



Applied Research Center
FLORIDA INTERNATIONAL UNIVERSITY

Web Analytics Narrative for the

Deactivation and Decommissioning Knowledge Management
Information Tool

<http://www.dndkm.org>

Fourth Quarter 2013

Period: October 1, 2013 – December 31, 2013

Prepared by:

Florida International University
Applied Research Center

For:

John De Gregory
Department of Energy
Environmental Management



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For Fourth Quarter 2013 (October 1, 2013 – December 31, 2013) (Previous Period July 1, 2013 – September 30, 2013)

Summary

Since FIU-ARC started to track and develop analytics reports for D&D KM-IT, the fourth quarter has proven to be the slowest of all quarters. Unlike other websites that are popular during this period, mainly shopping sites, the D&D KM-IT overall visits were down by 33.1% as shown later in the report.

This report was developed by combining the Google Analytics (GA) data with the data from Google Webmaster Tools (GWT). The information gathered from GWT is mainly the visits to documents from Google search results which GA is not able to track. The data shown in Figure 1 is from (GA) only, where the current period is represented by the blue line and the previous period is represented by the orange line. The *Combined Visits* section on page 5 has a more detailed comparison.

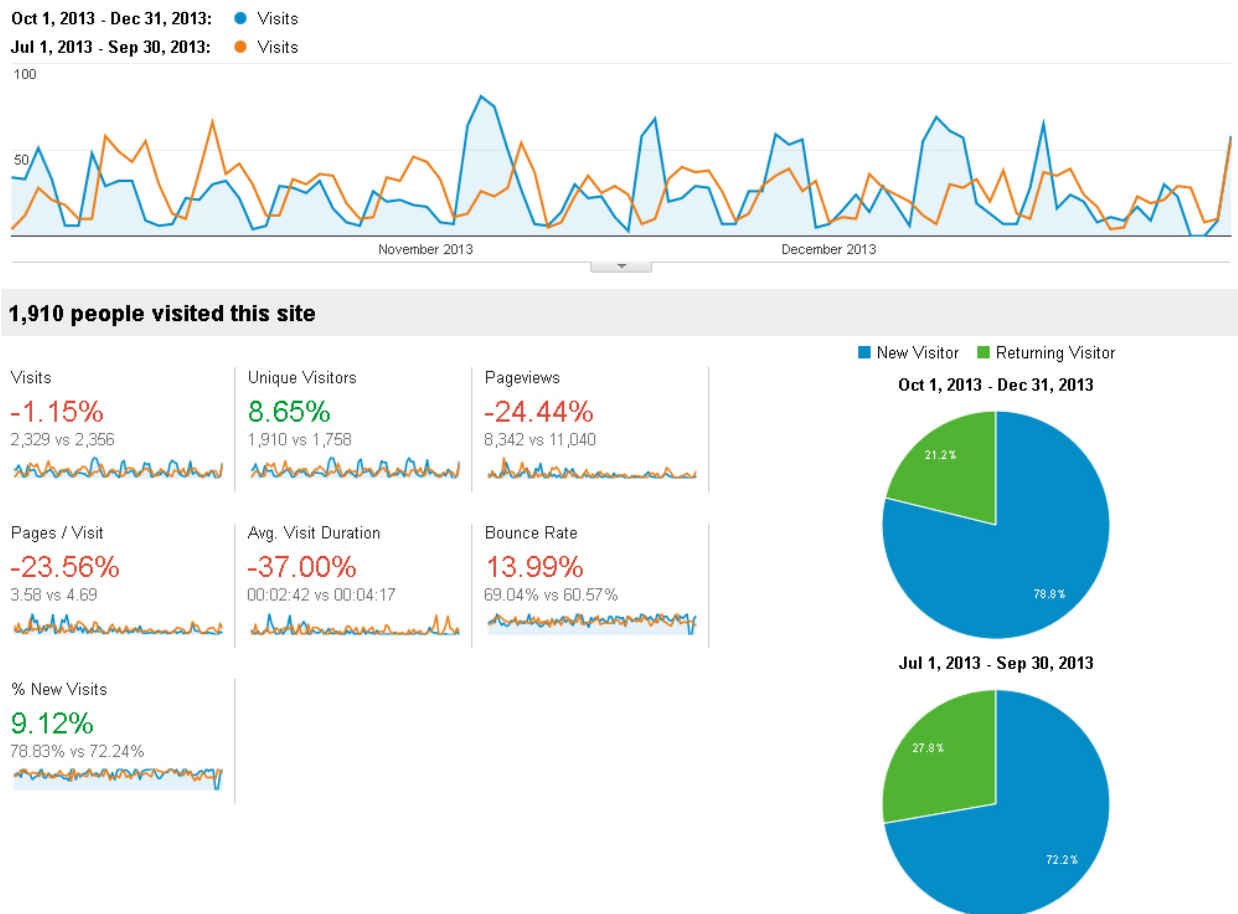


Figure 1: Summary of Q4 2013 (blue line) vs. previous period (orange line Q3 2013)

Figure 1 on the previous page is a summary of the website visits during Q4. The number of visits to the site stayed about the same at 2,329 visits, a drop of just 1.15% from the previous quarter. Unique visitors increased 8.65% but all the other major metrics decreased by double digit percentages. Pageviews and Pages per Visit decreased 24.44% and 23.56%, respectively. A large decrease was noted for the Average Visit Duration: this metric went down 37% which probably contributed to the Bounce Rate decrease of 13.99%. The other positive number from Figure 1 is for New Visits, which increased by 9.12%. This overall drop in metrics for website visits is typical behavior for the fourth quarter of the year. Below, in Table 1, is a quick comparison of the differences between the third and fourth quarter for 2012 and 2013. As you can see, the drop in the metrics between the third and fourth quarters is an expected occurrence.

Table 1: Comparing changes from 3Q to 4Q for 2012 and 2013

Period	Visits	Unique Visitors	Page Views	Page Per Visit	Avg. Visit Duration	Bounce Rate	% New Visits
2013 4Q vs 3Q	1.15%	8.65%	-24.44%	-23.56%	-37%	-13.99%	9.12%
2012 4Q vs 3Q	-4.75 %	14.96%	-11.33%	-6.91%	-24.19%	-23.80%	21.78%

2013 Q4 Infographic

An infographic is an image composed of charts and/or diagrams used to represent information or data. We have compiled an infographic based on the web analytic data from this quarter (see Figure 2 on the next page). The content of the infographic are measurements that will be discussed later in this report. The measurements included in the infographic are: total visits, average monthly visits, new and returning visitors. There is also a measurement for the percentage of visitors that come from the FIU network. In addition, time on site, traffic type, demographics, keywords, browsers and module destination are also included. The aim of the infographic is to provide a summary of key data from the report in a single graphical image for target audiences.

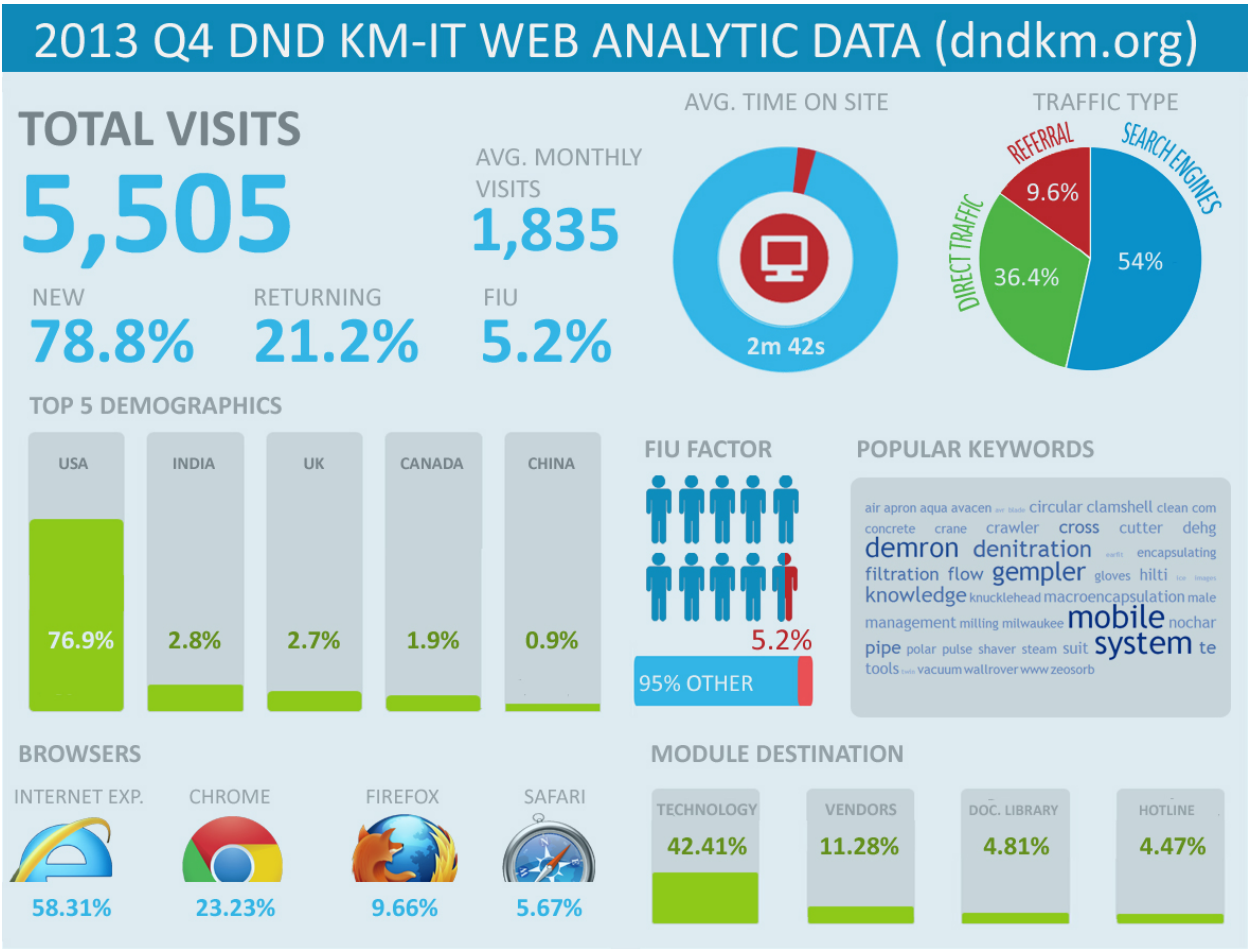


Figure 2: Infographic for 2014 Q4 Based on Web Analytic Data

Still recovering from Q2 algorithm updates

During Q2 of 2013 (April to June 2013), the site statistics suffered from several algorithm changes rolled out by Google. D&D KM-IT experienced a 67.57% drop in visits just by Google alone. The details of the algorithm changes were discussed in detail in the Q2 report, *2013Q2_Web Analytics Narrative for dndkm.pdf*. A copy of that report can be made available to the reader upon request; therefore, this report will focus on the Q4 data and its analysis.

The D&D KM-IT is recovering from the algorithm changes from Google and it is slowly regaining page rank. Climbing a search engine page rank is a slow process. Unfortunately, the positive trend showed during Q3 was interrupted during the fourth quarter. The fourth quarter has been a momentum killer ever since FIU-ARC started to track D&D KM-IT analytics.

Combined visits

As mentioned earlier, Figure 1 in the *Summary* section was extracted from the GA software. It does not take into account the direct visits to documents from web searches. By combining the information from GA with GWT, we get a better picture of the total number of visits the website received. During Q4, the D&D KM-IT website served 631 unique documents to search engines. The 631 documents were clicked (i.e., opened by users) a total of 3,176 times. Therefore, combining 3,176 direct visits to the site via documents with the 2,329 visits to the site through the rest of the D&D KM-IT system, we get a total of 5,505 total visits to the site, which translates to 1,835 average visits per month (see Table 2). The four previous quarters are also included in this table for reference and comparison. This quarter experienced a drop of 33.1% in overall traffic when compared to the previous quarter. While a drop was expected due to the historical data for previous fourth quarters, the percentage of the drop is relatively high. Most of the drop can be attributed to fewer visits to documents, a 45.9% drop to be exact. This drop is worth noting and is something that FIU-ARC will be watching closely during the current quarter.

Table 2: Combining Google Analytics and Google Webmaster Tools Visit Count for Q4 in Comparison with Previous Quarters

Source	2013Q4	2013Q3	2013Q2	2013Q1	2012Q4
Google Analytics Visits (visits counted by GA to every HTML page of the D&D KM-IT website)	2,329	2,356	2,138	4,941	2,708
Google Webmaster Tools Visits (Counting only direct visits to documents where GA code can't be included)	3,176	5,873	5,476	Not included (only March could apply)	4,532
Total Visits to D&D KM-IT	5,505	8,229	7,614	4,941*	7,240
Average Visits Per Month	1,835	2,743	2,538	1,647*	2,413

* March 2013 was not measured correctly: 1) It was possible that Google ignored the PDF Viewer which did not count the visits to the site, 2) The D&D KM-IT team removed the PDF Viewer so the documents could be accessed but not counted, 3) Webmaster Tools numbers could be counted for March but this tool only keeps a 3 month trailing count and can't isolate the visits to March alone; therefore, it is not included in the numbers.

Top Documents

The top ten documents served by D&D KM-IT are shown in Table 3 below. The impression column represents how many times this document was returned as a search result on Google. The Avg. Position represents the order in which this document was placed on the results page. The lower the Avg. Position, the closer it is to the top of the search results. Finally, the Clicks column is the number of times this document was clicked (i.e., opened) by the user from the search results page. Next to each of these labels is an up or down arrow. This arrow represents the movement of this document compared to the previous quarter in this category. The top document is “Crossflow Filtration” from the Innovative Technology Summary Reports (ITSRs) category. This document was clicked a total of 301 times, an increase from the previous quarter. This particular document was a top ten document during the previous quarter as well. Notice that eight out of the top ten documents are from the ITRs section of the website. There is clearly an interest in ITRs documents from the D&D community; in particular, those ITRs belonging to the D&D and Mixed Waste category as demonstrated by the document path.

Table 3: Top 10 documents in Q4 2013 (↑ increase and ↓ decrease from previous period)

Document	Clicks	Impressions	Avg. Position
/ITSR/Tank/Crossflow Filtration.pdf	301↑	2,527↑	10↓
/ITSR/DND/NITON XL-800 Series Multi-Element Spectrum Analyzer (Alloy Analyzer).pdf	113↓	1,015↑	10↑
/ITSR/TRUMixedWaste/Membrane System for the Recovery of Volatile Organic Compounds from Remediation of Off-Gases.pdf	112↑	1,161↑	3.6↑
/ITSR/SoilGroundWater/Frozen Soil Barrier.pdf	86↓	1,894↑	5.4↓
/ITSR/DND/Nochar Petrobond Absorbent Polymer Tritiated Oil Solidification.pdf	74↑	923↓	3.7↓
/Technology/1246-Instruction Manual.pdf	62↓	1,722↓	6.1↑
/ITSR/DND/Laser Cutting and Size Reduction.pdf	62↓	1,067↓	6.8↓
/ITSR/Tank/Pulsed Air Mixer.pdf	58↑	655↑	7.9↑
/ITSR/TRUMixedWaste/Cyanide Destruction-Immobilization of Residual Sludge.pdf	58↓	702↓	1.8↑
/Technology/975-Laser Decon Paper.pdf	56↓	674↓	3.5↑

In general, all the documents this quarter experienced lower impressions and clicks due to the slow period as discussed earlier. The only documents that showed an increase in both clicks and impressions were “Crossflow Filtration” and “Membrane System for the Recovery of Volatile Organic Compounds from Remediation of Off-Gases.” All other documents were lower on either clicks and/or impressions this quarter.

Top Searches and Queries

The top 10 keywords with the most impressions and best position are shown in Table 4. The top query with the most impressions (the number of times it was returned by Google as a search result) was the phrase “Mobile system” with approximately 1,147 impressions (up 65% from last quarter). In addition, the phrase “Web crawler images” returned on the first page of search engines this quarter. Search results are highly targeted to the users search and browsing patterns and hard to duplicate due to location, time and current events. Approximately 80% or more of the content in the table below changes every quarter due to these facts.

Table 4: Top Search Queries (Impressions, Clicks and Position)

Query	Impressions	Query	Avg. Position
Mobile system	1,147	Web crawler images	1
Demron	697	Concrete shaver	2.2
Denitration	424	Encapsulating suit	2.6
gempler’s	249	Demron	3.2
Cross flow filtration	225	Demron suit	3.2
Macroencapsulation	199	Wallrover	3.4
Nochar	194	Clamshell cutter	3.6
Dehg	169	Nochar	4
Knowledge management tools	164	Aqua milling	4
Clamshell cutter	153	Mobile system	4



Figure 3: Keyword tag cloud representation of top 40 query impressions during Q4 2013

Figure 3 on the previous page is a keyword tag cloud representation for Q4 2013 of the top 40 keyword query impressions on the website. It provides a good visualization of the extended data from Table 4. The tag cloud separates phrases into single words and displays the “weight” of each word according to the frequency of the word.

Figure 4 below is also a tag cloud. This tag cloud is from keywords found on the D&D KM-IT website. This is basically how a search engine “sees” the site. The information most relevant on the site will be displayed bigger and bolder.



Figure 4: D&D KM-IT top keywords as seen by search engines

Top Modules

The top 3 performing modules this quarter were Technology, Vendors and Document Library (see Figure 5 on page 11). Surprisingly, Hotline did not make it to the top 3 modules during this quarter. Instead, Document Library sneaked in with just 28 pageviews. On the following page, there is a list of the top performing pages within each of the modules (see Table 5). This table details the top popular pages under each module. It lists the name of the page and the URL link to the item.

Table 5: Most popular modules

Popular Technology	Popular Vendor	Document Library
<p>ADAMANT Twin Blade Cutter Circular Saw</p> <p>/Technology/TechnologyFactSheet.aspx?TechnologyID=150</p>	<p>Special Technologies Laboratory</p> <p>/Vendors/ViewVendor.aspx?id=78&name=Special%20Technologies%20Laboratory</p>	<p>SRS ISSC Reports</p> <p>/ALARAReports/ALARAReportsSRS.aspx</p>
<p>Excel Automatic Locking Scaffold</p> <p>/Technology/TechnologyFactSheet.aspx?TechnologyID=120</p>	<p>AECOM</p> <p>/Vendors/ViewVendor.aspx?id=213&name=AECOM</p>	<p>Solution: Innovative Technology Summary Reports: Deactivation & Decommissioning</p> <p>/ALARAReports/ITSRReports.aspx?report=DND</p>
<p>Dyneema Long Sleeve Crew Neck "T" Shirt</p> <p>/Technology/TechnologyFactSheet.aspx?TechnologyID=254</p>	<p>Avacen Inc.</p> <p>/Vendors/ViewVendor.aspx?id=188&name=Avacen%20Inc.</p>	<p>External Library</p> <p>/ALARAReports/ExternalLinks.aspx</p>
<p>Evolution 180 Portable Metal Cutting Circular Saw</p> <p>/Technology/TechnologyFactSheet.aspx?TechnologyID=156</p>	<p>AIL Systems Inc</p> <p>/Vendors/ViewVendor.aspx?id=66&name=AIL%20Systems%20Inc</p>	<p>Document Library</p> <p>/ALARAReports/ALARAReportsLibrary.aspx</p>
<p>Porter-Cable Circular Saw with Vacumm System</p> <p>/Technology/TechnologyFactSheet.aspx?TechnologyID=162</p>	<p>Aaron Nuclear Services</p> <p>/Vendors/ViewVendor.aspx?id=215&name=Aaron%20Nuclear%20Services</p>	<p>International Library</p> <p>/ALARAReports/ALARAReportsInternationalLibrary.aspx</p>

There is clearly a theme in the popular technologies. For instance, on the Technology module, the popular items deal with some type of circular saw concrete cutting technology. In fact, three out of the five top technologies are directly related to a type of circular saw. The document library is a new addition to the top modules this quarter. The External Library page is a new page developed this quarter to capture a collection of external D&D resources. The ITSRs also made it as a popular page under the Document Library, which is consistent with ITSRs being the most requested documents in the D&D KM-IT system.

On the following page is the breakdown of the number of pageviews each of these modules received and their comparison to the previous period. This quarter, Technology dominated the traffic flow with 42.41% of the page views, followed by Vendors with 11.28% and Document

Library with 4.81%. Note, the graph shows “ALARA Reports” which is the old module name that eventually became the Document Library. The third and fourth items in the list are links to the homepage or root of the site which is displayed with a “/” and “/Default.aspx”. Since we are focusing on the modules, we are ignoring the homepage and granting Document Library (a.k.a. ALARA Reports) the third place.

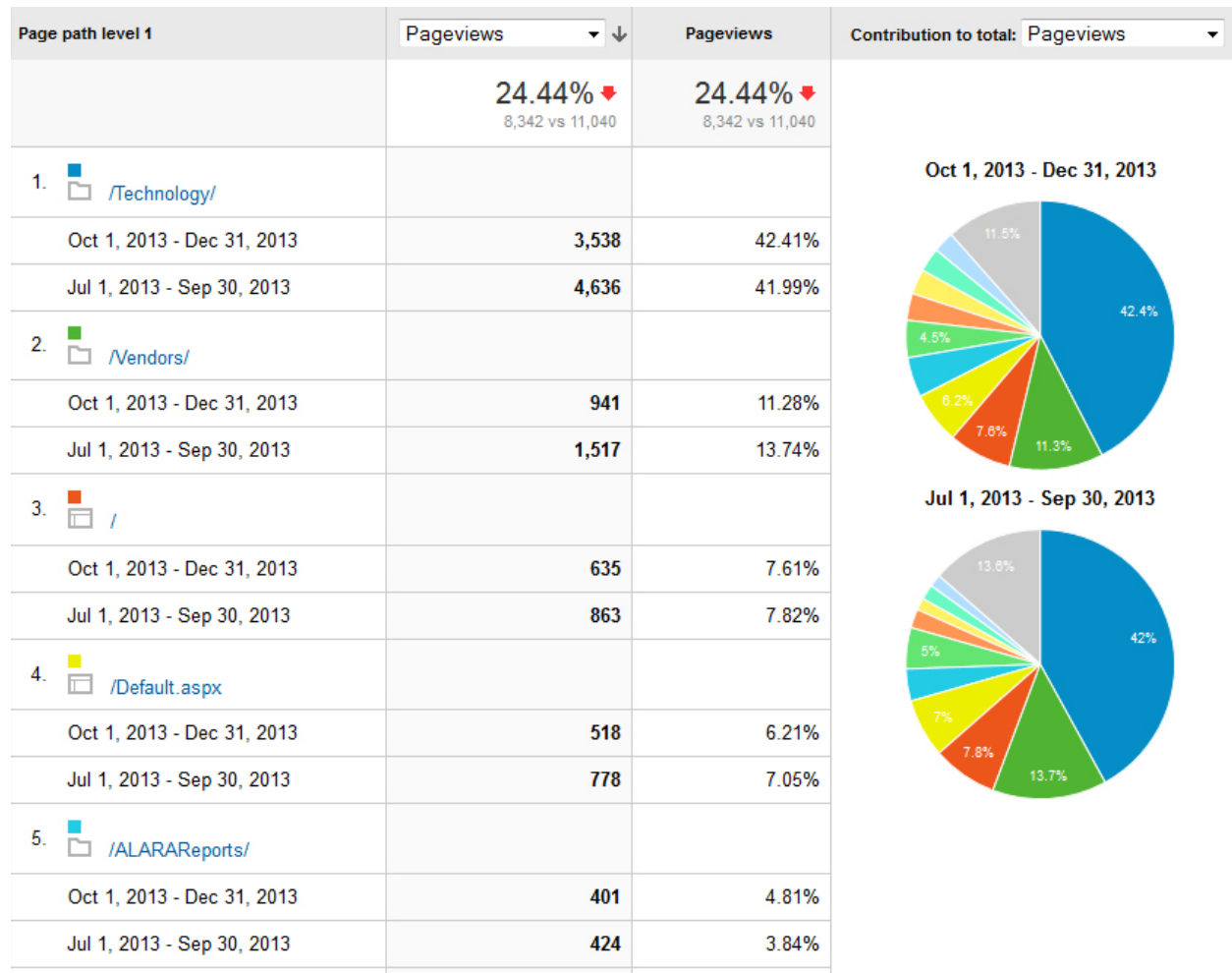


Figure 5: Top performing modules during Q4

Visitor Type

The following figure is a comparison of the visitor types that the system hosted during the fourth quarter 2013 (2013Q4) and third quarter 2013 (2013Q3) (Figure 6). On the bottom row are the numbers from the previous period (2013Q3) and on the top row are the numbers from the current period (2013Q4). Figure 6 demonstrates an increase in New Visitors to D&D KM-IT. The first column on the left (Visits by Visitor Type) shows that new visitors increased by almost 6.6%. In the middle column (Visits by Country/Territory), the United States gained visitors by 15.9% at the cost of United Kingdom who dropped for the first time ever from second place to

third place, just below India. The last column on the right (Visits by Traffic Type) categorizes the visitors by the method they used to come to the site (via search engines, labeled organic on the figure; direct; or by referral). Here we see that search engines took a big chunk of traffic from visitors who normally visit the site through typing the URL or bookmark.

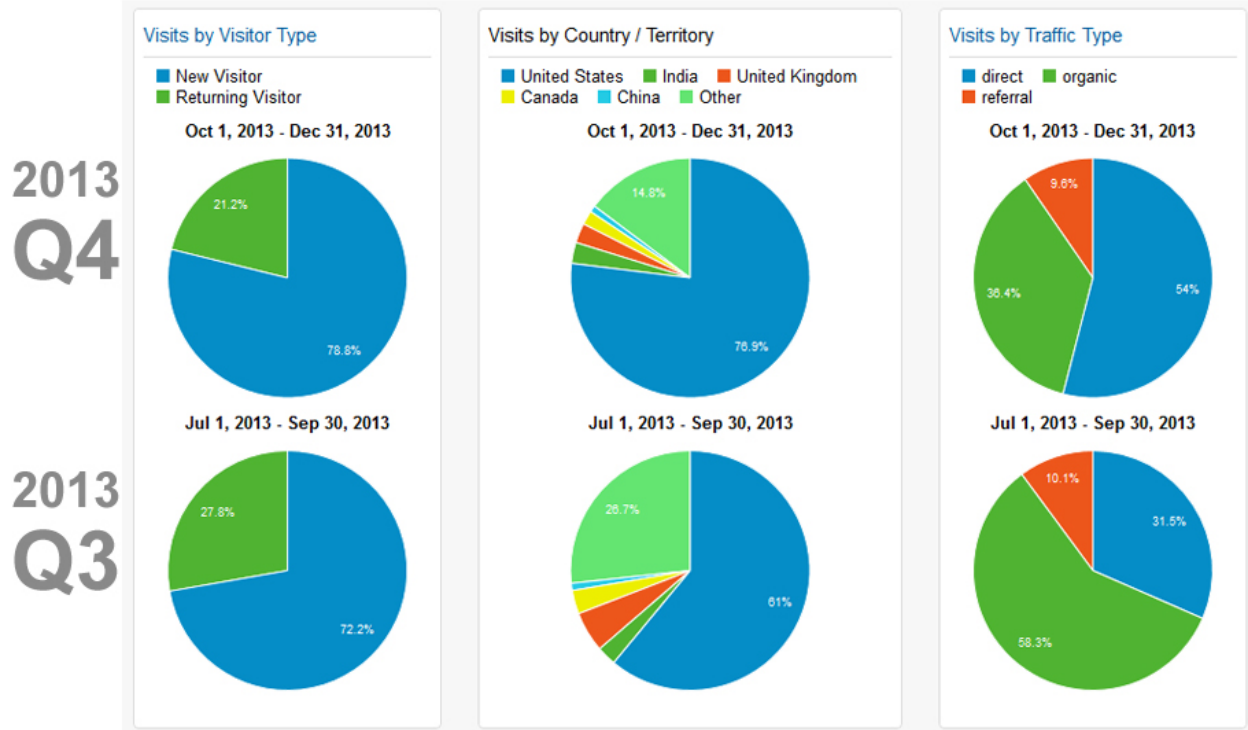


Figure 6: Visitor Type, Traffic Type and Visits by Country (2013 Q4 vs. 2013 Q3)

An interesting fact here is that the direct visits went down by 22.5%. As you recall, the overall visits to the site went down by 33.1%. This connection can also be the reason why document visits were also significantly down this quarter. Again, the fourth quarter is historically the worst performing quarter due to the holidays and other leave taken by the website's main target audience. Nonetheless, the connection is noteworthy and rather interesting.

FIU Factor

FIU continues to maintain and develop new functionality on the system. These efforts consist of module development, design changes, data population and feature enhancements. Many of the improvements made to the D&D KM-IT are actually created from information gathered in the quarterly analytic reports. As a result, developers and students visit the D&D KM-IT production site to perform these tasks, therefore, contributing to the overall number of visits to the system. This section focuses on how much of the overall visits are from the FIU network.

Out of the 2,329 visits recorded by Google Analytics (GA), 280 (or 12%) were made from the FIU Network (see Figure 7). The percentage from FIU is even lower when we combine the visits captured by the GA and Google Webmaster Tool (GWT). The right side of Figure 7 shows the combined visits by GA and GWT of 5,505 of which 280 were from the FIU network (or 5%).

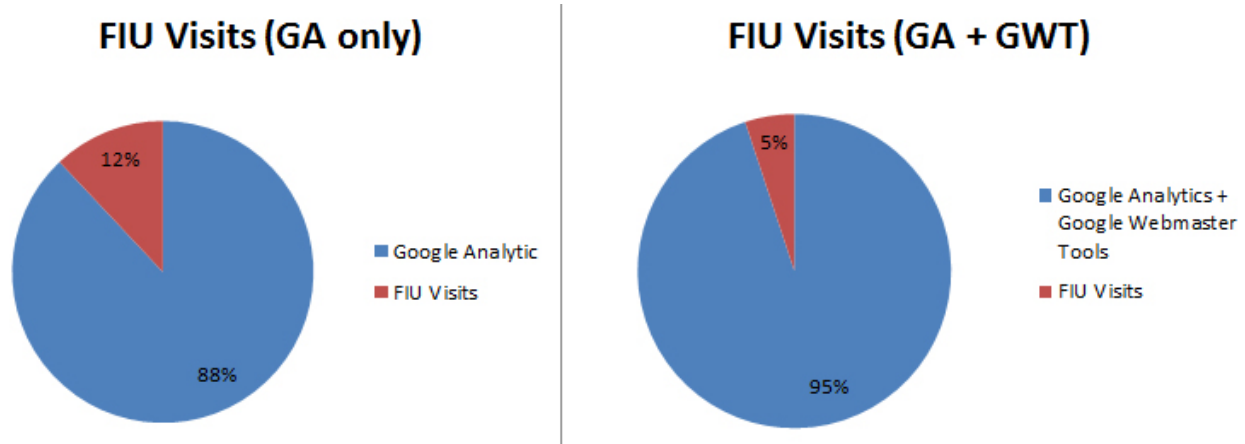


Figure 7: FIU visits to D&D KM-IT during Q4

This number is staying within the expected range. Last quarter, FIU visits with GA measured 17% and with GA and GWT combined were 5%, which amounts to a 5% drop on GA visits and no change for overall visits (GA + GWT).

User growth

D&D KM-IT closed out Q2 (April to June 2013) with 464 registered users and 52 registered Subject Matter Specialists (SMS). By the end of Q3 (July to September 2013), the site had 521 registered users and 63 registered SMS. That's a 12.28% increase for registered users and a 21.15% increase for SMS. The fourth quarter (October to December 2013) closed with 535 registered users and 64 SMS (See Figure 8 on the next page). The bulk of the increase during Q3 was due to the Nuclear Utility Conference in Hollywood, FL. The Applied Research Center attended this conference and was able to showcase D&D KM-IT as one of its projects. The demonstrations of D&D KM-IT provided at the FIU ARC booth generated remarkable interest and resulted in a registration boost to the system. The fourth quarter did not see much growth in SMS in particular but FIU-ARC will be attending Waste Management 2014 in March; therefore, registrations are expected to increase during Q1 2014 for both users and SMS alike.

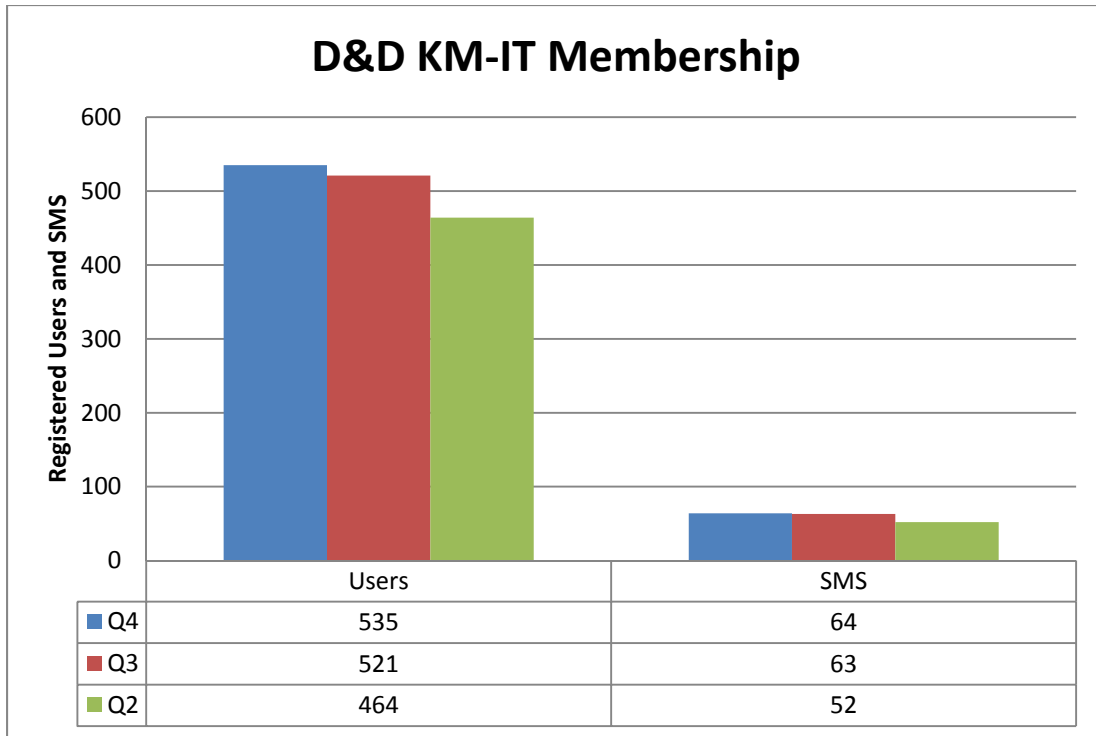


Figure 8: D&D KM-IT Membership

Analysis

These are typical fourth quarter results, lower metric numbers that interrupted the positive trend that started to develop during the third quarter. The site experienced an overall drop in traffic of 33.1%, which is on the high end of what we typically see during the fourth quarter. Contributing factors could easily be the schedule of the D&D KM-IT target audience which includes federal employees and their contractors that have holidays and vacation times during this period. There is no surprise that families, parties, holiday shopping and everything else takes time away from our visitors and since D&D KM-IT is not an online retailer, it is expected that the number of visits to the website decrease during Q4. There were, however, some outliers during this period even after discussing the period traffic slump.

On the negative side, there was a 45.9% drop in visits to documents this quarter. This drop is definitely something to watch during the current period. In fact, the reason the entire site experienced a 33.1% drop in overall visits is because of how low the numbers were for visits to documents. We will have to revisit the way our documents are being crawled and linked to make sure that there were no technical errors that may have caused this drop to document visits.

The second notable item to take away is the fact that the Hotline did not make it into the top 3 popular modules during Q4. This is the first time this has happened and it is noteworthy.

Lastly, another minor note is that the UK dropped from second place to third place from the most popular regions using the website. The drop in traffic from the UK was only 2.8% but it was enough to give way to India for the second most popular region. In fact, there was an overall drop in international traffic this quarter; the United States increased its portion of the traffic by 15.9%.

The good news is that Unique Visitors are up by 8.65% and New Visits are up by almost the same amount, 9.12%. These two metrics have a close relationship as they overlay each other when it comes to the visitor type. Unique Visitors are single individuals that visit the site. If they increase, there is a high probability that the New Visits will increase, as is the case here.

Looking ahead, FIU-ARC will be participating in Waste Management 2014 (WM2014). Historically, every time that the D&D KM-IT is demonstrated at the Waste Management Symposium or at any other conference or workshop for that matter, registration to the system increases. There is also marketing that goes along with WM2014 (email newsletters, postcards, factsheets, e.tc.) with D&D KM-IT information and link on it that will help to increase the statistics for Q1 2014 (January to March 2014). So we are optimistic that the trend that began during third quarter of 2013 will start moving again in the right direction.

About This Report

This report was developed by Florida International University's Applied Research Center. It uses Google Analytics (GA) as the main data collection source with the combination of the Google Webmaster Tool (GWT) for a closer look at direct document visits, keywords and queries performed on the site. This report is being generated on a quarterly basis, starting with Q3 of 2012. Prior to this, monthly reports were generated and a yearly report has been completed for February 2011 to February 2012.

A summary raw export from GA is found in the Appendix of this document. It is important to note that the Google algorithm varies based on search patterns, region and other "secret" Google parameters. With that said, it is difficult but possible to duplicate these results.

Terms

Visits: The number of visits to the website.

Visitors: The users visiting the website.

Pageviews: The total number of pages viewed. Repeated views of a single page are counted.

Unique visitors: The number of unduplicated (counted only once) visitors to the website over the course of a specified time period.

Pages / Visit: The average number of pages viewed during a visit to the website. Repeated views of a single page are counted.

Avg. Visit Duration: The average time duration of a session.

Direct Traffic: Typing the address of the website URL or clicking on a previously saved bookmark.

Bounce Rate: The percentage of single-page visits (i.e. visits in which the person left the website from the entrance page).

% New Visits: An estimate of the percentage of first time visits.

Referring sites: Other websites that link to the website discussed in this report.

Clickthrough Rate (CTR): The number of clicks on an ad divided by the number of times the ad is shown, expressed as a percentage.

Appendix

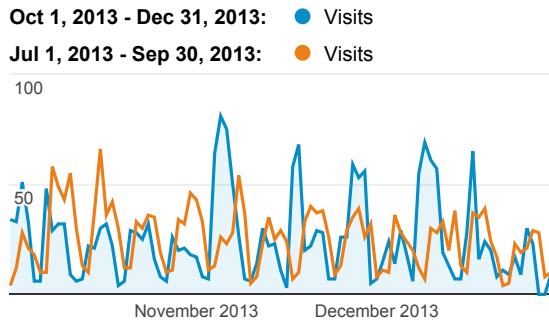
On the following page is the report exported from Google Analytics as supporting documentation.



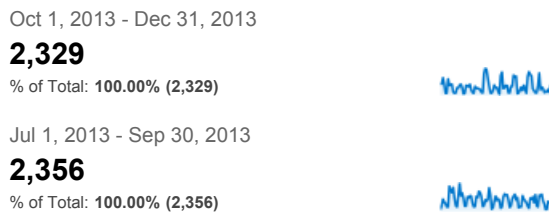
Pageviews by Page

Page	Pageviews
/	
Oct 1, 2013 - Dec 31, 2013	635
Jul 1, 2013 - Sep 30, 2013	863
% Change	-26.42%
/Default.aspx	
Oct 1, 2013 - Dec 31, 2013	518
Jul 1, 2013 - Sep 30, 2013	778
% Change	-33.42%
/Technology/Tech.aspx	
Oct 1, 2013 - Dec 31, 2013	482
Jul 1, 2013 - Sep 30, 2013	646
% Change	-25.39%
/Technology/AdvanceSearch.aspx	
Oct 1, 2013 - Dec 31, 2013	449
Jul 1, 2013 - Sep 30, 2013	1,052
% Change	-57.32%
/Vendors/ManageVendor.aspx	
Oct 1, 2013 - Dec 31, 2013	344
Jul 1, 2013 - Sep 30, 2013	765
% Change	-55.03%
/Technology/TechnologyDefault.aspx	
Oct 1, 2013 - Dec 31, 2013	295
Jul 1, 2013 - Sep 30, 2013	403
% Change	-26.80%
/Technology/TechnologyApproval.aspx	
Oct 1, 2013 - Dec 31, 2013	143
Jul 1, 2013 - Sep 30, 2013	180
% Change	-20.56%

Visits



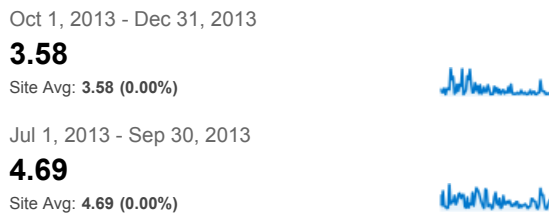
Visits



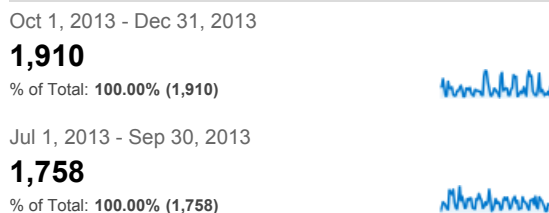
Pageviews



Pages / Visit



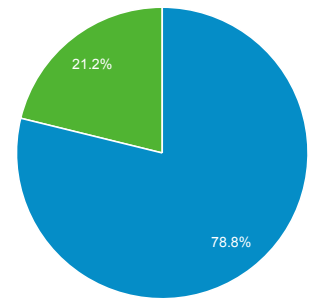
Unique Visitors



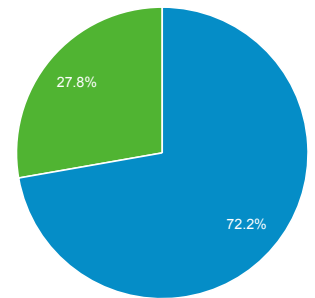
Visits by Visitor Type

■ New Visitor ■ Returning Visitor

Oct 1, 2013 - Dec 31, 2013



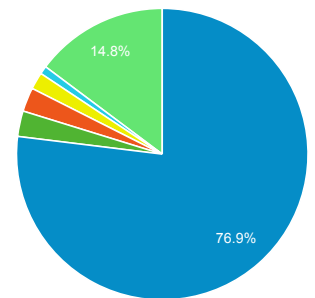
Jul 1, 2013 - Sep 30, 2013



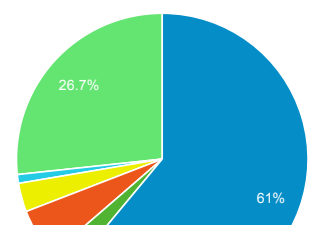
Visits by Country / Territory

■ United States ■ India
■ United Kingdom ■ Canada
■ China ■ Other

Oct 1, 2013 - Dec 31, 2013



Jul 1, 2013 - Sep 30, 2013



Bounce Rate

Oct 1, 2013 - Dec 31, 2013

69.04%

Site Avg: 69.04% (0.00%)



Jul 1, 2013 - Sep 30, 2013

60.57%

Site Avg: 60.57% (0.00%)



Avg. Visit Duration

Oct 1, 2013 - Dec 31, 2013

00:02:42

Site Avg: 00:02:42 (0.00%)



Jul 1, 2013 - Sep 30, 2013

00:04:17

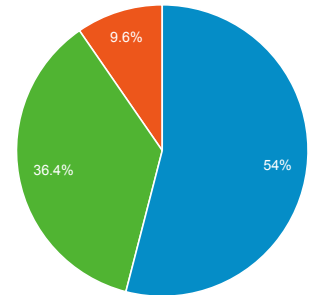
Site Avg: 00:04:17 (0.00%)



Visits by Traffic Type

■ direct ■ organic ■ referral

Oct 1, 2013 - Dec 31, 2013



Jul 1, 2013 - Sep 30, 2013

