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Library Link Resolvers and Analytics: Using Analytics Tools to Identify Usage Trends and Access Problems with Electronic Resources in Libraries

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Link Resolvers and Analytics:

Using Analytics Tools to Identify Usage Trends and Access Problems with Electronic Resources in Libraries

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This paper contains the notes from a presentation given at the Electronic Resources & Libraries Conference in Austin, Texas on February 24, 2015. It describes the process of adding Google Analytics to ProQuest's 360 Link at the Wayne State University Library System. It also contains three examples, which detail projects that are still in progress.

Introduction

Analytics have become vital to exploring the use of websites in the library world. They allow us to discover who is using our sites, when they are using them, and how they are using them. I believe this data will only become more important as libraries continue to prove their worth in the digital world.

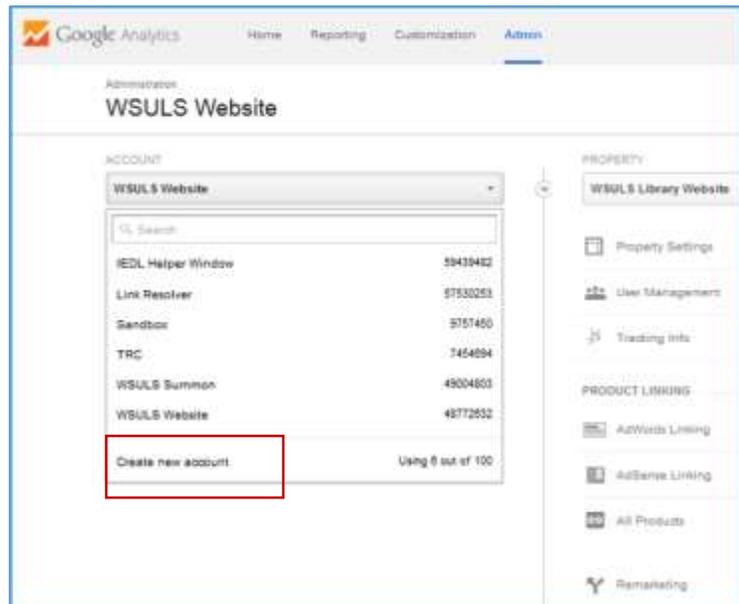
However, there are some challenges with using analytics. One major issue is that some of the essential sites relating to the delivery of library materials do not actually belong to the library. One example of this is the link resolver, which attempts to connect patrons to electronic materials in various databases. This paper will detail the steps I took to add Google Analytics to our link resolver, 360 Link. I will provide examples of how I used Google Analytics to explore usage of online tools, to identify sources of citations, and to study errors.

Setting Up Google Analytics on 360Link

This paper will demonstrate how to add a link resolver to an already-existing Google Analytics account. If you need to set up an account from scratch, the book “Google Analytics” offers good instructions for setting it up. The full citation for this book is in the Works Cited.

The first step to adding Google Analytics to 360 Link is to create a new account in your Google Analytics. Google Analytics allows you to add many accounts that can cover different parts of your site, based on the URL. You’ll do this by going to the Admin section of Google Analytics. Press the down arrow below “ACCOUNT.” At the bottom of the box, press “Create new account.”

This will open a page called “New Account.” At the top of the page, Google Analytics will ask you whether you would like to track a website or mobile app. To track 360 Link, you’ll



select website. Give your account a meaningful name and select a name for this website as well. Under “Website URL” add your core link resolver URL. Do not add any parameters. Parameters are the parts of the URL that after the domain and path that contain queries. The first parameter will begin with a question mark and additional parameters can be added with an ampersand. (Stauffer)

Parameters are very common in library websites. You’ll find them in many of the URLs for resources. For example, the URL for the ProQuest database ARTbibliographies Modern is constructed like this: <http://search.proquest.com/artbibliographies?accountid=XXXXXX>. The parameter begins with the question mark and specifies the account of the particular library.

Fill out the remaining fields in the “New Account” page and press “Get Tracking ID.”

The tracking ID will look like this. It’s made up of JavaScript code within HTML tags. There will be a unique identifier that will tie this code to your account. It will begin

```
<script>
  (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
  (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
  m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
  })(window,document,'script','//www.google-analytics.com/analytics.js','ga');

  ga('create', 'UA-XXXXXXXX-X', 'auto');
  ga('send', 'pageview');

</script>
```

with UA and be followed by a series of numbers. You don’t have to alter this code in any way. (You don’t

even have to understand it.) However, you could choose to edit it later if you wish to collect additional information.

If this were a website that was managed in your library, you would generally place this code in the html for the website, just before the close of your html <body> tag.

(Ledford, Tyler, and Teixeira, 22) Although this site may look like it is part of the library website, the URL reveals that it is actually on the

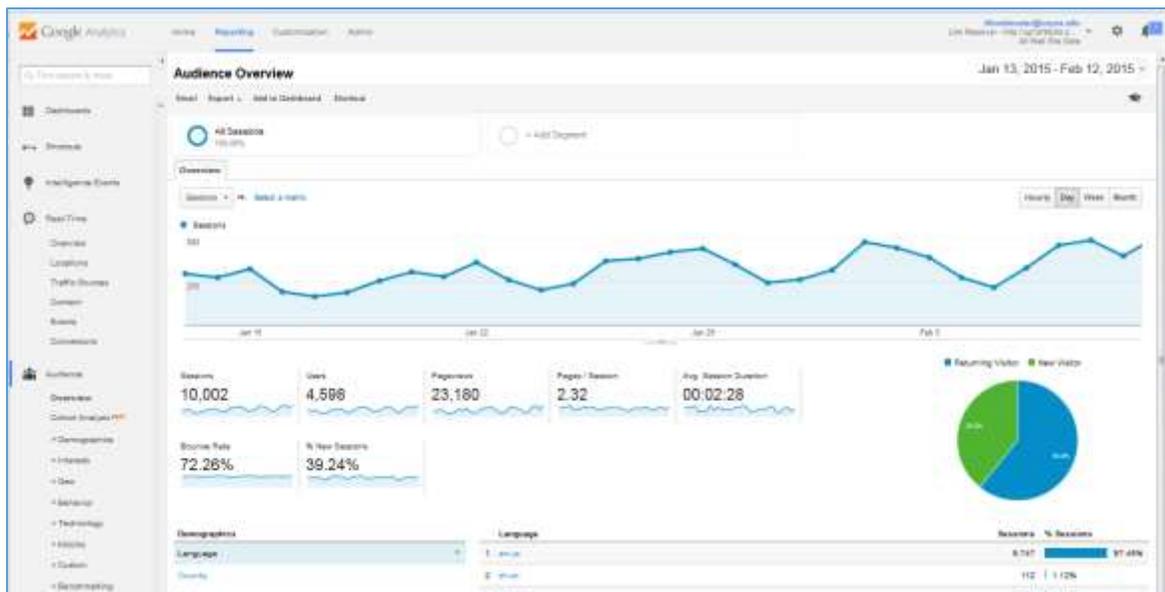


Serialsolutions domain. The page looks like part of the library web site because 360 Link, like many similar products, allows libraries to provide branding so that the link resolver appearance is consistent with the rest of the website.

The simplest way to add tracking code to the link resolver is to take advantage of that branding. 360 Link allows access to the HTML for the head, header, and footer through the administration platform. On advice from ProQuest, I placed my tracking code before the </head> tag. The tracking code will not become active until the Serialsolutions cache refreshes.

Analyzing Analytics

Once the tracking code is successfully installed, Google analytics will start organizing many pieces of data into reports automatically. The main dashboard will display many main metrics, including sessions



over time, total sessions, pageviews, bounce rate, and language. Additional reports are gathered along the left, and users can drill down into individual metrics within this data.

So what do all these default reports tell us about of link resolver use? In reality, they tell us very little. There are two big reasons for this. The first is that Google Analytics, like many other analytics tools, were designed for business, so the metrics were designed based on the interactions that the creators of commercial websites are seeking. For example, the writers of one guide on Google Analytics described visit length like this: “Simply put, you can equate the length of time a visitor spends on your site with the amount of interest your site generates for that visitor.” (Ledford, Tyler, and Teixeira, 88)

This is not remotely true for library websites in general and link resolvers in particular. Library sites are often serving as the connection to information, not the source of it. This is especially true of link resolvers. The goal of these pages should be for patrons to be able to easily identify the link to their data and quickly link out to it. Google Analytics would consider brief visits such as this to be bounces, but longer visits could be a sign of confusion rather than engagement.

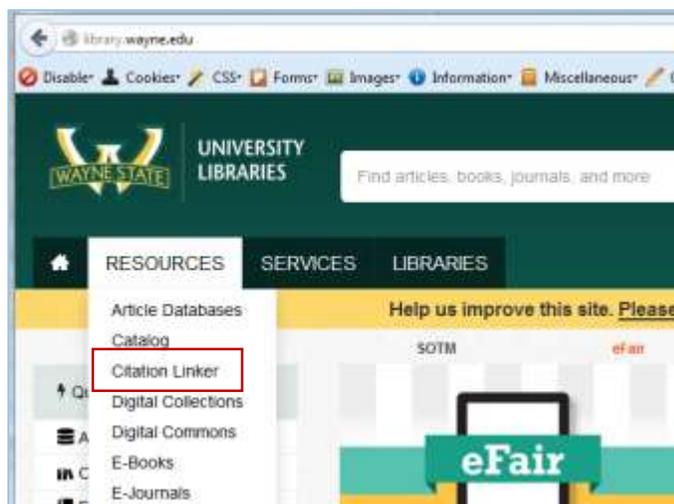
Another issue specific to the link resolver, is that the same domain may refer to many different pages that our patrons interact with in different ways. For example, the link resolver results page, the Citation Linker tool, an A-Z list, and citation information is all available on the domain <http://up7af9tu5s.search.serialssolutions.com/>.

Our patrons interact with these different pages in different ways. On a link resolver results page patrons would ideally link out very quickly. For the Citation Linker, a patron could spend a lot more time inputting information. On the A-Z list, a patron could spend significant time browsing or searching. Google Analytics doesn’t distinguish among these pages, so the default reports are averaging all the results together, which hides very important usage.

Below you will find three examples of using custom reports to aggregate pages with related issues in order to get more relevant analytics data. All three of these are projects that are still in progress, but they still offer interesting insights.

Example 1: Citation Linker

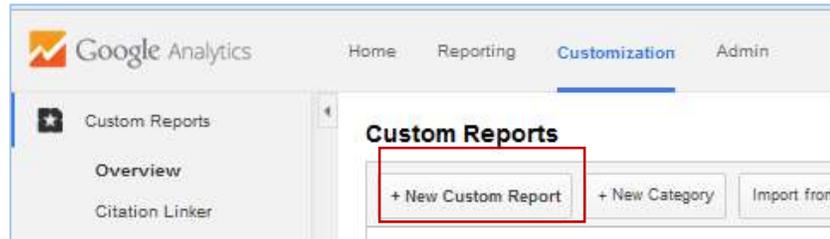
I began my journey in analytics with this question in late 2014. The Wayne State University Library System had recently redesigned the website. Our Citation Linker tool, which is useful for searching for known articles, was a level down, and there was some argument that it should be front and center. The question was: how much is this tool being used, and who is using it? Should it get the prime real estate on the front page? We were unable to get usage data specifically for Citation Linker, so I turned to



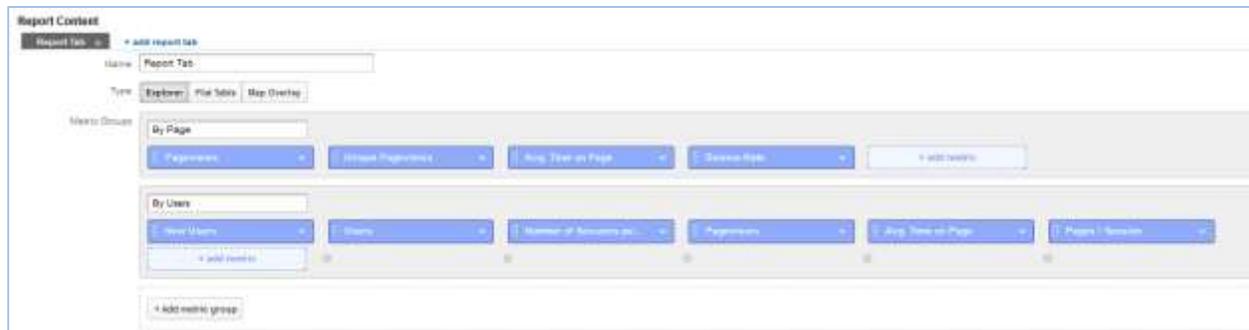
Google Analytics. It turns out, simple usage data wouldn't have answered this question.

I elected to make a custom report. I've found custom reports to be very helpful. They don't affect the information that Google Analytics collects, but they allow you to specify exactly what you want to look at and what context you want to look at it in. This is useful because it enables you to collect related pages and look at metrics only on those pages. You can identify trends based on related pages.

A new custom report can be created in Google Analytics by going to "Customization" and selecting "New Custom Report." Custom reports allow you to define groups



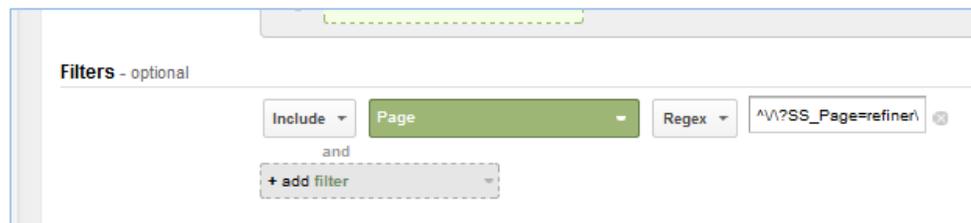
of metrics to apply to your data. For my Citation Linker report, I created two sets of metrics, one based on pages and pageviews and one based on users. I've found it helpful to include both of these metric groups when creating a new custom report because it identifies the amount of use and the intensity of use.



The key part of the custom report is the filter. Remember that there are multiple pages with the same domain. For this report, I'm only interested in the Citation Linker tool. The first thing to do is identify the various URLs associated with Citation Linker. By going to "Behavior > Site Content > All Pages" in the list of reports on the left, I can get to a list of all the URLs Google Analytics has collected. By going to this list, I was able to discover that the two most common URLs for Citation Linker were [domain]/?SS_Page=refiner&SS_RefinerEditable=yes and [domain]/?SS_Page=refiner

Those URLs need to be added to the filter in the Custom Report. Because we want to limit the report to only look at the Citation Linker URLs, we set the filter to Include and Page. We have more than one URL, so we will have to

use regular expressions, or regex, to identify our URLs. Regular expressions can look intimidating, but



they are actually relatively simple upon a bit of examination and explanation.

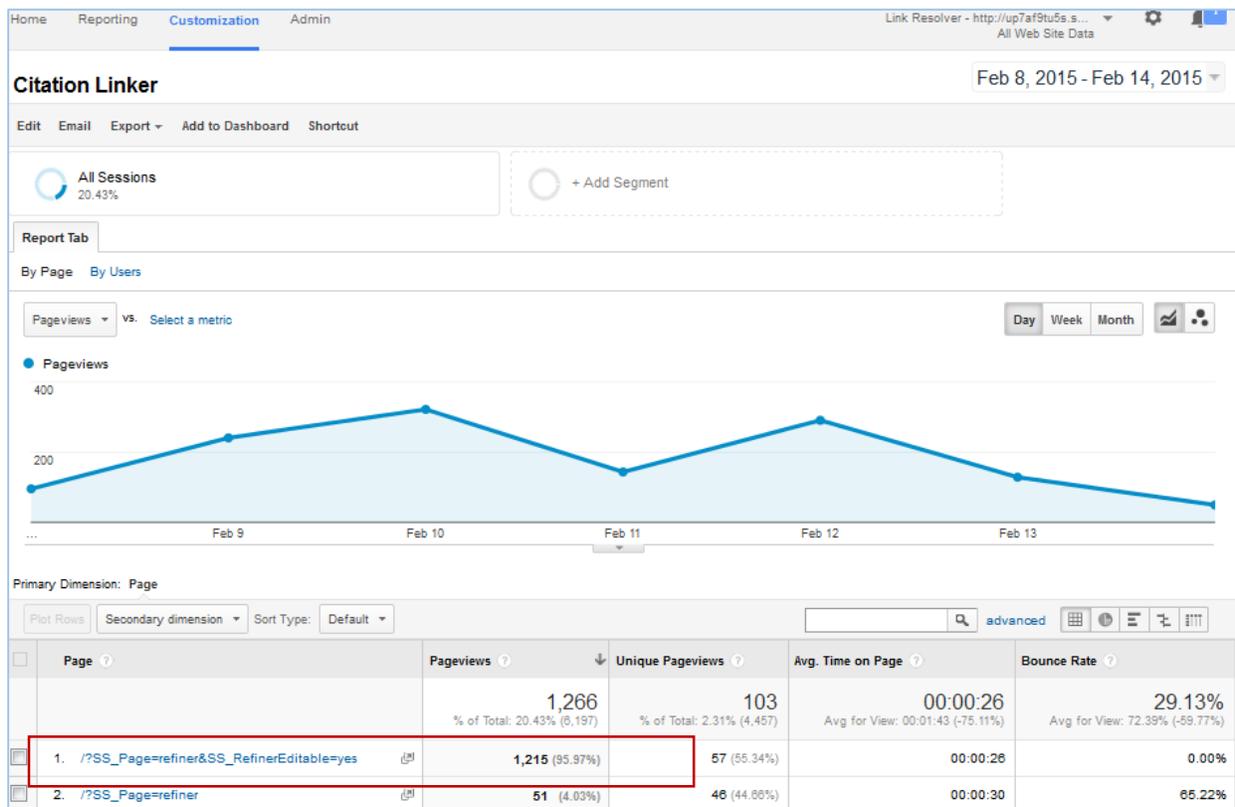
The expression we will be adding is:

`^\\/?SS_Page=refiner\\&SS_RefinerEditable=yes$|^\\/?SS_Page=refiner$`

All of the red characters are special. You can see that the remaining black characters are the URL query parameters of our two Citation Linker URLs. The “|” character means “or.” It is separating the two URLs, so that URLs matching either one will be added to our report. We need to keep in mind that many of the URLs we are collecting contain many different parameters, including these. We are interested in this report on the URLs that contain *only* these parameters. The characters “^” and “\$” mean begins and ends respectively. By placing these characters at the beginning and end of each URL, we are collecting only these specific URLs, not URLs that contain these parameters along with others. Finally, the “\” means escape. Our URLs contain other special characters “/,” “?,” and “&.” We need to place the “\” before them in order to say that we are searching for that character literally. (Ledford, Tyler, and Teixeira, 132-134)

Once the filter is finished, we are ready to save our custom report. Custom reports apply to information that we’ve already collected, it’s just whittling down the data, so we will get results immediately.

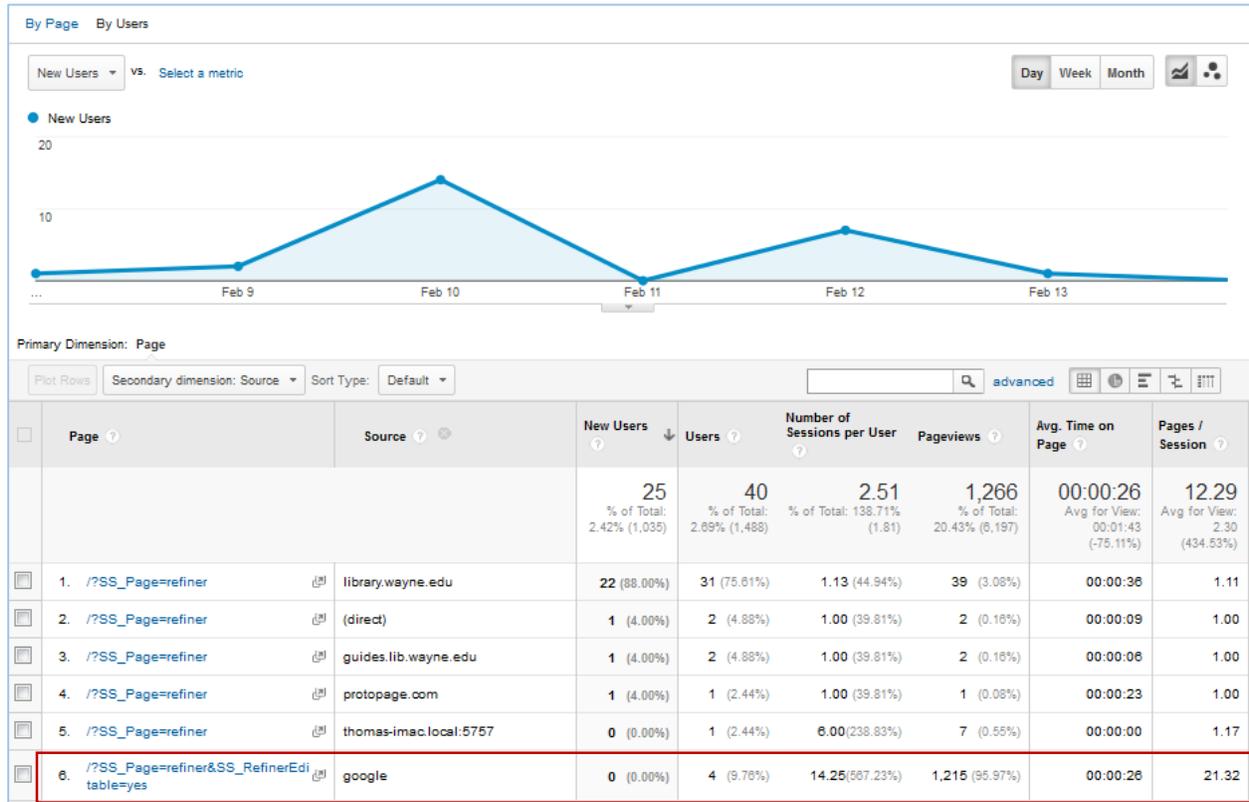
Something odd immediately jumps out of the data. One of the two URLs had vastly more pageviews than the other. However, that URL was not the one that was on the main library page. This naturally led to the question: how were users finding this page?



Google Analytics allows you to apply secondary dimensions to your reports. The primary dimension I selected for my custom report was page. I added a secondary dimension of Source, which would show

where the users were when they were linked to Citation Linker. This revealed that all the Source to this unexpected URL was Google.

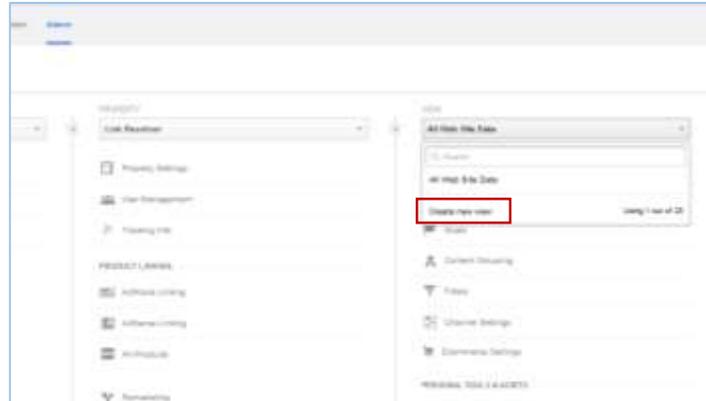
Looking at my second group of metrics, which was based on users, was interesting as well. The report revealed that there were only four different users visiting that URL. Within one week, these four users had an average of 14 sessions, in which they views an average of 21 pages per session. This use constituted the vast majority of Citation Linker use.



This led me to a hunch that this high use was librarians, rather than patrons. The question was how to separate use by librarians from use by patrons. Google Analytics does not allow you to collect, analyze, sort, or export visitors' IP data. (Some other tools such as Piwik do.) However, Google Analytics will allow you to set up different groups based on IP range.

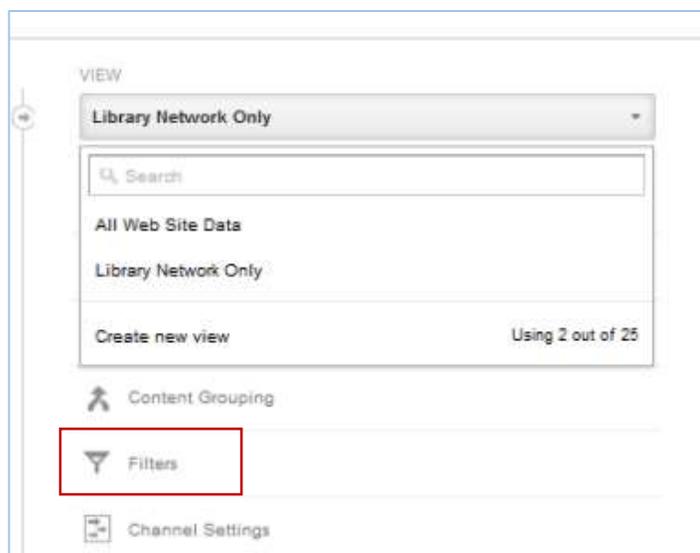
This is a two-step process. To start with, you create what are called views, then you differentiate the views by adding filters. The default view is called "All Web Site Data." When we click the new view button, it will duplicate the view that is currently active. We will then use filters to limit the views to just our library traffic or to non-library traffic. You can apply filters at a higher level, but you need to do so carefully. Filters at this level can limit what data is collected, which is not something that can be undone. For example, we would not have wanted to apply our filter to look at the Citation Linker URLs at this level, because we would not have collected any data on the other pages of 360 Link. If you don't collect something you need, you can't collect it retroactively. That is why it's not a good idea to apply filters to the default "All Web Site Data" view. It's best to leave that just collecting everything. Instead, we're going to add two views to this account, one for library network use and one for non-network use.

First, go back to the administration screen. Select “All Web Site Data.” This will open up a drop-down menu, which will show all the views associated with this account. Press “Create New View” at the bottom of this list.



This will open a fairly simple page. You’ll select name your new view, select your time zone, and make sure “Website” is selected rather than “Mobile app.” Then select “Create View.”

This is all that is needed to create a new view, but at the moment that view is exactly the same as our default view of “All Web Site Data.” We will separate these views by adding a filter to our “Library Network Only” view. To add a filter, first ensure that the “Library Network Only” view is active. The currently active view is the one bolded just below view. Then click on “Filter.”



To add a range of IP addresses, you will have to select a filter type of “Custom.” Select “Include” and set the Filter Field to “IP Address.” The IP range will have to be put in as a regular expression, including escaping the periods. If you had the IP range 123.234.56.10-19, your expression would be 123\.234\.56\.1[0-9]. You can also use the pipe (|) to separate multiple ranges. (Ledford, Tyler, and Teixeira, 135)

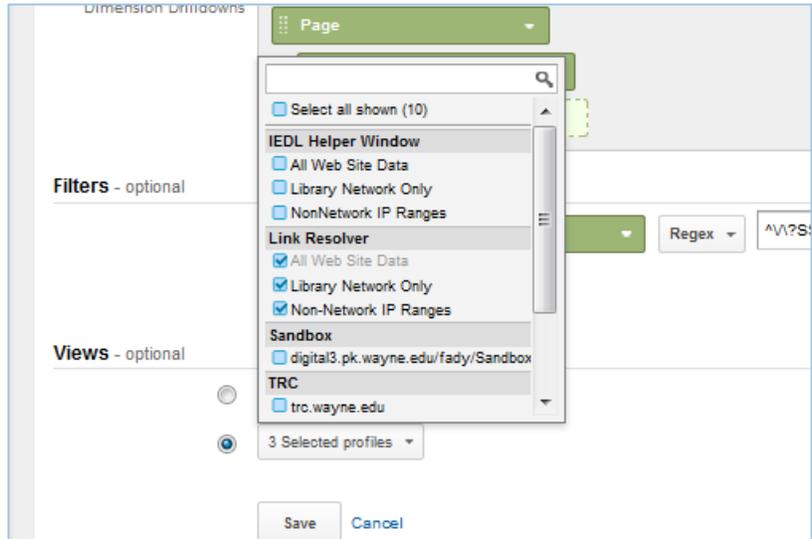
Go back to the Administration page and go through the process again to create a view for the non-network IP ranges. This time, rather than include the network IP ranges, exclude them. One important note: be sure to go back to “All Web Site Data” before you create the Non-Network View. Google Analytics will create a new view of whatever view is currently active. If you make a new view of the

View	Sessions	Avg. Session Duration	Source Rate
All Web Site Data	8,412	00:02:32	72.20%
Library Network Only	-	-	-
Non-Network Site	-	-	-

Library Network Only view, it will only include the IP addresses of the filter. When you exclude those IP addresses, your account will capture nothing.

The home page in Google Analytics will show that you now have three views in the link resolver account. However, the two new views will initially have no data. That is because Google Analytics does not record IP information, so it can't go back and separate previously collected information by IP range. We must wait for new data in those views.

The custom report for Citation Linker must also be applied to the new views. Google Analytics makes this very easy. Go back into the custom report on the default view and select "Edit." At the bottom of the page, there is a spot to select views to apply this report to. You can choose to apply it to all views associated with your google analytics account. That option includes all pages tracked by your Google Analytics account, which may include more than just 360 Link. Alternately, you can select specific views for the custom report.



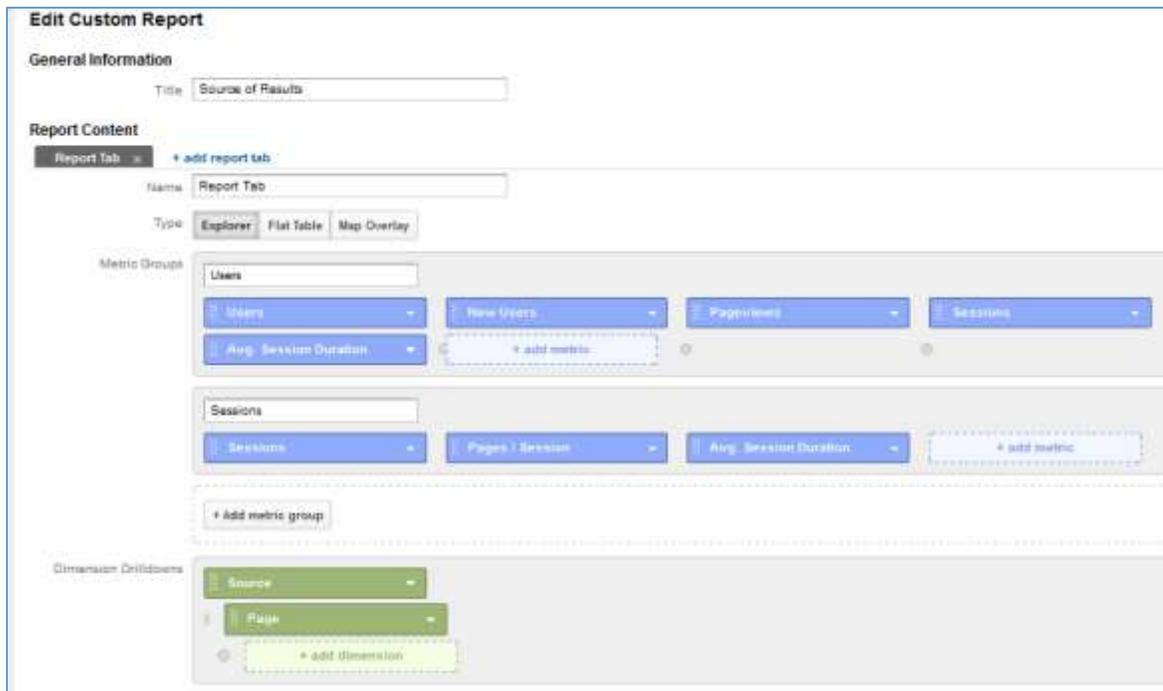
The new views based on IP range confirmed that the vast majority of our pageviews are from the library network, as are our four "superusers."

I like using this example when discussing the importance of analytics data. There was an argument over web design, over what prominence to give a feature, and the arguments were based entirely of off how we thought our patrons were using our tools. However, those thoughts are filtered through how we use the tools.

Example 2: Source of Search Results

The second example was the result of a question asked by a fellow librarian. She wanted to know what the sources of the links to citation linker. Were they going through the library search, through indexing databases, or through external tools such as Google Scholar? Google analytics makes this pretty easy to get a general estimate of this.

As before, I created a custom report for this by going to default view, then selecting "Customization > New Custom Report." This time, rather than having my primary dimension result be page, I selected source. I used my same groups of metrics based on pageviews and users.



Then I went back to by big, ugly list of URLs located along the left at “Behavior > Site Content > All pages.” I started identifying the parameters that tended to be used in search results. This time I didn’t want to see results for citation linker or any of the other tools. This was a messy process, and it did take some trial and error. There may be a few odd URLs that I missed, but what we’re looking for here are the broader trends.

I added those parameters separated by the pipe from regular expressions, which, remember, means “or” There’s also an extremely helpful regular expression that is helpful here. It’s the “.+” This basically means “stuff” so by placing the “.+” before and after each of our parameters, we’re basically saying that we want a URL that contains that that parameter somewhere in it. (Ledford, Tyler, and Teixeira, 132-134)

For example, a common parameter within our 360 Link search results was “&title=”, which contained the title of the searched article. The “Include” filter in this custom report began with “.+\&title=+|.” That way, the custom report was looking at any URL that contained this parameter.

It’s common as you dig into your data some other unexpected things that pop up. I found a surprisingly large number of URLs containing the phrase “SS_Errors=”. A quick check confirmed that they were in fact errors. I decided that I wanted to handle those separately. Google analytics allows you to add both include and exclude filters on the same custom report, so I excluded the errors by adding an Exclude Page filter containing “.+\&SS_Errors=+”

The initial results of this report based on the Users metric group are shown below.

Primary Dimension: Source

Source	Users	New Users	Pageviews	Sessions	Avg. Session Duration
	3,730 % of Total: 13.34% (4,371)	2,981 % of Total: 11.33% (4,152)	14,068 % of Total: 58.21% (24,188)	6,795 % of Total: 82.44% (10,333)	00:01:48 Avg for View: 00:02:23 (-24.37%)
1. direct	515 (11.35%)	478 (15.97%)	1,116 (7.91%)	608 (8.95%)	00:02:41
2. search.proquest.com.proxy.lib.wayne.edu	472 (12.65%)	374 (12.53%)	1,432 (10.19%)	1,138 (16.74%)	00:00:28
3. web.a.ebscohost.com.proxy.lib.wayne.edu	437 (11.71%)	282 (9.43%)	1,291 (9.19%)	727 (10.70%)	00:02:54
4. web.b.ebscohost.com.proxy.lib.wayne.edu	415 (11.13%)	303 (10.14%)	1,244 (8.86%)	706 (10.39%)	00:02:20
5. videncedirect.com	288 (7.72%)	190 (6.37%)	458 (3.26%)	382 (5.62%)	00:00:37
6. google	256 (6.86%)	151 (5.07%)	3,682 (26.17%)	432 (6.36%)	00:01:31
7. library.wayne.edu	254 (6.81%)	96 (3.22%)	794 (5.65%)	260 (3.83%)	00:01:54
8. search.proquest.com	229 (6.14%)	191 (6.41%)	671 (4.77%)	517 (7.61%)	00:00:26
9. web.a.ebscohost.com	213 (5.71%)	106 (3.57%)	611 (4.34%)	309 (4.53%)	00:03:22
10. web.b.ebscohost.com	209 (5.60%)	153 (5.10%)	675 (4.80%)	254 (3.73%)	00:04:08

It's always important to interpret results carefully. We use ProQuest's Index Enhanced Direct Linking to link directly to full-text if possible. That means that patrons landing on this search results page are disproportionately searching for articles for which we don't have the full-text or for which the OpenURL failed. I'm still exploring the implication of that. However, there are still a few interesting conclusions we can draw immediately. The first is the popularity of our resources through proxy. This reinforces the importance of off-campus access to our users.

Primary Dimension: Source

Source	Sessions	Pages / Session	Avg. Session Duration
	6,795 % of Total: 82.44% (10,333)	2.07 Avg for View: 2.22 (-6.77%)	00:01:48 Avg for View: 00:02:23 (-24.37%)
1. search.proquest.com.proxy.lib.wayne.edu	1,138 (16.73%)	1.26	00:00:28
2. web.a.ebscohost.com.proxy.lib.wayne.edu	727 (10.70%)	1.75	00:02:54
3. web.b.ebscohost.com.proxy.lib.wayne.edu	706 (10.39%)	1.76	00:02:20
4. direct	608 (8.95%)	1.84	00:02:41
5. search.proquest.com	517 (7.61%)	1.30	00:00:26
6. google	432 (6.36%)	8.52	00:01:31
7. videncedirect.com	382 (5.62%)	1.17	00:00:37
8. web.a.ebscohost.com	309 (4.53%)	1.88	00:03:22
9. web.b.ebscohost.com	254 (3.73%)	2.30	00:04:08
10. library.wayne.edu	260 (3.83%)	2.82	00:01:54

It's also interesting to compare the previous table, based on the Users metric group, to this one based on Sessions. You'll notice that by sessions, the amount of pages with direct linking fell below our main research databases. My hunch is that the direct links are students going to assigned readings, and have far fewer sessions than researchers going through databases.

This report is merely the first step.

Example 3: Source of Errors

Finally, I created a custom report to look specifically at the errors I set aside in the previous example. The error URLs contained this parameter: "SS_Errors=". Again, I set up a custom report, creating a filter to include only URLs containing this parameter. I thought a lot, and I decided I really wanted to see the source of these errors. Where were patrons encountering these links with errors?

Source	Pageviews	Sessions	Users	Number of Sessions per User
	211 % of Total: 3.42% (8,197)	50 % of Total: 1.85% (2,555)	66 % of Total: 4.44% (1,405)	0.75 % of Total: 41.20% (1,811)
1. google	114 (54.03%)	8 (0.00%)	5 (1.49%)	0.80 (0.00%)
2. library.wayne.edu	79 (37.44%)	48 (96.00%)	51 (75.12%)	0.94 (0.00%)
3. (Direct)	11 (5.21%)	2 (4.00%)	5 (1.49%)	0.40 (0.00%)
4. search.proquest.com	3 (1.42%)	0 (0.00%)	3 (4.49%)	0.00 (0.00%)
5. guides.lib.wayne.edu	2 (0.95%)	0 (0.00%)	1 (1.49%)	0.00 (0.00%)
6. sponhomed.com	1 (0.47%)	0 (0.00%)	1 (1.49%)	0.00 (0.00%)
7. web.a.utochost.com.proxy.lib.wayne.edu	1 (0.47%)	0 (0.00%)	1 (1.49%)	0.00 (0.00%)

As with the previous example, this project is still in progress, but there are obviously a few things to do immediately with this data. First, errors coming from pages we control, such as libGuides should be pursued and repaired if possible.

Errors coming from places we don't control present a greater challenge. However, this initial test presented some surprises in the data. The main surprise was in how consistent the errors were based on source. For example, these are the first four errors from google.

Page	Pageviews
	114 % of Total: 1.84% (8,197)
1. /?SS_Page=refiner&sid=serisol:RefinerQuery&ft.aulast=de+Pablo,+Juan+J.&url_ver=Z39.88-2004&I=UP7AF9TU5S&SS_ReferentFormat=JournalFormat&ft.date=2014&ft.genre=article&ft_val_fmt=info:ofi/fmt:kev:mtx:journal&ft.title=Appendix+A&ft.spage=426-435&ft.title=Molecular+engineering+thermodynamics&SS_LibHash=UP7AF9TU5S&rfr_id=info:sid/serisol:RefinerQuery&ft.issn=9780521785622&SS_Errors=InvalidISSNFormat+InvalidISSNFormat	6 (5.26%)
2. /?SS_Page=refiner&sid=serisol:RefinerQuery&ft.aulast=Shaw,+Kelly&url_ver=Z39.88-2004&I=UP7AF9TU5S&SS_ReferentFormat=JournalFormat&ft.date=2013&ft.genre=article&ft_val_fmt=info:ofi/fmt:kev:mtx:journal&ft.title=Creative+activities+as+a+means+of+self-care.&ft.spage=63-89&ft.title=Longevity,+regeneration,+and+optimal+health+integrating+Eastern+and+Western+perspectives+&SS_LibHash=UP7AF9TU5S&rfr_id=info:sid/serisol:RefinerQuery&ft.issn=9781267775269&SS_Errors=InvalidISSNFormat+InvalidISSNFormat	4 (3.51%)
3. /?SS_Page=refiner&sid=serisol:RefinerQuery&ft.aulast=Xiong,+Glen+L.,&url_ver=Z39.88-2004&I=UP7AF9TU5S&SS_ReferentFormat=JournalFormat&ft.date=2009&ft.genre=article&ft_val_fmt=info:ofi/fmt:kev:mtx:journal&ft.title=Annals+of+the+New+York+Academy+of+Sciences&ft.spage=63-89&ft.title=Longevity,+regeneration,+and+optimal+health+integrating+Eastern+and+Western+perspectives+&SS_LibHash=UP7AF9TU5S&rfr_id=info:sid/serisol:RefinerQuery&ft.issn=9781573316774&SS_Errors=InvalidISSNFormat+InvalidISSNFormat	4 (3.51%)
4. /?SS_Page=refiner&sid=serisol:RefinerQuery&ft.aulast=Holden,+George&url_ver=Z39.88-2004&I=UP7AF9TU5S&SS_ReferentFormat=JournalFormat&ft.date=1998&ft.genre=article&ft_val_fmt=info:ofi/fmt:kev:mtx:journal&ft.title=Children+exposed+to+marital+conflict+and+violence:+Conceptual+and+theoretical+directions.&ft.spage=55-93&ft.title=Children+exposed+to+marital+violence+theory,+research,+and+applied+issues+&SS_LibHash=UP7AF9TU5S&rfr_id=info:sid/serisol:RefinerQuery&ft.issn=9781557984722&SS_Errors=InvalidISSNFormat+InvalidISSNFormat	3 (2.63%)

All four have labelled as ISSN what is clearly an ISBN. Following the “&SS_Errors=” parameter, you can see that each of these had the error of “InvalidISSNFormat.”

The ones from the library website were also very consistent.

Page	Pageviews
	79 % of Total: 1.27% (6,197)
1. /?SS_Page=refiner&sid=serisol:RefinerQuery&SS_ReferentFormat[0]=JournalFormat&citationssubmit=Look+Up&url_ver=Z39.88-2004&I=UP7AF9TU5S&rft_id=info:ofi/infot:journal&SS_Errors=NoParametersGiven	15 (18.99%)
2. /?SS_Page=refiner&rft.au=Corinne+Bendersky&sid=serisol:RefinerQuery&SS_authors=Corinne+Bendersky&url_ver=Z39.88-2004&I=UP7AF9TU5S&SS_ReferentFormat=JournalFormat&rft.genre=article&rft_val_fmt=info:ofi/infot:journal&rft.atitle=Organizational+Influences+on+Disputants&citationssubmit=Look+Up&SS_LibHash=UP7AF9TU5S&rft_id=info:ofi/infot:journal&rft.atitle=detroit&SS_Errors=RequiredDataMissing	2 (2.53%)
3. /?SS_Page=refiner&sid=serisol:RefinerQuery&citationssubmit=Look+Up&url_ver=Z39.88-2004&I=UP7AF9TU5S&rft_id=info:ofi/infot:journal&rft.atitle=international+politics&SS_Errors=RequiredDataMissing	2 (2.53%)
4. /?SS_Page=refiner&sid=serisol:RefinerQuery&citationssubmit=Look+Up&url_ver=Z39.88-2004&I=UP7AF9TU5S&rft_id=info:ofi/infot:journal&rft.atitle=Organizational+Influences+on+Disputants++Corinne+Bendersky&SS_Errors=RequiredDataMissing	2 (2.53%)
5. /?SS_Page=refiner&sid=serisol:RefinerQuery&citationssubmit=Look+Up&url_ver=Z39.88-2004&I=UP7AF9TU5S&rft_id=info:ofi/infot:journal&rft.atitle=Organizational+Influences+on+Disputants++Corinne+Bendersky&SS_Errors=RequiredDataMissing	2 (2.53%)

All of these errors were caused by incomplete or inadequate metadata. These were usually cases where the citation linker was used, but enough data wasn't put in. This can provide insights into how users are actually using our tools, which can provide important guidance for instruction and usability. For example, this user clearly tried to use the citation linker as a search box.

Citation Linker

Please include a Journal, ISSN, DOI, or PMID.

NOTE: Please include a Journal, ISSN, DOI, or PMID.

Format: Article / Journal

Book

Dissertation

Patent

Genre:

Article Title:

Journal: ISSN:

Conclusion

While I am still exploring this myself, I'm excited about the possibilities of applying Google Analytics to link resolvers. It's important to keep a few things in mind while experimenting with analytics. First, ask specific and relevant questions of your data. It's very easy to get overwhelmed by the data, and the default data will usually be less valuable. Think carefully about what you need to know and how analytics could help you find it. Second, use filters cautiously. Filters can be incredibly helpful, but be careful in how you use them. At too high a level, they can affect what data you collect or see, which if you forget (and I have) can lead to wrong conclusions. Finally, data is just the starting point. It can help you identify places of improvement. With careful thought followed up by action, analytics could truly help our patrons' use of electronic resources in libraries.

Appendix: Settings for Custom Reports

Custom Report 1: Citation Linker

- Report Content
 - Metric Groups
 - By Page
 - Pageviews
 - Unique Pageviews
 - Avg. Time on Page
 - Bounce Rate
 - By Users
 - New Users
 - Users
 - Number of Sessions per User
 - Pageviews
 - Avg. Time on Page
 - Pages / Session
 - Dimension Drilldowns
 - Page
 - Source
- Filters
 - Include
 - Page
 - Regex
 - `^\?SS_Page=refiner&SS_RefinerEditable=yes$|^?\?SS_Page=refiner$`

Custom Report 2: Source of Results

- Report Content
 - Metric Groups
 - Users
 - Users
 - New Users
 - Pageviews
 - Sessions
 - Avg. Session Duration
 - Sessions
 - Sessions
 - Pages / Session
 - Avg. Session Duration
 - Dimension Drilldowns
 - Source
 - Page
- Filters
 - Include
 - Page
 - Regex
 - .+\&title=.+|\&SS_issnh=.+|\&issue=.+|\&isbn=.+|\&issn=.+|\&doi:|.+.+ctx.+|.+rft.+|.+sid=.+|.+id=pmid:.
 - Exclude
 - Page
 - Regex
 - .+\&SS_Errors=.

Custom Report 3: Error Report

- Report Content
 - Metric Groups
 - Pageviews
 - Sessions
 - Users
 - Number of Sessions per User
 - Dimension Drilldowns
 - Source
 - Page
- Filters
 - Include
 - Page
 - Regex
 - .+SS_Errors=.

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