



# Measuring Success:

## Performance Metrics in a Web-based World

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**National Oceanic and Atmospheric Administration**

SINI 2009: Summer Institute in Nursing Informatics  
July 24, 2009

A M E R I C A ' S O C E A N S A N D C O A S T S  
S A F E , H E A L T H Y , A N D P R O D U C T I V E

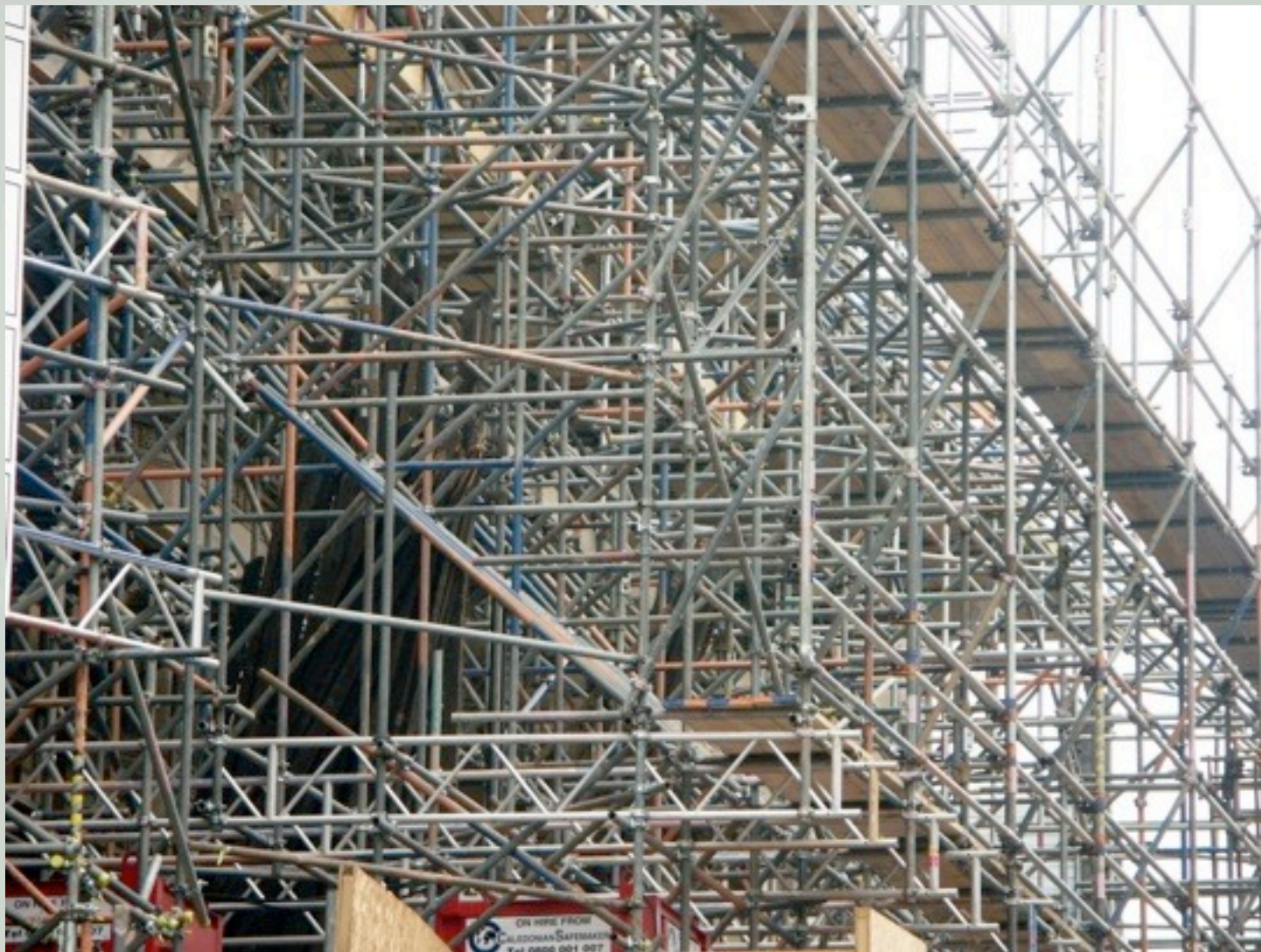
# What does your site look like

To the Business Owner (i.e., Dept. Chair, Agency Chief, etc.)



# What does your site look like

To the content provider (Web master, project director, etc.)



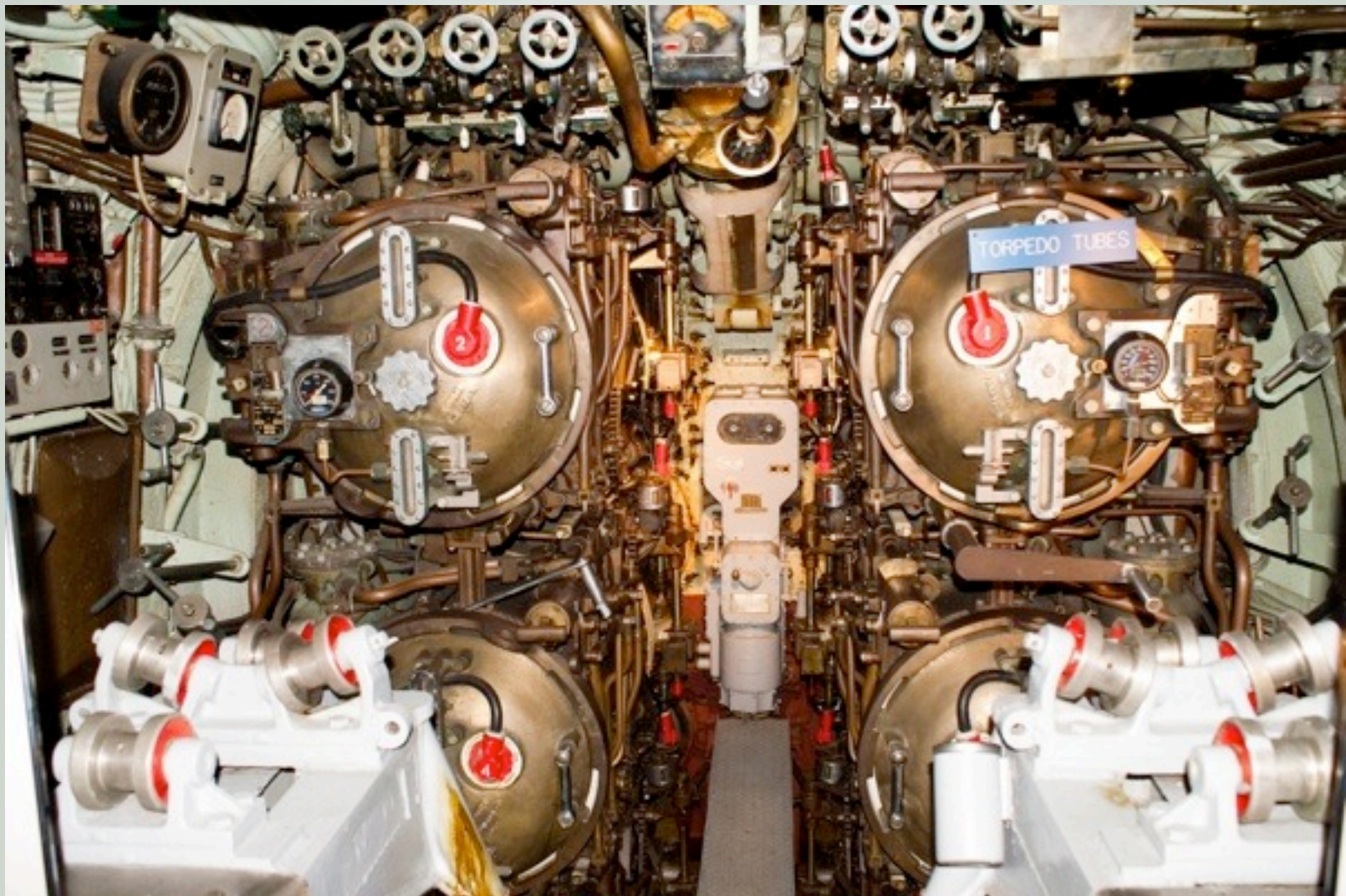
# What does your site look like

To the System Administrator (Sysadmin, IT guy, etc.)



# What does your site look like

To the visitor (public, users, constituents, etc.)



# What metrics do people want?

- Business owners: how many people visited
- Content providers: page views, attention to new content
- Researchers: who is visiting, and for what purpose
- Technical personnel: bandwidth utilization, site stability

# What metrics should you want?

- Business owners: page view trends, directory view trends, bandwidth trends
- Content providers: directory view trends, structural errors, missing content
- Researchers: content view trends, qualitative survey results
- Technical personnel: bandwidth utilization, site stability, attacks

# What metrics does public want?

**Public doesn't care about metrics. The public (i.e., *everybody* not involved in paying for, supervising, maintaining or providing content to the site) wants the right answer, now.**

**They don't care about your awards, your past accomplishments, your staff, your building – they just want answers.**



# What does a Web server log?

- Date and time
- What you request
- Where you came from
- Browser type
- Bytes transferred
- Numeric address (sorta) of your computer
- Status code (success, various types of failure)

# What is not logged

- Visitor name, age, gender, etc.
- What visitor was looking for
- Did visitor find it?
- Was visitor satisfied with what was found?
- Do visitor *trust* what was found?
- How will visitor use what was found?
- Do visitor have more confidence in some other site?

# First, you need to be found

- SINI Planning Committee sites:
- Creative Computing Solutions, Inc.: 262 URLs, 3 not found
- GE Health Care, 283 URLs, 4 not found
- Gugerty Consulting, 17 URLs, 0 not found
- St. John Fisher School of Nursing, 127 URLs, 0 not found
- Maryland School of Nursing, 1571 URLs, 36 not found
- Siemens Medical Solution: 1 URL (a redirect)
- McKesson, Aurora, IMIA: unable to get useful results (recursive loops)
- Two sites of mine:
  - 4212 URLs, 2 not found
  - 9548 URLs, 6 not found

# Good metrics require title tags

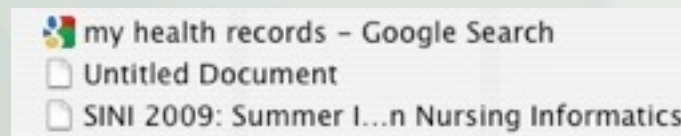
**SINI title tag at top of browser window, and in tab**



**HTML code for title tag**

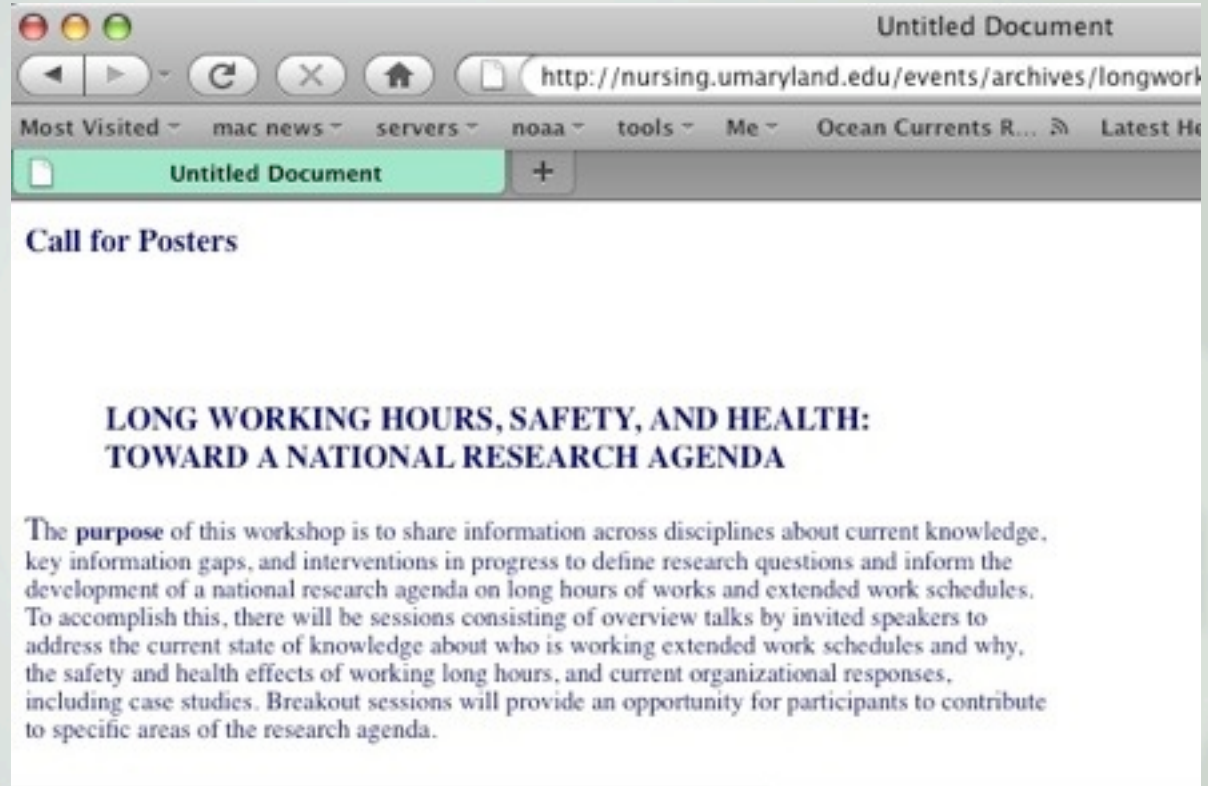
```
<html>
<head>
<title>SINI 2009: Summer Institute in Nursing Informatics</title>
<meta HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=iso-8859-1">
<style TYPE="text/css" MEDIA="screen">
@import "scripts/002.css";
</style>
```

**Title tag is default bookmark entry**

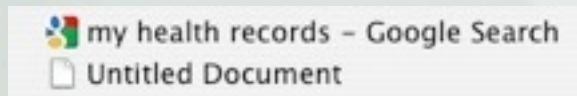


# Good metrics require title tags

Untitled pages are much harder to index, and far lower in search results, if they rank at all.



Bookmarks for untitled pages make no sense



# Not so good title tags: Part I

- [CCSi Project Details](#)
  - [CCSi Success Stories - Printer Friendly](#)
- [CCSi Project Details](#)
  - [CCSi Success Stories - Printer Friendly](#)
- [CCSi Project Details](#)
  - [CCSi Success Stories - Printer Friendly](#)
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- [CCSi Project Details](#)
  - [CCSi Success Stories - Printer Friendly](#)
- [CCSi Project Details](#)
  - [CCSi Success Stories - Printer Friendly](#)

- [Page 1](#)
- [About us](#)
- [CISIES Administrations](#)
- [Downloads](#)
- [Resources](#)

- [GE Healthcare-Product Technology -Healthcare Information Technology](#)
  - [GE Healthcare-Product Features -Centricity RIS](#)
  - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
  - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
  - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
  - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
  - [GE Healthcare-Product Technology-Healthcare Information Technology](#)
  - [GE Healthcare-Product Technology-Healthcare Information Technology](#)
  - [GE Healthcare-Product Technology-Healthcare Information Technology](#)

# Not so good title tags: Part II

- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)

- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
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- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)

NOAA

# What's wrong with these tags?

- [Susan Antol - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Tonya Appleby - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [R. Barker Bausell - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Kay Blum - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Rebecca Brotemarkle - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Blanche Brown - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Marjorie Buchanan - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Charon Burda - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Karen Clark - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Laurie Conway - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Joan M. Davenport - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Barbara A. Dobish - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Susan G. Dorsey - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Elizabeth Duckham - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)



# Good metrics require structure

[The University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)

- [Site Map - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [About this Website - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [About this Web site - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [About this Website - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [Office of the Webmaster - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [The University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [About the University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [More About the University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [The School and Its Community - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [More About the University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Welcome from the Dean - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [News and Press Releases - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
  - [News and Press Releases - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
    - [University of Maryland School of Nursing News](#)
    - [University of Maryland School of Nursing News](#)
    - [University of Maryland School of Nursing News](#)
      - [Document Moved](#)
        - [DNP Program - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
    - [University of Maryland School of Nursing News](#)
    - [University of Maryland School of Nursing News](#)
    - [University of Maryland School of Nursing News](#)
    - [University of Maryland School of Nursing News](#)
    - [University of Maryland School of Nursing News](#)

# Good structure permits varied metrics

Time	Referrers	Content	Visitors	Visits	Problems
<a href="#">Hourly</a>	<a href="#">Domains</a>	<a href="#">Pages</a>	<a href="#">Countries</a>	<a href="#">Entry Point</a>	<a href="#">Bad Links</a>
<a href="#">Daily</a>	<a href="#">Referrers</a>	<a href="#">Downloads</a>	<a href="#">Visitors</a>	<a href="#">Exit Point</a>	<a href="#">Failed Refers</a>
<a href="#">Weekly</a>	<a href="#">Search Engines</a>	<a href="#">Graphics</a>	<a href="#">Browsers</a>	<a href="#">1 Page Visits</a>	<a href="#">Gaps in Service</a>
<a href="#">Monthly</a>	<a href="#">Search Words</a>	<a href="#">Other Requests</a>	<a href="#">Computers</a>	<a href="#">Steps</a>	<a href="#">Hijacking</a>
<a href="#">Quarterly</a>	<a href="#">Search Phrases</a>	<a href="#">All Requests</a>	<a href="#">Robots</a>	<a href="#">X per Y</a>	<a href="#">Failed Requests</a>
<a href="#">Yearly</a>	<a href="#">To/From</a>	<a href="#">by Group</a>	<a href="#">Auth Users</a>	<a href="#">Recent</a>	<a href="#">Explanations</a>
<a href="#">Cyclic Totals</a>		<a href="#">by Directory</a>		<a href="#">Duration</a>	<a href="#">Least Requested</a>
		<a href="#">by Type</a>		<a href="#">View Time</a>	<a href="#">Reloads</a>
General	Bandwidth	Paths	Custom	Details	
<a href="#">Overview</a>	<a href="#">Peak</a>	<a href="#">by Source</a>	<a href="#">Ref. Domains</a>	<a href="#">Log Fields</a>	
<a href="#">Program Status</a>	<a href="#">by Request</a>	<a href="#">by Destination</a>		<a href="#">Local Search</a>	
<a href="#">Servers</a>	<a href="#">by Directory</a>	<a href="#">Paths</a>		<a href="#">Domains</a>	
	<a href="#">by Type</a>				
	<a href="#">Transfers</a>				

# Metrics for business owners

Time	Referrers	Content	Visitors	Visits	Problems
<a href="#">Hourly</a>	<a href="#">Domains</a>	<a href="#">Pages</a>	<a href="#">Countries</a>	<a href="#">Entry Point</a>	<a href="#">Bad Links</a>
<a href="#">Daily</a>	<a href="#">Referrers</a>	<a href="#">Downloads</a>	<a href="#">Visitors</a>	<a href="#">Exit Point</a>	<a href="#">Failed Refers</a>
<a href="#">Weekly</a>	<a href="#">Search Engines</a>	<a href="#">Graphics</a>	<a href="#">Browsers</a>	<a href="#">1 Page Visits</a>	<a href="#">Gaps in Service</a>
<a href="#">Monthly</a>	<a href="#">Search Words</a>	<a href="#">Other Requests</a>	<a href="#">Computers</a>	<a href="#">Steps</a>	<a href="#">Hijacking</a>
<a href="#">Quarterly</a>	<a href="#">Search Phrases</a>	<a href="#">All Requests</a>	<a href="#">Robots</a>	<a href="#">X per Y</a>	<a href="#">Failed Requests</a>
<a href="#">Yearly</a>	<a href="#">To/From</a>	<a href="#">by Group</a>	<a href="#">Auth Users</a>	<a href="#">Recent</a>	<a href="#">Explanations</a>
<a href="#">Cyclic Totals</a>		<a href="#">by Directory</a>		<a href="#">Duration</a>	<a href="#">Least Requested</a>
		<a href="#">by Type</a>		<a href="#">View Time</a>	<a href="#">Reloads</a>
General	Bandwidth	Paths	Custom	Details	
<a href="#">Overview</a>	<a href="#">Peak</a>	<a href="#">by Source</a>	<a href="#">Ref. Domains</a>	<a href="#">Log Fields</a>	
<a href="#">Program Status</a>	<a href="#">by Request</a>	<a href="#">by Destination</a>		<a href="#">Local Search</a>	
<a href="#">Servers</a>	<a href="#">by Directory</a>	<a href="#">Paths</a>		<a href="#">Domains</a>	
	<a href="#">by Type</a>				
	<a href="#">Transfers</a>				

# Metrics for content providers

<b>Time</b> <a href="#">Hourly</a> <a href="#">Daily</a> <a href="#">Weekly</a> <a href="#">Monthly</a> <a href="#">Quarterly</a> <a href="#">Yearly</a> <a href="#">Cyclic Totals</a>	<b>Referrers</b> <a href="#">Domains</a> <a href="#">Referrers</a> <a href="#">Search Engines</a> <a href="#">Search Words</a> <a href="#">Search Phrases</a> <a href="#">To/From</a>	<b>Content</b> <a href="#">Pages</a> <a href="#">Downloads</a> <a href="#">Graphics</a> <a href="#">Other Requests</a> <a href="#">All Requests</a> <a href="#">by Group</a> <a href="#">by Directory</a> <a href="#">by Type</a>	<b>Visitors</b> <a href="#">Countries</a> <a href="#">Visitors</a> <a href="#">Browsers</a> <a href="#">Computers</a> <a href="#">Robots</a> <a href="#">Auth Users</a>	<b>Visits</b> <a href="#">Entry Point</a> <a href="#">Exit Point</a> <a href="#">1 Page Visits</a> <a href="#">Steps</a> <a href="#">X per Y</a> <a href="#">Recent</a> <a href="#">Duration</a> <a href="#">View Time</a>	<b>Problems</b> <a href="#">Bad Links</a> <a href="#">Failed Refers</a> <a href="#">Gaps in Service</a> <a href="#">Hijacking</a> <a href="#">Failed Requests</a> <a href="#">Explanations</a> <a href="#">Least Requested</a> <a href="#">Reloads</a>
<b>General</b> <a href="#">Overview</a> <a href="#">Program Status</a> <a href="#">Servers</a>	<b>Bandwidth</b> <a href="#">Peak</a> <a href="#">by Request</a> <a href="#">by Directory</a> <a href="#">by Type</a> <a href="#">Transfers</a>	<b>Paths</b> <a href="#">by Source</a> <a href="#">by Destination</a> <a href="#">Paths</a>	<b>Custom</b> <a href="#">Ref. Domains</a>	<b>Details</b> <a href="#">Log Fields</a> <a href="#">Local Search</a> <a href="#">Domains</a>	

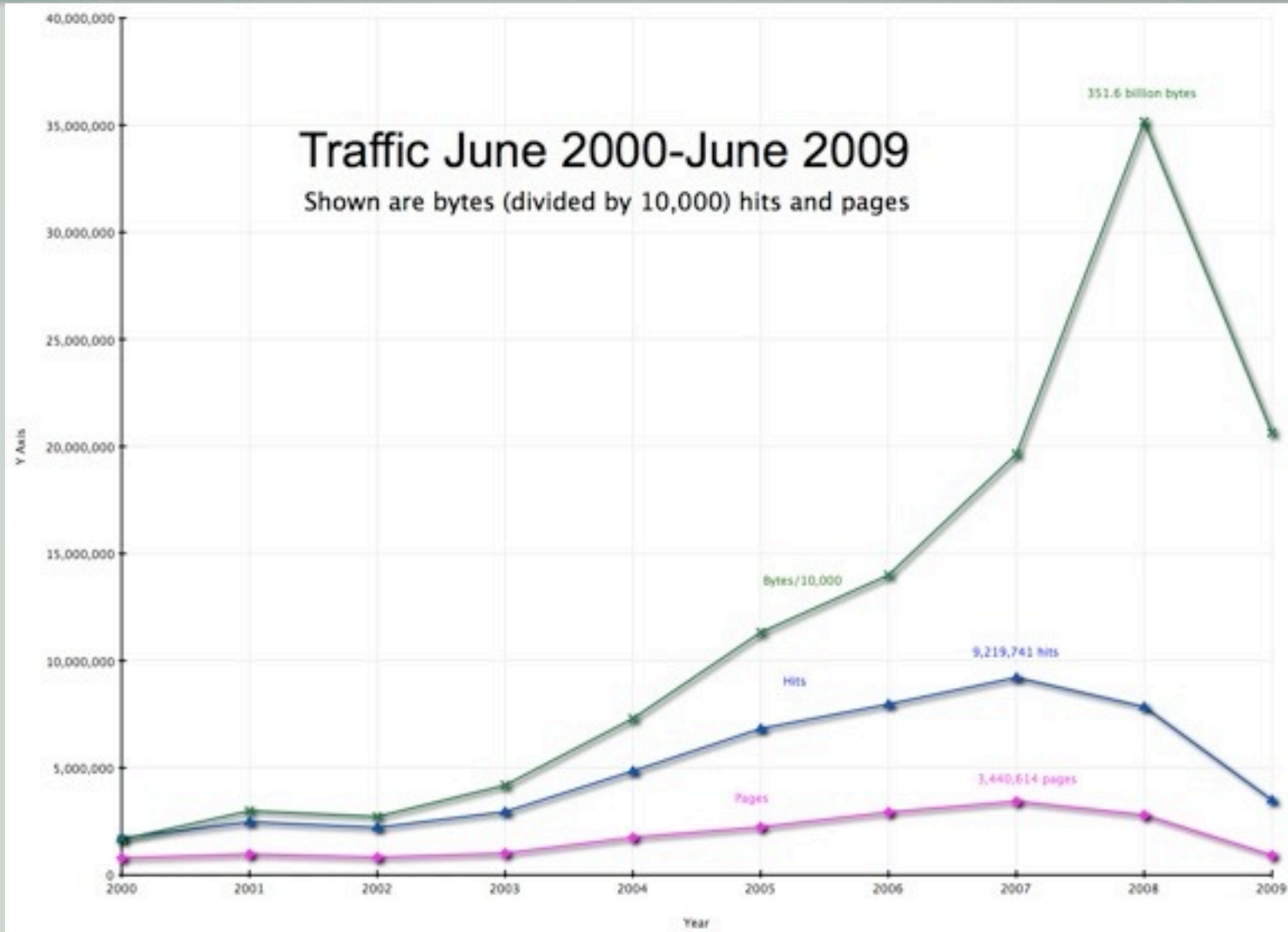
# Metrics for researchers

<b>Time</b> <a href="#">Hourly</a> <a href="#">Daily</a> <a href="#">Weekly</a> <a href="#">Monthly</a> <a href="#">Quarterly</a> <a href="#">Yearly</a> <a href="#">Cyclic Totals</a>	<b>Referrers</b> <a href="#">Domains</a> <a href="#">Referrers</a> <a href="#">Search Engines</a> <a href="#">Search Words</a> <a href="#">Search Phrases</a> <a href="#">To/From</a>	<b>Content</b> <a href="#">Pages</a> <a href="#">Downloads</a> <a href="#">Graphics</a> <a href="#">Other Requests</a> <a href="#">All Requests</a> <a href="#">by Group</a> <a href="#">by Directory</a> <a href="#">by Type</a>	<b>Visitors</b> <a href="#">Countries</a> <a href="#">Visitors</a> <a href="#">Browsers</a> <a href="#">Computers</a> <a href="#">Robots</a> <a href="#">Auth Users</a>	<b>Visits</b> <a href="#">Entry Point</a> <a href="#">Exit Point</a> <a href="#">1 Page Visits</a> <a href="#">Steps</a> <a href="#">X per Y</a> <a href="#">Recent</a> <a href="#">Duration</a> <a href="#">View Time</a>	<b>Problems</b> <a href="#">Bad Links</a> <a href="#">Failed Refers</a> <a href="#">Gaps in Service</a> <a href="#">Hijacking</a> <a href="#">Failed Requests</a> <a href="#">Explanations</a> <a href="#">Least Requested</a> <a href="#">Reloads</a>
<b>General</b> <a href="#">Overview</a> <a href="#">Program Status</a> <a href="#">Servers</a>	<b>Bandwidth</b> <a href="#">Peak</a> <a href="#">by Request</a> <a href="#">by Directory</a> <a href="#">by Type</a> <a href="#">Transfers</a>	<b>Paths</b> <a href="#">by Source</a> <a href="#">by Destination</a> <a href="#">Paths</a>	<b>Custom</b> <a href="#">Ref. Domains</a>	<b>Details</b> <a href="#">Log Fields</a> <a href="#">Local Search</a> <a href="#">Domains</a>	

# Metrics for technical specialists

Time	Referrers	Content	Visitors	Visits	Problems
<a href="#">Hourly</a>	<a href="#">Domains</a>	<a href="#">Pages</a>	<a href="#">Countries</a>	<a href="#">Entry Point</a>	<a href="#">Bad Links</a>
<a href="#">Daily</a>	<a href="#">Referrers</a>	<a href="#">Downloads</a>	<a href="#">Visitors</a>	<a href="#">Exit Point</a>	<a href="#">Failed Refers</a>
<a href="#">Weekly</a>	<a href="#">Search Engines</a>	<a href="#">Graphics</a>	<a href="#">Browsers</a>	<a href="#">1 Page Visits</a>	<a href="#">Gaps in Service</a>
<a href="#">Monthly</a>	<a href="#">Search Words</a>	<a href="#">Other Requests</a>	<a href="#">Computers</a>	<a href="#">Steps</a>	<a href="#">Hijacking</a>
<a href="#">Quarterly</a>	<a href="#">Search Phrases</a>	<a href="#">All Requests</a>	<a href="#">Robots</a>	<a href="#">X per Y</a>	<a href="#">Failed Requests</a>
<a href="#">Yearly</a>	<a href="#">To/From</a>	<a href="#">by Group</a>	<a href="#">Auth Users</a>	<a href="#">Recent</a>	<a href="#">Explanations</a>
<a href="#">Cyclic Totals</a>		<a href="#">by Directory</a>		<a href="#">Duration</a>	<a href="#">Least Requested</a>
		<a href="#">by Type</a>		<a href="#">View Time</a>	<a href="#">Reloads</a>
General	Bandwidth	Paths	Custom	Details	
<a href="#">Overview</a>	<a href="#">Peak</a>	<a href="#">by Source</a>	<a href="#">Ref. Domains</a>	<a href="#">Log Fields</a>	
<a href="#">Program Status</a>	<a href="#">by Request</a>	<a href="#">by Destination</a>		<a href="#">Local Search</a>	
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	<a href="#">by Type</a>				
	<a href="#">Transfers</a>				

# Classic metrics: hits, pages, bytes



# Classic metrics: visitors

## Which second level domains did the most requests come from?

Second Level Domain ?	% of Pages ?	Pages ?	Hits ?	GigaBytes ?
googlebot.com	15.94%	866,239	1,061,535	45.0G
(Unknown)	13.50%	733,590	7,775,799	172.4G
other.yahoo.net	10.02%	544,894	680,609	194.4G
noaa.gov	5.57%	302,512	832,016	31.2G
searchme.com	3.04%	165,367	168,047	2.6G
comcast.net	2.82%	153,120	2,521,819	67.5G
search.msn.com	2.74%	149,179	173,742	13.8G
verizon.net	2.29%	124,643	1,366,233	48.5G
rr.com	2.23%	121,309	1,747,224	42.0G
ask.com	1.60%	87,055	338,758	4.6G
cuill.com	1.57%	85,155	112,733	1.8G
attens.net	1.03%	55,951	62,194	0.8G
sbcglobal.net	0.94%	51,063	770,388	19.4G
dotnetdotcom.org	0.93%	50,323	51,195	0.5G
cox.net	0.85%	46,078	766,503	18.4G



# Classic metrics: top-level domains

## Which top level domains did the most requests come from?

Most top level domains correspond to a single country but some of the common ones, such as .net and .com, are used internationally.

Top Level Domain ?	Description ?	% of Pages ?	Pages ?	Hits ?	GigaBytes ?
com	Commercial, frequently U.S.	36.70%	1,995,118	7,982,607	222.2G
net	Network Providers	27.59%	1,499,622	12,955,019	508.1G
(Unknown)	Numeric IP Address	13.50%	733,590	7,775,799	172.4G
gov	U.S. Federal Government	6.10%	331,841	1,035,304	36.1G
org	Organizations, mostly U.S.	1.60%	87,174	568,777	11.3G
edu	U.S. Educational Institutions	1.57%	85,282	1,133,420	25.1G
us	United States	1.31%	71,345	1,051,072	23.8G
hu	Hungary	0.85%	46,157	181,876	18.4G
gbl	Unknown	0.79%	43,137	50,063	3.0G
ca	Canada	0.77%	42,068	576,930	13.5G
jp	Japan	0.66%	35,819	262,269	12.1G
uk	United Kingdom	0.60%	32,570	432,103	9.7G
au	Australia	0.59%	32,197	442,100	9.2G

# Classic metrics: pages

## How often have pages been requested each of the last fourteen months?

Request ?	Pages ?	Dec 2008	Nov 2008	Oct 2008	Sep 2008	Aug 2008	Jul 2008	Jun 2008
/	923,141	55,369	57,231	73,743	86,422	76,499	63,706	174,900
<a href="#">/websites/retiredsites/supp_sotc_retired.html</a>	118,188	2,897	3,004	3,282	2,724	3,980	4,076	4,054
<a href="#">/robots.txt</a>	109,506	11,903	8,640	13,831	9,312	8,239	8,448	8,062
<a href="#">/dataexplorer/</a>	102,798	7,536	6,721	8,397	8,227	8,875	9,335	9,904
<a href="#">/education/</a>	80,597	5,782	7,003	8,487	7,667	6,511	7,087	7,855
<a href="#">/websites/retiredsites/supp_SSEretired.html</a>	37,066	2,537	2,463	2,376	2,107	3,391	3,506	3,575
<a href="#">/education/kits/tides/</a>	35,519	2,069	2,844	4,160	2,909	1,565	2,026	2,404
<a href="#">/topics/navops/marinenav/</a>	34,364	2,164	2,542	2,651	3,493	3,434	3,515	3,077
<a href="#">/education/kits/corals/</a>	32,412	2,597	3,143	3,365	2,220	1,743	2,077	2,565
<a href="#">/education/kits/tides/tides01_intro.html</a>	30,421	1,711	2,363	3,683	3,069	1,149	1,320	1,630
<a href="#">/education/kits/tides/tides06_variations.html</a>	27,784	1,501	1,949	3,145	2,641	1,074	1,336	2,003

# Classic metrics: downloads

How often have downloads been requested each of the last fourteen months?

Request ?	Hits ?	Dec 2008	Nov 2008	Oct 2008	Sep 2008	Aug 2008	Jul 2008
<a href="#">/programs/mb/pdfs/coastal_pop_trends_complete.pdf</a>	58,015	4,114	5,698	5,690	5,809	3,039	3,338
<a href="#">/websites/retiredsites/sse_pdf/sse.pdf</a>	47,185	4,288	1,242	1,746	3,606	408	4,827
<a href="#">/websites/retiredsites/sotc_pdf/POP.PDF</a>	27,056	2,832	4,052	3,939	3,156	1,188	1,175
<a href="#">/websites/retiredsites/sotc_pdf/hab.pdf</a>	15,869	1,363	1,475	1,860	1,242	894	1,224
<a href="#">/education/for_fun/EndangeredSpeciesOrigami.pdf</a>	11,206	2,717	1,599	1,739	1,562	1,094	1,060
<a href="#">/education/classroom/lessons/18_marinenav_plotcourse.pdf</a>	10,369	1,020	845	1,161	931	914	1,022
<a href="#">/products/hypox_t1final.pdf</a>	10,350	1,022	1,740	1,181	687	372	541
<a href="#">/products/hypox_final.pdf</a>	9,907	897	298	417	614	491	506
<a href="#">/education/for_fun/BuildUnderwaterRobot.pdf</a>	9,677	1,597	1,558	1,641	1,807	1,240	968
<a href="#">/education/kits/corals/lessons/coral_mgmt.pdf</a>	9,207	403	509	526	427	329	282

# Classic metrics: bandwidth

How has traffic varied from month to month?

Date ?	Pages ?	Hits ?	Errors ?	Unique Hosts ?	MBytes ?	Visits ?	Visits ?
January 2008	289,804	2,040,716	82,736	49,070	47,886M	150,031	
February 2008	273,044	1,968,856	54,950	49,445	48,003M	147,171	
March 2008	374,284	2,385,639	57,109	58,457	51,449M	165,580	
April 2008	352,936	2,483,096	38,342	59,308	69,895M	190,907	
May 2008	343,147	2,370,857	34,493	60,673	65,179M	191,890	
June 2008	397,330	1,980,968	35,836	58,022	60,327M	166,189	
July 2008	275,592	1,919,432	27,509	53,297	56,892M	155,934	
August 2008	289,022	2,211,937	21,563	60,140	61,133M	157,287	
September 2008	344,750	3,125,795	33,899	77,536	74,654M	183,844	
October 2008	390,970	3,175,649	65,170	59,494	81,460M	171,174	
November 2008	332,555	3,383,588	42,452	56,334	75,215M	165,643	
December 2008	290,370	3,144,204	34,897	48,821	65,989M	156,569	

# Not so classic metric: directory traffic

How many requests have been made for content in each top level directory each of the last fourteen months?

Directory ?	Hits ?	Dec 2008	Nov 2008	Oct 2008	Sep 2008	Aug 2008	Jul 2008
/siteart/	10,365,649	766,157	875,156	978,135	1,321,411	937,267	747,684
/education/	7,604,943	561,862	764,635	918,940	767,222	433,777	441,089
/images/	1,843,540	717,170	725,280	401,090	0	0	0
/	1,644,175	108,722	110,550	135,916	156,297	130,858	110,621
/topics/	1,368,325	76,176	99,838	114,030	146,710	120,628	113,674
/includes/	1,111,513	22,901	27,225	68,042	166,307	125,277	99,356
/homeart/	998,714	46	106	53,797	188,838	136,497	98,335
/styles/	911,671	30,971	35,329	63,216	130,955	98,526	81,074
/js/	567,561	210,290	219,398	132,006	4,068	1,279	520
/news/	563,181	168,379	144,396	55,141	23,390	24,171	24,540
/dataexplorer/	483,764	29,766	31,654	35,200	39,871	40,203	44,241
/websites/	472,216	31,944	30,137	32,223	33,391	29,551	33,487
/programs/	449,499	30,864	35,906	43,574	37,211	32,187	33,698
/cgi-bin/	386,731	21,407	21,063	28,830	30,958	35,424	34,463
/css/	273,619	111,774	111,059	49,529	839	288	130
/foresee/	267,714	181,638	86,076	0	0	0	0
/kids/	189,127	8,548	11,451	14,109	32,653	20,026	11,691
/about/	121,857	6,955	7,242	10,632	10,391	10,983	11,433

# Not so classic metric: file type

## Which file types were requested most frequently?

Extension ?	Description ?	% of Hits ?	Hits ?	Errors ?	% of Bytes ?	GigaBytes ?
jpg	JPEG Images	35.93%	10,846,880	0	13.14%	97.2G
gif	GIF Images	24.79%	7,484,108	0	2.91%	21.6G
css	Cascading Style Sheets	9.41%	2,840,618	0	1.52%	11.2G
js	JavaScript	7.15%	2,159,906	0	2.97%	22.0G
/	Web Pages	6.43%	1,940,022	0	7.01%	51.9G
html	HTML Pages	6.31%	1,903,946	0	4.47%	33.1G
png	PNG Images	3.03%	913,768	0	0.30%	2.2G
pdf	Adobe PDF Documents	2.33%	703,260	0	50.95%	376.7G
ico	Windows Icons	1.62%	488,680	0	0.01%	0.1G
cgi	CGI Scripts	1.28%	386,781	0	0.05%	0.4G
xml	Extensible Markup Language	0.39%	118,388	0	0.43%	3.2G
txt	Plain Text	0.36%	109,514	0	0.00%	0.0G
swf	Shockwave Flash	0.28%	83,563	0	1.14%	8.4G
PDF	Unknown	0.25%	75,728	0	5.93%	43.9G
(None)	Unknown	0.13%	38,494	0	0.00%	0.0G
wmv	Windows Media Video	0.10%	28,779	0	2.65%	19.6G
mov	Quick Time Movies	0.08%	23,575	0	3.42%	25.3G
JPG	Unknown	0.08%	22,922	0	0.06%	0.5G

# Not so classic metric: bad links

## Which pages refer to content which does not exist or has other errors?

Click on a referrer to see which requests it refers to.

<u>Referrer ?</u>	<u>Hits ?</u>
<a href="#">/gallery/maps/maps.html</a>	23,655
<a href="#">/gallery/cultural/cultural.html</a>	14,931
<a href="#">/downloads/noaa_oe.iso</a>	13,828
<a href="#">/downloads/NOAA_OE2003.iso</a>	12,765
<a href="#">/explorations/04titanic/</a>	12,455
<a href="#">/gallery/livingocean/livingocean_fish.html</a>	10,965
<a href="#">/</a>	10,836
<a href="#">/explorations/06fire/background/marianaarc/marianaarc.html</a>	10,695
<a href="#">/technology/subs/alvin/alvin.html</a>	9,939
<a href="#">/gallery/livingocean/livingocean_inverts.html</a>	9,336
<a href="#">/gallery/livingocean/livingocean.html</a>	8,830
<a href="#">/gallery/sound/sound.html</a>	8,397
<a href="#">/explorations/03titanic/</a>	7,158

# Not so classic metric: hackers

0.4	92	06/30/09	/images/cluetip_img/darrowright.gif Local refer problem: <a href="/css/jquery.cluetip.css">/css/jquery.cluetip.css</a> /
0.4	67	06/29/09	/hw3.php No information available
0.4	54	06/29/09	/education/ External refer problem: <a href="http://teamssoftn.org/links.htm">http://teamssoftn.org/links.htm</a>
			/mapfinder/products/tsheets/ External refer problem:

4.3	4,593	12/30/05	/_vti_bin/owssvr.dll Possible check for support of the Microsoft IE discussion feature.
4.3	4,567	12/30/05	/MSOffice/cltreq.asp <a href="#">NIMDA worm</a>



# Not so classic metric: reloads

## Which requests were frequently made twice in a row in a single visit?

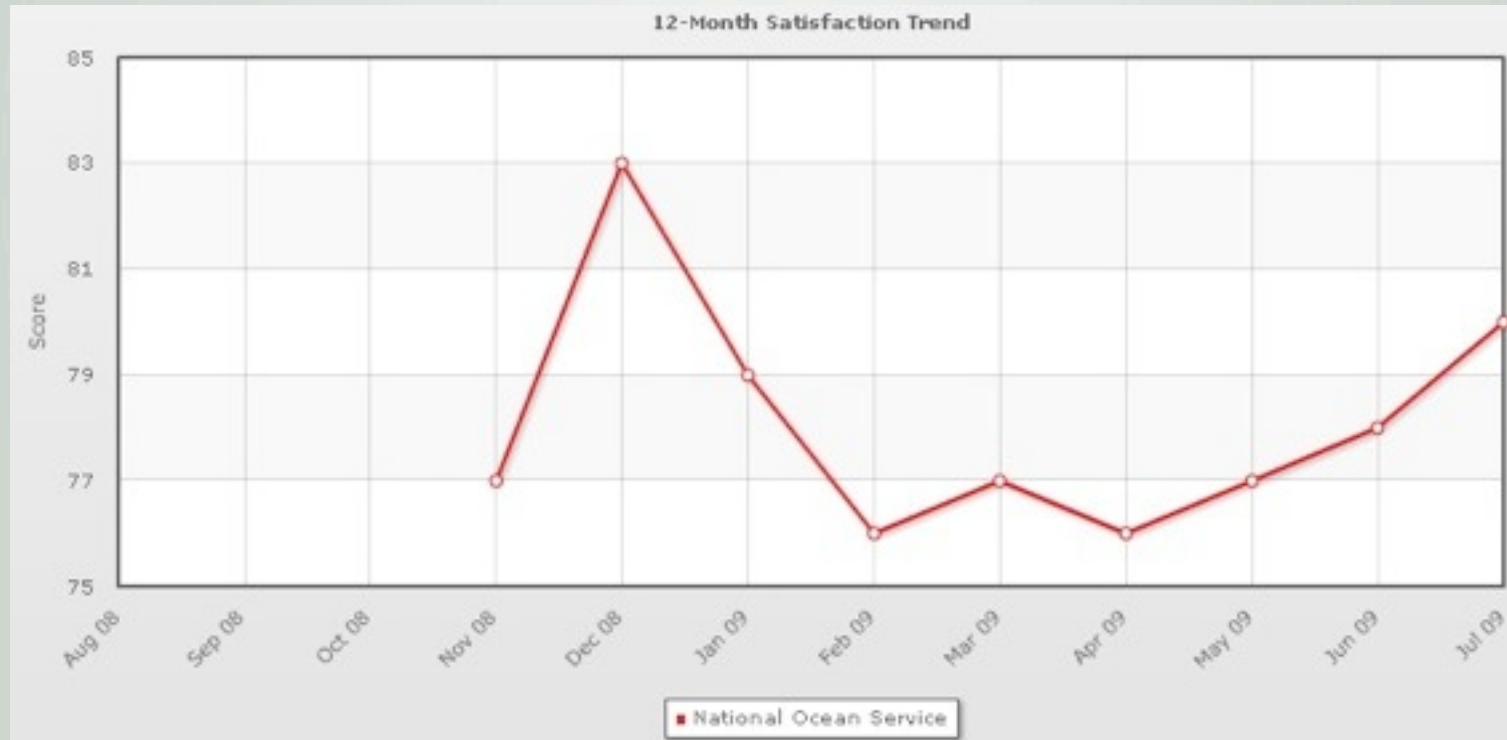
Reloads ?	Reloads % of Hits ?	Hits ?	Errors ?	GigaBytes ?	Request ?
12,382,174	79.22%	15,629,877	12	281.2G	<a href="#">/data_menu.shtml</a>
10,218,308	96.43%	10,596,247	1,700	420.5G	<a href="#">/data_listing.shtml</a>
5,515,287	101.70%	5,422,900	103,454	3.6G	<a href="#">/cgi-bin/PORTS_Archives/dataview.cgi</a>
2,801,780	87.69%	3,195,072	0	23.2G	<a href="#">/ports/ports_data.shtml</a>
1,603,236	36.74%	4,363,759	27,534	35.3G	<a href="#">/cgi-bin-mp/data_plot.cgi</a>
1,375,373	77.50%	1,774,701	286	147.7G	<a href="#">/get_predc.shtml</a>
1,284,600	82.55%	1,556,070	550	20.3G	<a href="#">/cgi-bin/map/odinmap.cgi</a>
1,229,700	90.58%	1,357,614	4,610	7.6G	<a href="#">/portsscreen/services/portsconditions</a>
1,046,640	73.17%	1,430,490	0	9.2G	<a href="#">/myports/ports.xml</a>
1,021,658	45.11%	2,264,635	433	90.7G	<a href="#">/get_predictions.shtml</a>
990,301	72.18%	1,371,911	0	92.7G	<a href="#">/myports/myports.xml</a>
641,403	54.41%	1,178,783	515	1.0G	<a href="#">/cgi-bin/quicklook/quicklook_rss.cgi</a>
637,043	89.40%	712,549	80	5.2G	<a href="#">/ports_screens/tbscreen.shtml</a>
563,005	74.53%	755,374	78	5.6G	<a href="#">/ports_screens/hgscreen.shtml</a>
541,888	95.04%	570,159	115	28.4G	<a href="#">/myports/data.shtml</a>
532,985	79.70%	668,771	0	5.8G	<a href="#">/cbports/cbAllMET_inset.html</a>
509,659	60.39%	844,017	1,621	14.3G	/
498,317	85.03%	586,057	122	3.9G	<a href="#">/ports_data.shtml</a>

# Not so classic metric: phones

iPhone	0.29%	7,342	74,333	0.9G
Linux	0.22%	5,650	67,459	1.1G
Windows 3.1	0.14%	3,471	104,989	0.6G
Windows 95	0.11%	2,805	7,869	0.1G

# Qualitative metrics: Forsee ACSI

**Forsee “American Customer Satisfaction Index,”**  
<http://www.foreseeresults.com/>



# Qualitative metrics: 30 day trend



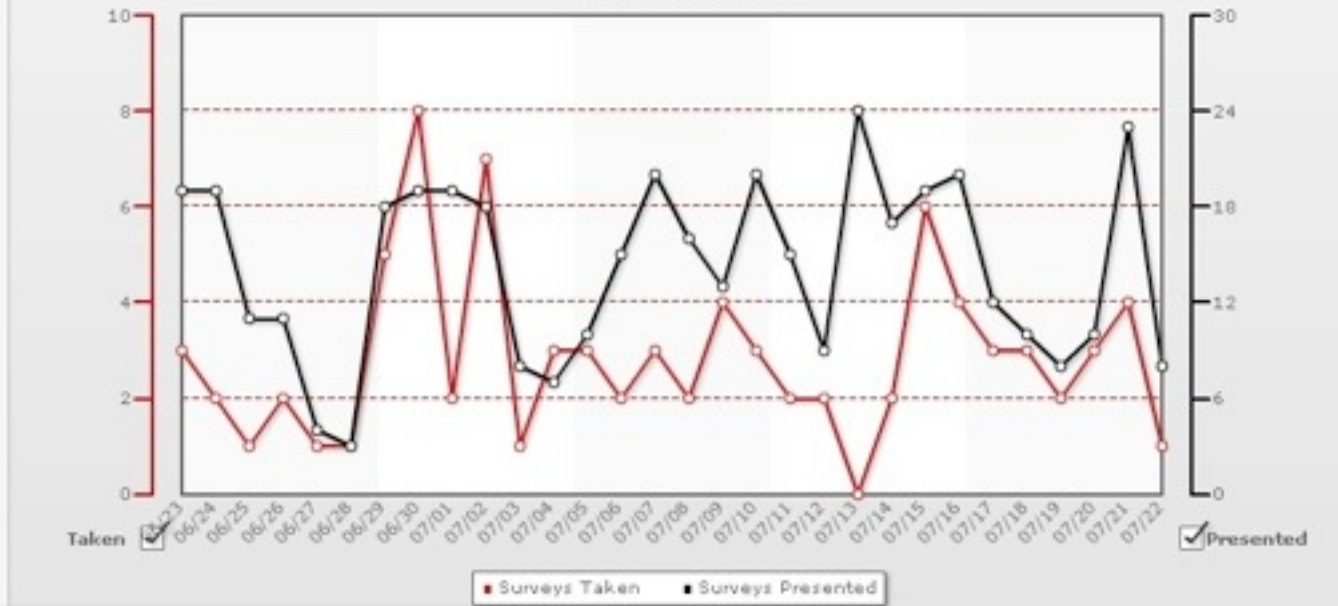
# Qualitative metrics: Survey Rate

Activity - National Ocean Service  
April 28, 2009 - July 22, 2009

Surveys Taken	301
Surveys Presented	1,536
Percentage Taken	19.6%
Total Surveys Taken	913
Total Surveys Presented	4,503
Total Percentage Taken	20.28%

Counts  Percentages

30-Day Activity Trend



# Qualitative metrics: Site Elements

## Satisfaction Summary - National Ocean Service July 22, 2009 N: 1

(Click on a Element name to change the data in the chart below)

<input checked="" type="checkbox"/>	Elements	Score	Impact on C.S.
<input checked="" type="checkbox"/>	Content	86	NA
<input checked="" type="checkbox"/>	Look and Feel	82	NA
<input checked="" type="checkbox"/>	Navigation	33	NA
<input checked="" type="checkbox"/>	Search	45	NA
<input checked="" type="checkbox"/>	Site Performance	65	NA

<input checked="" type="checkbox"/>	Customer Satisfaction
	23

<input type="checkbox"/>	Impact on F.B.	Future Behaviors	Score
<input type="checkbox"/>	NA	Likelihood to Return	11
<input type="checkbox"/>	NA	Primary Resource	0
<input type="checkbox"/>	NA	Recommend	11

Detail  Trend

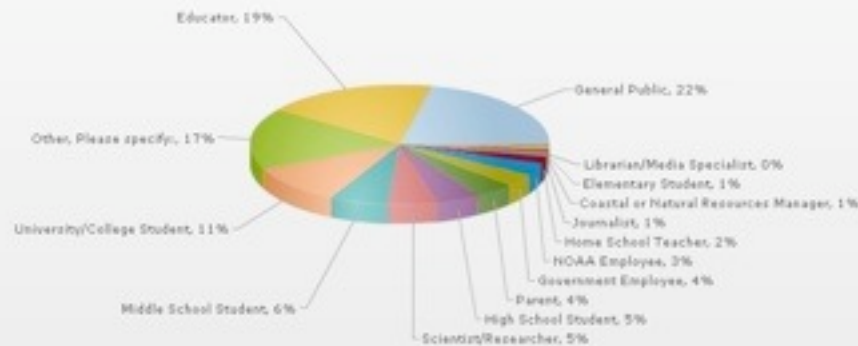
30-Day Trend










# Qualitative metrics: Visitor Role

What is your role in coming to this site today?			
General Public		65	22%
Educator		56	19%
Other, Please specify:		50	17%
University/College Student		32	11%
Middle School Student		19	6%
Scientist/Researcher		16	5%
High School Student		14	5%
Parent		13	4%
Government Employee		11	4%
NOAA Employee		10	3%
Home School Teacher		5	2%
Journalist		4	1%
Coastal or Natural Resources Manager		3	1%
Elementary Student		2	1%
Librarian/Media Specialist		1	0%
Total		301	100%

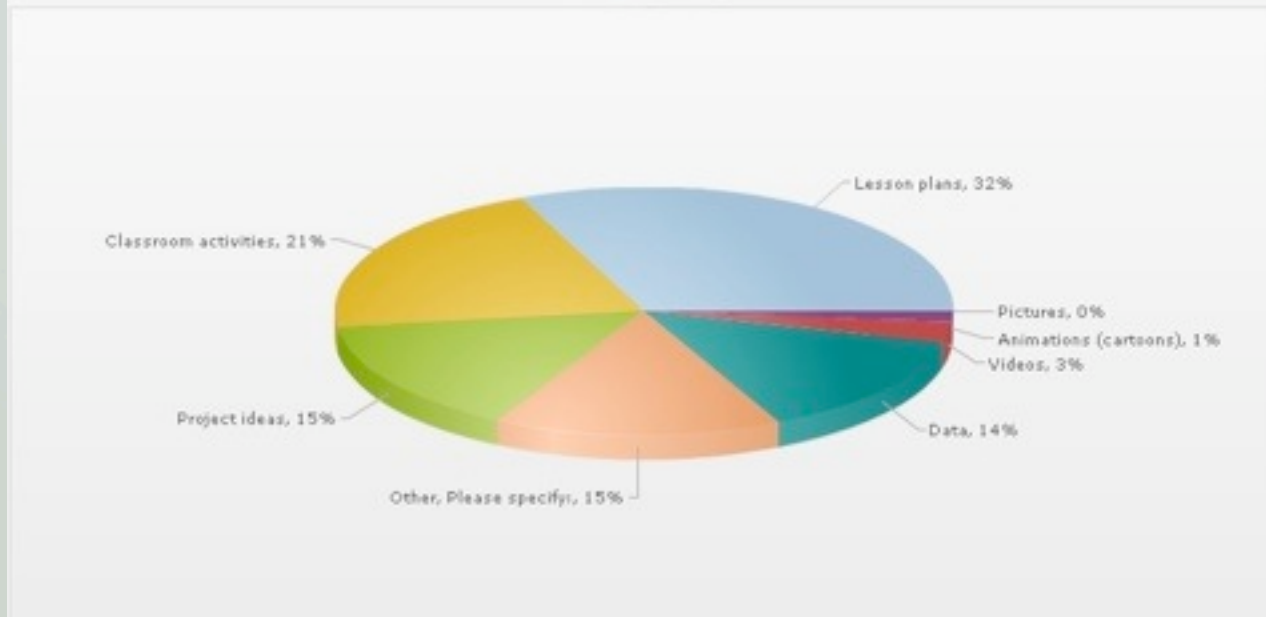
Detail Trend



# Qualitative metrics: Educators


What best describes your primary reason for visiting the site today?			
Lesson plans		23	32%
Classroom activities		15	21%
Project ideas		11	15%
Other, Please specify:		11	15%
Data		10	14%
Videos		2	3%
Animations (cartoons)		1	1%
Pictures			
Total		73	100%

Detail  Trend

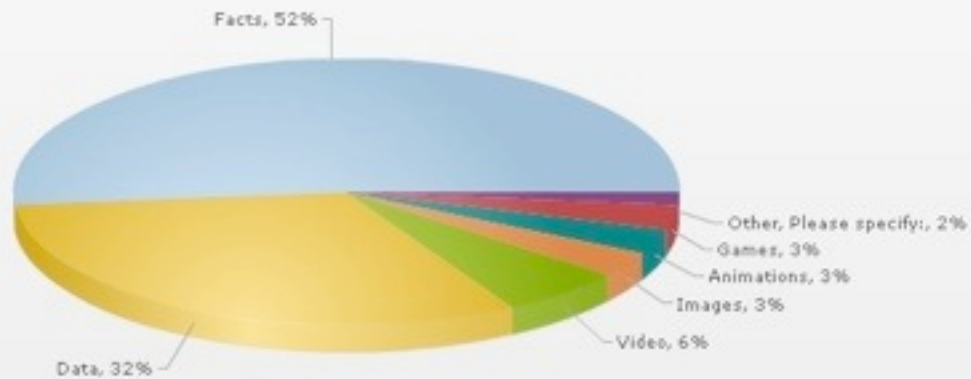




# Qualitative metrics: Students

What kind of information are you looking for on this site today?			
Facts		34	52%
Data		21	32%
Video		4	6%
Images		2	3%
Animations		2	3%
Games		2	3%
Other, Please specify:		1	2%
Total		66	100%

Detail  Trend



# Other metrics

- Heat maps can show which parts of a page attract attention
- Analysis of search terms used can tell you what vocabulary your visitors use to find you
- Google Trends (<http://www.google.com/trends>) can be used to compare search terms

# Known users: a problem

**Gathering metrics on anonymous users, from a public Web site, is easy. You may never know the identity of your visitors, but there are no restrictions on use of the data. This is not the case for sites with logins.**

- **If a visitor must log in, there is a presumption that you will safeguard their credentials. Failure to do so is considered negligence.**
- **Health institutions, must also deal with Privacy Act restrictions, HIPAA restrictions, and restrictions on experimenting with human subjects.**

# Known users: a problem (cont.)

- Metrics from known users are difficult to sanitize
- Costs of safeguarding private information from known users may exceed all other research costs.
- Tracing just one user through a Web site may generate more pages of statistics than there are pages in the Web site.

# Credits

- Site maps generated from SINI Planning Committee institutions: <http://nursing.umaryland.edu/sini/committee.htm>
- Qualitative metrics from ForeSee Results, <http://www.foreseeresults.com/>
- Site statistic examples from National Ocean Service, <http://oceanservice.noaa.gov>, and related sites.
- Statistical examples generated with Summary, <http://summary.net>
- Multi-year hits, pages, bandwidth example from Washington Apple Pi, <http://www.wap.org/>

# Contact

**Slides and materials available from:  
<http://kljcharters.com/sini2009/>**

**Lawrence I. Charters  
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