,89	
	805	6154	7,64	
	503	3179	4,80	

Minimum

Maximum

Promedium

Public Health, Gov. & R+D

Public Health & Government

		n	hosts	links	ratio	score
Center for Disease Control	www.cdc.gov/cdc.htm/		1	871	871,00	21.0
Food and Drug Administration	www.fda.gov	4353	7322	1,68	27.0	
Healthcare Financing Administration	www.hcfa.gov	295	602	2,04	21.7	
TransWeb Online	www.med.umich.edu/trans/transweb/twhome.html	1	319	319,00	23.3	
PIE Online	www.pie.org	471	508	1,08	21.3	
		5	5121	9622	1194,80	
	<i>Minimum</i>		1	319	1,08	
	<i>Maximum</i>	4353	7322	871,00		
	<i>Promedium</i>	1024	1924	238,96		

Research & Educational Institutions

		n	hosts	links	ratio	score
Medical Education Information Center	medic.med.uth.tmc.edu		508	419	0,82	11.4
Creighton University School of Dentistry	mentor.creighton.edu/dental	1	33	33,00	24.7	
The Virtual Hospital	vh.radiology.uiowa.edu/	1117	8193	7,33	30.5	
American Dental Association	www.ada.org/index.html	1	612	612,00	27.7	
University of Arizona Health Sciences Center	www.ahsc.arizona.edu/opa	281	61	0,22	24.3	
American Medical Association	www.ama-assn.org/home/amahome.htm	1	192	192,00	24.0	
Department of Anesthesia, Penn State University	www.anes.hmc.psu.edu/AnesthHome.html	1	341	341,00	16.6	
Texas Medical Association-Medical Student Section	www.bcm.tmc.edu/ama-mss/	41	56	1,37	16.4	
Center for Human Reproduction	www.centerforhumanreprod.com	210	50	0,24	21.0	
Food and Drug Administration	www.fda.gov	4353	7322	1,68	27.0	
NYU Medical Center	www.med.nyu.edu/	8603	8222	0,96	22.6	
CliniWeb	www.ohsu.edu/clinweb/	1	1307	1307,00	14.6	
The Global Health Network	www.pitt.edu/HOME/GHNet/GHNet.html	1	1339	1339,00	19.3	
		13	15119	28147	3836,62	
	<i>Minimum</i>		1	33	0,22	
	<i>Maximum</i>	8603	8222	1339,00		
	<i>Promedium</i>	1163	2165	295,12		

Conclusions

■ Methodological

- Problems estimating citations from www links
- Samples not available for direct comparison

■ Cyberscience

- Hyperlink counts measures “success” inside the net
- As in scientometrics citation varies between subjects, with highest counts for the reference resources
- There is no correlation between “peer evaluation” and number of links
- Size of the cyberspace is increasing exponentially, so new analysis would be done in the future