EasyAsk.

The ABCs of E-Commerce Search:
A Guide to Essential E-Commerce Search Features

The Benefits of E-Commerce Search

Time and again, industry reports have proven that e-commerce search and merchandising can be a make or break technology for your e-commerce revenue and operations. Survey data shows the potentially strong downside of poor search:

- A whopping 85% of site searches don't return what the user sought[1],
- 22% of searches return no results[2],
- 80% of visitors will abandon if the search is poor[3]

Poor search leads to lost visitors, poor conversion rates and lower e-commerce revenue.

On the flipside, a recent report from the Aberdeen Group called "Retail E-Commerce Search – Accuracy, Relevancy and Profitability in the Age of Consumer Choice" (October, 2010) documented the potential upside to this equation. The study found that retailers implementing "Best In Class" e-commerce search and merchandising:

- Increased year-over-year average order value by 20% (compared to 8% for Industry Average),
- Had a current net profit margin of 15% (compared to 5% for Industry Average),
- Had a current average online conversion rate of 6% (version 4% for Industry Average).

For a large retailer with 100,000 visitors a day and average purchase price of $120, a conversion rate increase from 4% to 6% can mean an increase in $87 million a year – a very easy investment to justify. But even for a smaller retailer with 10,000 visitors per day and an average order size of $50, the same conversion rate increase adds $3.6 million in revenue per year – still an investment that is easy to justify.

The Basics: What Capabilities Do You Need in E-Commerce Search

Similar to people who stop into a brick-and-mortar store, there are two general types of visitors who come to your e-commerce site – browsers and buyers. Browsers want to explore various products on the website, often trying to educate themselves to make informed purchase decisions. Buyers, on the other hand, know what they want, have come to the site to make a purchase and want to find that product right away.

It is important that your search, navigation and merchandising solution streamlines the process for both of these consumer types. Alienating one or the other reduces your sales opportunities and conversion rates.

Your search and merchandising objective with a shopper is to reveal as much information as possible, gently leading them to a purchase decision. For the buyer, your search and merchandising objective is to get the right product to the cart as fast as possible and finish the sale.

To this end, there are a number of critical things you need to perform within your e-commerce search, navigation and merchandising to meet these objectives. These include:

- *Always return results* – or to put it another way, eliminate the "No Results" page. There is nothing more frustrating to a site visitor to perform and search and see a "No Results" page. The number one job of your e-commerce search engine should be to make sure results are returned whenever possible.

- *Return tuned, accurate results* – a second pet peeve of site visitors is to perform a search and have to wade through a volume of results that were not germane to their search. If always returning results is the first job of your e-commerce search, a close second is never delivering too many results.

- *Offer rich attribute navigation* – buyers will come to your site with a very specific set of attributes in mind, while shoppers will want to see a wide variety of attributes to guide their decisions. Therefore, your e-commerce search solution needs to provide an extremely rich a set of navigational attributes to guide the visitors.

- *Enable effective merchandising* – If you have delivered the previous capabilities in your e-commerce search, then you will have happy visitors who will be far more responsive to attractive promotions and offers. A superior e-commerce search platform will also help you deliver customized, attractive offers and promotions which will increase purchase sizes and wallet-share.

- *Rich analytics for proactive management of the search environment* – your customers, products and marketplace are continually shifting. It is critical that your team of merchandisers can stay on top of trends and consumer shifts in order to rapidly tune the e-commerce search and merchandising. To serve this need, it is critical that the e-commerce search provide detailed, actionable analytics.

Does Your E-Commerce Search Engine Deliver?

When procuring your e-commerce search products – whether buying on-premise software or Software as a Service (SaaS) – you need to know whether the product you are procuring delivers the key capabilities mentioned above. So how do you know if the underlying product can deliver?

To support the aforementioned capabilities, the e-commerce search platform and tools need to provide a number of key features. The remainder of this white paper will outline these critical features and will provide you with a blueprint of what to ask your e-commerce search vendor when you meet.

CASE STUDY

Schuler Shoes

Schuler Shoes is the oldest family-owned shoe store west of the Mississippi. Schuler began e-commerce operations in 1999, and went through a major revamping of the e-commerce storefront in 2008. While the new storefront offered a better customer experience, Schuler wanted to add enhanced search and results-driven merchandising that went beyond the simplistic search contained in their shopping cart software.

"We really needed a much better way for customers to easily find what they were looking for using their own terms," notes Schuler. The company chose EasyAsk because the powerful natural language technology provided rich, enterprise-class search and easy to use merchandising capabilities with low total cost of ownership.

With EasyAsk, Schuler was able to assign a wide variety of attributes to any item, making it easier for shoppers to find products and complete their purchases. In the first four months of using EasyAsk, use of the search function increased by 660% and search exits declined by 51%.

EasyAsk's natural language engine and easy to use tools allowed the merchandisers to directly control the shopping experience. New time-based promotions were quickly created and

managed inside EasyAsk. Schuler was also able to use operational attributes to automatically add clearance products to the site and sort items by profitability metrics.

Overall, EasyAsk was able to generate a 28% increase in online revenue, a 60% increase in the number of products purchased, and a 34% increase in transactions (meaning larger order sizes with multiple items).

Always Return Results

The most frustrating experience a user can have with site search is to get a "no results" page. This happens when the search engine cannot match the user's search string to data for any of the products.

Sometimes this is not the fault of the product data. The user might have misspelled words in the search string. Or the search string might have been too specific and the products in the catalog are not offered with all those characteristics – e.g. a search for "red sleeveless dresses" when there are no sleeveless dresses in the color red.

In order to effectively eliminate many "no results" searches, the e-commerce search engine needs to support four key features: relaxation, automatic spell correction, stemming, and full search term control.

Relaxation

The longer and more complex the search string, there is a greater likelihood that it will return no results. In the case of a no results search, a search engine that supports relaxation will try to relax out, or ignore one or more of the terms in the search string so that some results will be returned to the visitor.

For example, if the user searches for "black Levis jeans" and there are no products that match the exact term, the search engine try will *relax out* terms to get results. If the e-store carries no black jeans, but does have Levis jeans, then the search engine will relax out the "black" and return results for Levis jeans. A message will be returned and displayed to the user explaining the site could not find "black Levis jeans" and returned only "Levis jeans." This technique ensures that the search will return some results to the visitor rather than seeing the dreaded "no results" page.

Spell Correction

A powerful and automatic spell correction mechanism built into the heart of the search engine is an essential aspect for e-commerce search. We all make typing mistakes and it is not uncommon for visitors to misspell some of the terms in our search. A robust embedded set of spell correction algorithms can look at the product data and find many of the common misspellings. Then when a misspelled search is performed by a visitor, the search engine will automatically correct the misspelled term in the search string and deliver results that the visitor intended to see. Going back to our example, if the user entered "black Levis jeams", the engine should recognize the misspellings "jeams", replace the term with the proper term – jeans – and return the intended results. Once again, we have avoided a no results search.

Stemming

Another critical aspect of the search engine is to support stemming - linguistic intelligence that identifies different word forms such as plurals, tenses, etc. Shoppers might use different forms

of words to describe specific attributes such as sizes. Stemming creates a common ground on which your e-commerce engine can support all the different forms your visitors might use. As an example, the searches "straight leg jeans" and "straight legged jeans" will be supported and return the same exact results if your e-commerce engine supports robust stemming. Stemming continues to eliminate the no results searches and gives your site search greater flexibility.

Search Terms

An e-commerce search engines will read your product catalog and automatically build a search capability for visitors to search on the keywords in the catalog. But there can be additional terms that visitors might use when searching for products that are not contained in your product catalog. How does the search engine account for these terms and return results to the visitor.

An e-commerce search engine should make it easy for the search and merchandising mangers to add their own Defined Terms to the search engine. Easy to use GUI tools with English style rules builders will allow you to define new terms that customers may use such as synonyms, phrases, consumer slang, or industry terminology. As a result, the dictionary will return the proper results on these search terms and further eliminate "no results" searches.

For example, without a Defined Term, a search on "Denim Pants" might return results for simply pants if the engine supports relaxation or even no results at all. The search management GUI should make it easy for the search manager to enter a new Defined Term, "Denim Pants", which would be a synonym for "Jeans." With the Defined Term in place, a search for "Denim Pants" would return the same results as "Jeans."

The GUI and search engine should also provide the flexibility to provide redirection to a specific web or landing page if so desired by the search manager. For example, Defined Terms such as "Order Status" or "Shipping" should send the visitor to the Order Status or Shipping landing pages. Or a Defined Term representing a product, manufacturer or brand could send the visitor to a dedicated landing page for that product, manufacturer or brand.

Tuned, Accurate Results

The second most disappointing experience in site search is getting too many results, a good many of which are not relevant to the user's search. Returning too large a result set will leave the visitor with the daunting task of wading through many pages of products to find the exact one they seek. Returning inaccurate results will cause the visitor to lose faith in the search box, abandon their search and often times leave the site altogether.

Many e-commerce search and merchandising engines are keyword based. Keyword search will try to match the one or more of the keywords to different fields in the product catalog. If the user enters a very long search term with multiple keywords, a keyword based search engine can return a large number of products because it finds the superset of results based on each keyword.

Because of the inaccuracy of keyword based search, many users have been trained to search a different way. Rather than enter a search term of exactly what they seek, the user will enter a simple search, then refine the search by navigating through different attributes.

Using keyword based search engine, rather than enter a complete phrase such as "black dresses under $50", the visitor will search on "dresses", then click on the color attribute (black), followed by a price range attribute to refine their search. This requires three clicks to get to the accurate set of results the visitor sought.

For more complicated searches, such as "black long sleeve dresses under $50", the keyword-based search engine may not understand that "long sleeve" is a type of dress. This would force the visitor to identify the long sleeve dresses on their own.

Natural Language Search

Natural language search eliminates the extra clicks and plays a critical role in helping your visitors find what they want on the first page. A search engine with natural language capabilities will linguistically process the entire search phrase to understand the complete context. This allows the shopper to enter an exact descriptive phrase and get accurate results on the first page using only one click.

Using our example, a natural language engine will process the search string "black 32 inch waist jeans" and understand that the terms "black" and "32 inch waist" are descriptive attributes for the desired product, jeans. The natural language engine will then seek only jeans in the color black AND those with a 32 inch waist, and only return those results to the visitor.

If your e-commerce search engine does not support natural language processing, then your visitors are spending needless extra clicks to find their products and may be manually wading through large volumes of inaccurate results. This creates serious risk of shoppers abandoning your site due to a poor online experience.

Relevancy

The idea of Relevancy in a search engine is to provide a confidence score via which search results can be ordered or even dropped. A good search engine will allow the search manager to easily specify how the relevancy scores are generated and then how relevancy scores are used in search results.

For example, one may define searches that match more important product catalog fields such as Product Name or Category Name to have "high relevance", while only matching a Long Description field may have "low relevance." This can then be useful for displaying search results, with results sorted or dropped via a relevancy threshold.

This essential capability allows products with the term "jeans" in the Product Name or Category Name to be moved towards the top of the search results. In addition, it allows the merchandiser to filter out ancillary items in the results that might have been displayed, such as blouses with a Long Description that contains "…looks good with jeans…"

CASE STUDY

DollarDays International

After operating on the internet for over a decade, DollarDays International had generated tremendous revenue growth, even in a business environment where competitors are shrinking or going out of business. The company had also seen the number of products/SKUs they offer on their site skyrocket to over 225,000, creating a strong challenge for customers to find their relevant products quickly and easily.

DollarDays selected EasyAsk natural language search, merchandising and faceted navigation to better guide visitors and present high priority items in much less space. DollarDays also used EasyAsk analytics to discover and actively promote the top items its customers are looking for to further drive sales of hot items.

According to DollarDays CEO Marc Joseph, "EasyAsk search dramatically reduced the time for customers to find products and get to that all important checkout stage. As our number of items and seasonal merchandising needs grew, EasyAsk's superior faceted search enabled our shoppers to more explicitly explore items across multiple dimensions. We offer a number of niche products, and once the visitors get to our site, we need to make it easy to find the exact product they want. EasyAsk helps us do that."

Rich Attribute Navigation

Attributes are usually adjectives that describe a product. Or put another way, every product you sell has a set of attributes that describe the product. Typical attributes are things such as size, color, material, price, and more.

Attributes are essential to the search and navigation process to refine search results. A search on "jeans" may produce a series of navigation attributes such as the different colors or sizes the product comes in, which the visitor can then click on to refine their search. A more sophisticated search engine supporting natural language processing can understand in a search for "stonewashed Levis jeans under $50" that "stonewashed" represents a style, "Levis" represents a Brand, and "under $50" represents a constraint on the Price attribute. This allows the search engine to return a highly refined set of results based on those attributes.

In general, more attributes in your search and merchandising dictionary means it supports much greater fluency and can deliver highly accurate results across a wider variety of searches. But to build this type of flexibility into your e-commerce search, your search platform needs to support more than just static attributes.

There are four types of attributes that you should always check to make sure are supported by a search engine.

Data Driven Attributes

Data-driven attributes are characteristics about your products which come directly from data fields in your product catalog. Often these are things like size, color and price, but can also be special fields such as "On Sale Item."

Derived Attributes

As the name indicates, these are attributes derived by the search engine based on a definition (often times a rule) added to the search engine. For example, Brand is often a derived attribute, and is derived by a search rule that examines catalog fields for a set of brand names. When a specific brand name is found, the value is returned in the Brand attribute field. Derived attributes enhance the guided navigation experience for the visitor.

Dynamic Attributes

Dynamic attributes are those which are dynamically generated during a search. For example, a numeric range such as a Price Range, is a typical dynamic attribute. The search engine should offer the flexibility to re-calculate ranges for dynamic attributes based on the values in the

search results if it makes sense, and NOT be forced to always use static ranges. This creates a better display capability for search results and navigation hierarchies.

Operational Attributes

Operational attributes allow you to incorporate data from operational systems (inventory, product age, etc.) and extend search and merchandising beyond your product catalog. By using operational attributes, the search results could incorporate information that could guide the buyer towards a purchase decision. For example, if Inventory On Hand is an operational attribute, and the value is less than 5 for a product in a search result, a "Only a Few Left" might be displayed near that product to alert the buyer of the low inventory and try to incent a purchase.

Requirements

As you explore search and merchandising platforms it is important that you not only check that all these attribute types are supported, but also see how easy it is to create and use the different attributes types. For example:

- Can the search engine automatically generate a standard dictionary of direct attributes within hours or even minutes of connecting to a product catalog?

- Do the tools allow non-technical users to create new defined attributes with easy to define English style rules and offer interactive visual results to test and refine the rules?

- Does the search engine allow dynamic attributes that are automatically recalculated within each search supporting dynamic bands or ranges and are NOT based on static bands or ranges?

- Does the search engine allow you to incorporate operational attributes such as inventory, shipping methods, or arrival dates in your search and merchandising and allow fast refresh of the search index to incorporate intraday refreshes of this data?

Effective Merchandising

Every search a visitor performs provides not only hints as to what they are looking for, but also ideas as to what else they might like. Therefore, your search platform needs to provide flexible, easy to use tools and mechanisms to generate effective promotions and offers.

A key aspect of effective merchandising is agility. Your markets, customers and products will undergo a variety of changes. Therefore your search and merchandising platform should allow your team to be responsive to these changes.

When looking at the merchandising features of e-commerce search platforms, an important set of questions you need to ask are: Can I put the merchandising tools directly in the hands of my business users – the marketers and merchandisers? Can the marketers and merchandisers create new programs or adjust merchandising techniques on their own, without the need to ask the IT team?

If the merchandisers are to self-manage the promotions and offers, then they will need easy to use tools to define and adjust the merchandising characteristics of the products. This includes easily creating rules which declare when and how promotions and offers are to be performed, and being able to tweak merchandising parameters such as raising or lowering products in results pages, via GUI tools.

A few questions to ask when evaluating the merchandising aspects of an e-commerce search platform under review include:

- Does the platform and tools give your merchandisers a direct and easy way to create business rules that define your promotions and offers?

- Do the tools support a flexible set of parameters and easy to use interface to tailor the guided navigation including the ordering of categories and attributes, and the use of derived attributes, operational attributes and dynamic attributes?

- Are there multiple parameters and an easy to use interface to define how search results are to be displayed and filtered, including relevancy scores and operational attributes?

- Does the platform support event-driven offers and promotions in search results and an easy to use means for merchandisers to choose between the different display mechanisms including carve outs, banners and others?

- Does the platform allow merchandisers to use operational attributes to merchandise and promote products? Examples would be to raise products in search results that are low in inventory, or promote sales on products in carve outs that are soon to be discontinued.

Rich Analytics and Proactive Management

Search analytics provides critical information about how your visitors are using the search services. Search analytics can also offer insight into customer behavior and trends.

In order for your search and merchandising team to deliver the results you expect, the e-commerce search platform needs to offer rich, pinpoint analytics that (a) show them how to tune the search engine and dictionary, and (b) deliver information to drive offline processes to fulfill customer demand or needs.

Search Analytics

The core search analytics and reporting is essential to the day to day operation of the search services. Without a rich set of analytics and reports, the search and merchandising team will be operating blindly with no guidance as to how to tune the search capabilities. This will drive up the operational cost of your e-commerce search environment.

An e-commerce search platform should provide the following search analytic capabilities for easy tuning that reduces the cost to operate your e-commerce site:

- A high level dashboard that displays critical metrics and information on how the search environment is performing including percentage of searches returning results, attribute use breakdown, and more,

- A breakdown of the top searches and navigation clicks performed by visitors which are useful for streamlining the navigation and optimizing the search results for key products,

- Reports that identify problems visitors have encountered with the search environment, including: zero result searches, problematic search terms, relaxed search terms, and spell corrections,

- Actionable links within the above reports that immediately bring the user into the search tools to quickly add or administer to the issue laden search terms reported by the analytics,

- An easy to use interface that allows both the IT team and merchandisers to perform ad-hoc analysis on the rich set of information maintained by the search engine logs.

Merchandising Analytics

The aforementioned analytic reports provide a rich set of information to aid in the merchandising aspect of the e-commerce search environment. For example, the Top Searches and Navigational Clicks reports can tell merchandisers the most popular searches and attributes which they can target for cross- and up-sell promotions.

In addition, the information from the search analytics can provide insight on customer demand or trends to drive offline processes such as inventory, product line expansion and in-store promotions, including:

- High volumes of searches and conversions on specific products can signal merchandisers to order more stock, while high volumes of searches on specific products with few conversions could cause the merchandisers to investigate price adjustments or other merchandising aspects,

- Searches for specific products not carried by the retailer or offered on the e-commerce site could signal merchandisers to investigate adding those to the product line.

Conclusion

An e-commerce search and merchandising platform can deliver a large number of benefits to your e-commerce operations including increased conversion rates, stronger customer loyalty, agile promotions and merchandising, and larger order sizes. These all contribute to the most important result – increased e-commerce revenues.

But not all e-commerce search and merchandising engines are built the same.   And in order for your organization to reap the benefits with the most efficient amount of effort and cost, the e-commerce search and merchandising platform needs to support the core capabilities described here. In addition easy to use tools and rich analytics are essential to deliver a rich customer experience and continual improvement.

We highly recommend you look closely at the entire search and merchandising environment when making your procurement decision. With any product, whether on-premise software or SaaS, you take into account whether the search and merchandising platform can deliver on the benefits promised AND provide a low cost of ownership.

[1] – Enriching Search: Efficiency Without Additional Spending, Jupiter Research

[2] – Unpuzzling Search: Best Practices from Mondosoft Study, IDC

[3] – Search Technology: Resurrecting the Web's Workhorse, Jupiter Media Metrix

About EasyAsk

This paper was brought to you by EasyAsk, the company that is radically changing the speed and ease of how people find information through our groundbreaking natural language search and query software. EasyAsk software products go far beyond traditional search, allowing users to simply ask questions in plain English and receive highly tuned results on demand. The EasyAsk eCommerce Edition uses this unique technology to deliver an industry leading website search, navigation and merchandising solutions that boosts online revenue through increased conversion rates, better customer experience and agile merchandising. EasyAsk Business Edition revolutionizes enterprise decision-making, moving beyond traditional business intelligence solutions with easy, low-cost deployment and a unique natural language interface that extends access to information anywhere in the organization.

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