Original Article

Search ROI's missing element: Search analytics

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ABSTRACT Many organizations have been and are still trying how to prove Return On Investment (ROI) for their DAM system. This commonly and often only includes employee/customer efficiency and financial hard and soft ROI, which are beneficial, but not enough and often hard to prove as well. What is missing is ROI at the strategic level that can be used to optimize and continually improve upon your ROI. That missing strategic element is Search Analytics. Search Analytics is a methodology and the process of analyzing search queries and user behavior within an information retrieval/search system in order to determine the search quality and relevancy of your search system and produce actionable results that can be acted upon.

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INTRODUCTION

There are many business reasons why an organization would invest in a Digital Asset Management (DAM) system, some of which could be cost reduction, cost avoidance, strategic value-add, revenue generation, intangible business value¹ and so on. But one of the biggest questions and challenges facing organizations is how do you prove and demonstrate Return On Investment (ROI) with your DAM system?

Attempting to prove ROI with a DAM, or any type of information retrieval (IR) system, via trying to accurately predict how much money the organization will save or stands to gain through its usage is extremely challenging, but also very common. Although a complete and detailed explanation of ROI is outside the scope of this article, there is one particular area of IR/Search that is often overlooked – the strategic level. The strategic level ROI allows you leverage, understand, take advantage of,

optimize and potentially compete against your competitors on that data.

The missing element

Whatever the business goal or goals for your DAM are, they all in some way involve a single vital function of every DAM system – IR, that is, search and findability. Unfortunately, many organizations stop short of fully utilizing search data for ROI and only consider:

1. Direct benefit to users² – users can quickly and efficiently find what they are seeking;
2. Financial benefits – depending on the business goals these can be a mix of:
 - (a) Hard ROI – direct generation of addition revenue and cost savings,
 - (b) Soft ROI – improved productivity and efficiencies,

What is missing is the higher level strategic thinking around ROI by leveraging search data to

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spot and understand trends in your search queries and being able to adjust and optimize your assets, content, labels, navigation, metadata, products and more by taking action on your search data findings. This missing strategic ROI aspect of search can be found with 'Search Analytics'.

SEARCH ANALYTICS

Search analytics is perhaps one of, if not the most important type of analysis you should be performing on your DAM system, because

1. Unlike other analytic activities such as, click stream and aggregate data, search queries directly convey *user intent*;
2. Unlike the two previously mentioned methods of proving ROI, Search Analytics can quantifiably prove the success (or failure) of your DAM system.

The importance of user intent

When a user inputs a query into your system they are in a way 'confessing' their needs to you. They are telling you exactly what they need and how they are thinking having their needs solved for. The question is, 'are you listening and what are you doing about their needs'? If you are not reciprocating and engaging your users in a two-way dialog and conversation you are not only not taking advantage of this opportunity to not only improve upon your ROI, but are also losing out on the opportunity to understand your users in a much deeper way that is truly unique in the world of search analytics.

Search data is quantitative in nature; therefore, it provides you with behavioral data, that is, what users actually did. The other half of that story is 'why' a user did it, which is their motivation and intent for doing something. Examining your search queries helps bridge that gap by being able to answer the question 'what are users looking for'? Within a closed enterprise environment where you cannot take advantage of machine learning algorithms, PageRank, link structure and so on understanding user intent is the key to your success by knowing where and why users are succeeding and why they are not with search and findability. That knowledge can be directly translated into how successful you will be at fully realizing and achieving your business goals through the use of Search Analytics.

Making search data actionable

As with any type of analysis the goal is not to collect or analyze the data, but instead to turn that data and analysis into insights that can be acted upon in a way to help you achieve your business goals. In order to achieve those goals though, you will need a defined process in order to utilize that data. The process does not need to be complex, in fact the simpler is better, it just need to be defined in such a way to allow the data that is being collected, reported and analyzed to be able to be acted upon.

Within Search Analytics there are four different areas or phases³ of the search analytics process that you will need to use in order to be effective:

1. Defining Business Metrics/Key Performance Indicators (KPIs)
2. Reporting
3. Analysis
4. Optimization & Action

Defining business metrics/key performance indicators

'You can't manage what you don't measure. You can't measure what you don't manage'. Knowing what you are trying to achieve and how to measure its success is the foundation and as basic as it gets with analytics. Unlike many analytic metrics, many search metrics are behavioral⁴ metrics. Meaning that they are not an aggregate number (a way to measure activity in your DAM system), but instead tell you something directly related to a user's behavior.

In order to identify what business metrics and KPIs you need to be using you must first look at your overall business objectives, business goals and business strategy and how user behavior affects you achieving your overall business goals. Based upon what you are trying to achieve, there is most likely a KPI or a several KPIs that that can help you measure, monitor and act upon that data to help you achieve those goals. Keep in mind that custom KPIs are common, but in most cases should not be used until you have become familiar with the standard set first.

Search metrics

Depending on your DAM system's analytics capabilities you may or may not have these metrics available to you and may require you to

have an additional analytics tool to help you optimize your onsite search activities. These search metrics are also a starting point in the process of determining what metrics and KPIs only. This list in no way should be considered an exhaustive list.

- Per cent of search sessions that click on a search result
- Per cent of searches that return zero results
- Per cent of sessions that had no results clicked
- Per cent of searches that users exit from the search results page
- Per cent of sessions that use search
- Average number of searches per session
- Average number of search result pages viewed for a keyword
- Average number of pages viewed after searching
- Average time spent after searching
- Average time spent before searching
- Average time spent on search results pages
- Conversion ratio of visitors who use onsite search
- Number of searches per session/number of items added from search results
- Session duration for all sessions that included searches
- Search conversion rate
- Search refinement rate
- Top search terms
- Top search terms with corresponding conversion rates
- Top keyword groupings
- Top decomposed keywords
- Top keywords/phrases that return search zero results
- Top locations on the site where onsite search was initiated from
- Total unique searches

After you have determined your business goals determine, which of these metrics will provide you with the insights that will best serve you in achieving your business goals.

Reporting

Once your KPIs and metrics have been determined the next step is obviously to be able to track them and report on them. It is important to note that even though you should have identified only a few KPIs that you will need to track all the supporting metrics for

those KPIs, which will allow you to better understand user behavior, intent and overall system usage performance.

A key factor with reporting is to only show what information the person that is viewing the report needs to see in order to make a decision. This typically means that custom reports will need to generate. When creating these custom reports keep in mind the differences between people's roles and position in your organization. That will help guide you to determine what level of details they need to see, that is, the differences between strategic, tactical and operational level data.

To help guide you in this process ask yourself the following questions:⁵

1. Who needs to see what data?
2. How do they leverage it?
3. How often do they need to see it?
4. In what form should it be delivered?

Analysis

Analysis is the next and often forgotten step in the process of being able to use data to make fact-based decisions. Performing analysis is a critical difference from merely reporting on the data, which only tells what has already happened, that is, it's always backwards facing. Analyzing the data will provide you with insights and understanding into why your users are behaving the way that they are allowing you to take action upon those insights to help you achieve your business goals. Reporting alone can never accomplish this.

There are four clusters of search analysis that you will want to begin with:⁶

1. Search Usage
2. Keywords
3. Search Quality
4. Segmentation

Search usage

Frequency addresses how many users used search and how often they use it? In the case of a DAM system, search should be the number one most used navigational element used to find assets/content. Although the percentage varies from organization to organization and even more so depending upon the quality of your results, this number should most likely be above

if not well above seventy per cent (70 per cent). Again, that is only a guideline, but it is very important to watch and trend this value over time, as it can show you when and where users are using alternate navigational paths, which may not be as effective as your search function or is a sign that users are not finding relevant results and are seeking alternate methods.

Keywords

Keywords are the next item that you will want to explore. Keywords are a direct view into your user's mind providing the context, current state of mind and where they were when they initiated search. This is where user intent is derived from.

One of the greatest single benefits of reviewing keywords that can be gained is an understanding of your user's '*natural language*'. By knowing your user's natural language you are able to apply that language and vocabulary to your labeling system, metadata, create controlled vocabularies, modify your search algorithm and more to better align any potential user and internal language barriers. A simple and great place to begin is by viewing your top 10/25/50/and so on keywords. Trending keywords over time will be critical to your search success and ROI, keeping in mind that they may change and become more or less relevant around seasonality, projects, campaigns, brands and so on.

Search quality

Search quality is all about search relevancy and findability. Besides asking a HiPPO (Highest Paid Persons Opinion) in your organization (this is never recommended), how do you know if your search is serving relevant results? Although there are many techniques beyond the scope of this article, there are a few quick ways you can quantifiably determine if you are delivering relevant results to your users or not.

Per cent of sessions that had no results clicked

The easiest place to start is perhaps to look at the percentage of users that do not click on any search results that were served to them. In this case a user entered a query and was served results that didn't meet their expectations.

Drilling down into the individual keywords that are causing the issue will tell you where the

problem lies, which could have something to do with your algorithm, indexing, or it may simply mean that you don't have any assets that are applicable, but still show up in search.

Average number of search result pages viewed for a keyword

The major public search engines have trained us that the best results are on the first page. When you observe the behavior of users moving beyond the first page of results it is a good indicator that your user's needs are not being met.

If you see the number of search result pages viewed for a particular keyword/phrase or your overall average number above one (1), you will want to investigate and try and move the results that users are clicking on to the first page.

Search refinement rate

When a user has to refine their query it means that the results provided again did not meet their expectations and they have decided to try and change their query in order to get what they had hoped for the first time. You should discover over time that this behavior is common around certain keywords, not all keywords. If this behavior is happening around more than a small percentage of keywords, you at best have a serious disconnect with the language you are using and the language of your users. At worst have a serious search algorithm issue. Both of this need to be addressed immediately.

Be aware that if your DAM utilizes filters and facets with search that they may automatically show up as a refinement. You will have to isolate and adjust your reporting accordingly on how to handle this.

Per cent of searches that return zero results

This occurs when user enters a query and is returned zero results. This is a fairly straightforward one, you simply need keep track of the keywords that are causing the zero results to be returned and do one of several things:

- First verify that the query is relevant to your organization that is if you are an automotive company and someone searches for 'apple picking' it might not be such a big deal if you return zero results.

- If the query is relevant and should return a result you need to verify that you do not actually have assets/content in your DAM that are not being served. This is often a simple indexing issue or missing metadata, but can also be much greater issues such as your algorithm.
- Then, if the query is relevant and you have determined that you do not have any assets/content in your system you can then notify the appropriate party within your organization in order for them to create the new asset

Segmentation

Segmentation is another area of data analysis that is not utilized as much as it needs to be, but segmentation should be a standard procedure and requirement. In fact, if you are not performing segmentation you not going to get the type of actionable insights you are looking for.

Although understanding what your users are doing is good, being able to classify (segment) them into smaller groups is better, and if you can get to the point of being able to serve custom results based upon segmentation you have reached the nirvana of search. Therefore, where do you begin?

Basic, but useful segments include:

- First-time users
- Repeat users, or those who pass a specific threshold
- Geolocation
- Dayparting
- Season
- Campaign
- Company, brand, division and so on

Always define segments with your business goals in mind and keep in mind that when you are segmenting based upon behavior that it can differ greatly from what you learn from overall system behavior. The next step is to define the desired behavior for each of your segments.

And, lastly you will want to customize content on a segment-by-segment basis.

Optimization and action

The fourth and last step in the Search Analytics process is to finally take action on the insights gained from the analysis phase. This surprisingly is not the easiest thing to do, not because you can not deliver great actionable insights, but because most organizations do not have the proper processes in place to allow the changes to be implemented.

How and what those processes should be are outside the scope of this article, but are vital in closing the loop to have your Search Analytics provide the maximum value and improve the quality of your search and your ROI. Several great resources to help you develop and create an environment to be able to take action on your insights are 'Cult of Analytics: Driving online marketing strategies using web analytics' by Steve Jackson and 'Web Analytics 2.0' by Avinash Kaushik that can help you on your journey.

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