

# Search and Faceted Metadata on



## Introduction

New Egg (<http://www.newegg.com>) is an online retail business which occupies a prominent position in online sales of computer hardware and consumer electronics. Its intended audience ranges from merely web-savvy online shoppers to tech-savvy IT staff and hobbyists. Their catalog contains more than 25,000 items, and their business is famous for a super-smooth search-intensive shopping experience which is often punctuated by near-instant shipping times.

Throughout the New Egg site, highly evolved search and search-related shopping features are integral to the site's design and together constitute a significant part of the user's online experience. To explore these features we will take several passes through the site following a user's search for an item to buy.

	Name	Tech Comfort Level	Stated Goal
User #1:	Uncle Bob	Novice	Buy a "Thumb drive for my nephew"
User #2:	Power User/ Couch Potato	Intermedite	Buy a "Small TV for the kitchen"

## User #1: Uncle Bob

In the first example a non-tech-savvy user is searching for a "thumb drive" to give as a gift. Uncle Bob learns that the menu has drop-down items in it, and visually scans them all looking for "thumb drive". Since he has a limited idea of what he is searching for, he doesn't see as meaningful option, the listing for "Flash Memory & Readers" (which is the top-level category which contains this item within the site's taxonomy). In fact, the search interface is so prominent in part because the browsable hierarchy of the site is inevitably opaque to users who don't have a working knowledge of computer hardware and consumer electronics. Search is the intended avenue for this type of user.

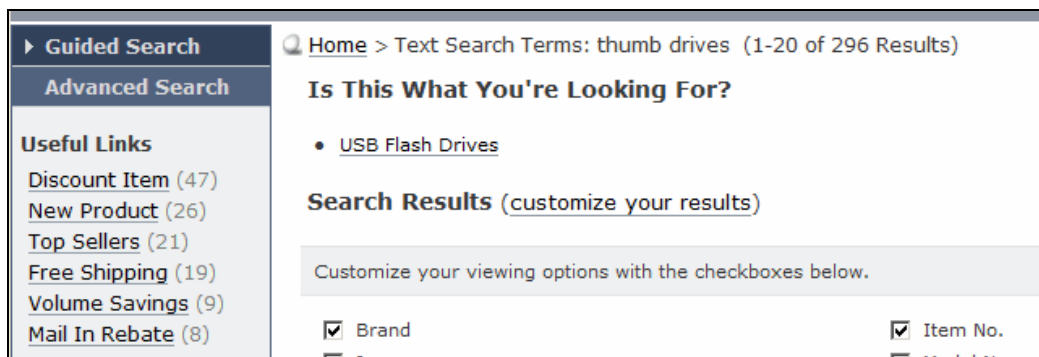


So Uncle Bob sets about to type "Thumb Drive" in the search box. As he types he notices that a series of suggested searches is popping up in the search window as he types. Interestingly these "presults" are not primary categories in the site's primary hierarchy, or even among the set of terms related to one another in a polyhierarchical relationship related to the larger category. These hints/suggestions are a mixture of two kinds of items which have been seeded into a dataset which is being invoked in real-time as the user types.



Some items seem to be indexed words ("thumb", "thumbdrive"), and others are part of a synonym ring for this anticipated search term ("thumb drive", "thumb drives"). This assumption is supported by the counts of matching items, which show that "thumb drive" and "thumb drives" each presumably contain exactly the same items, while the other choices are much less related to the thumb drive concept. In the implied synonym ring, thumb drive and its variants are alternate terms related to the preferred term "USB Flash Drives".

The goal of New Egg's search design is to funnel search users into preexisting categories which expose a number of other search related site features. Even though there is only one suggested result to the search ("USB Flash Drives"), the interface exposes many other interfaces for search behavior at this point, to see if any of them are of interest to the searcher. Across the top of the content section of the webpage (below the header, to the right of the left nav), a clickable breadcrumb chain starts to grow. The left nav shows a series of shrewdly designed "Advanced Search" links.



The "Guided Search" links are clumped into dynamically generated categories which are probably linked to the primary records in the site's hierarchy. While some of these filtering categories change from screen to screen, the top category "Useful Links" is consistently made up of teasing aspects of the data set that is shown in the content, drawing attention to "Top Sellers", "Free shipping", and items with rebates. The top six of these

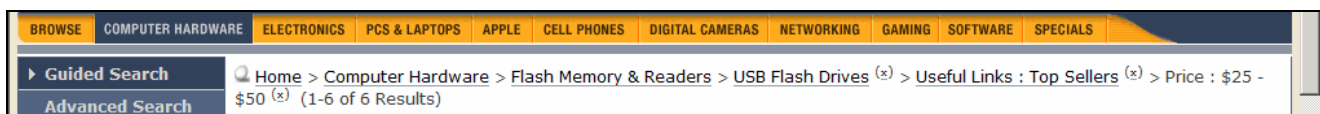
dynamically generated micro-results are displayed onscreen, and if necessary a "More" link appears below them inviting to the user to expand the larger list.

The Guided Search results are always accompanied by a count, which is a data-point that offers a lot of insight into the content dataset. Clicking a result with a count of one opens the item page; clicking a result with a count greater than one filters the content dataset to results which satisfy the new criteria. In the case of additional filtering, the criteria becomes part of the breadcrumb trail.

This part of the interface is a mixed blessing. Breadcrumbs represent a kind of abstraction that users may not fully understand, and the design of the page, while impressively functional overall, doesn't make it clear enough that only by interpreting the breadcrumbs (or one might suppose, the URL) can one understand where in the site we are at this point.

*<http://www.newegg.com/Product/ProductList.aspx?Submit=ENE&N=4801&Description=usb+thumb+drive&name=Mail+In+Rebate>*

Uncle Bob realizes that giving a gift with a rebate is not sending the right message, so he backs up, follows the link to "USB Thumb Drives", which leads back into the site's hierarchical listing of "Flash Memory & Readers: USB Flash Drives". After some hit-or-miss research which drives home the realization that he doesn't know enough to make an informed decision about what features to select, he makes two guided search refinements which limit his choices to a reasonable number: "Useful Links: Top Sellers" (bringing the count down to 20), and "Price: \$25 - \$50" (bringing the count down to 6). He then blindly chooses one.



This concludes the first user's search scenario. Since Uncle Bob is a novice user, he didn't explore many divergent features of the search interface, but he did provide a general overview of its structure, its strengths and its weaknesses.

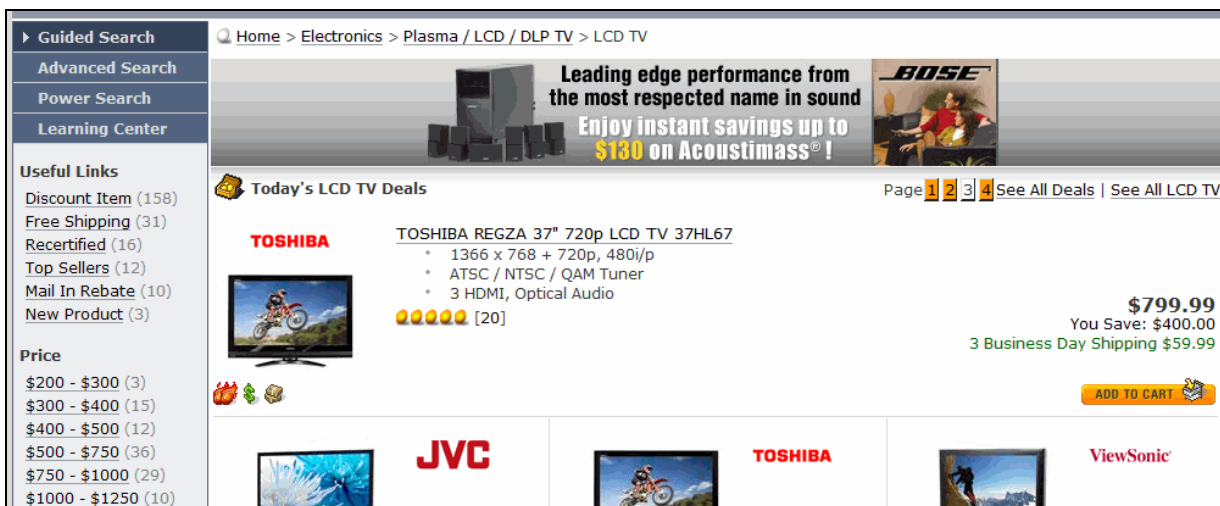
## User #2: Power User/Couch Potato

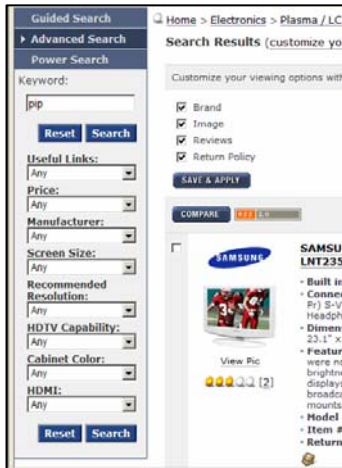
The Power User is intends to make use of web-savvy search features on NewEgg.com to further his goal of never being more than 20-feet from a cathode ray or lcd screen of some kind. The kitchen has been a problem area for him, what with the whole electricity vs. water issue, but some sort of wall-mounted LCD TV seems to be the correct solution.



As a power user, the Couch Potato has some knowledge of the consumer electronics hierarchy and manages to guess his way through the site's hierarchy, choosing: "Electronics: Plasma / LCD / DLP TV". The TV category has several children including related items such as "Stands & Mounts", and "Professional Installation". He notes this and may want to start a second search back from this position later. He then navigates to "LCD TV".

In this LCD TV content area the left nav of the site includes four different ways to conduct searches (to generate results) and/or to apply filters to the LCD TV dataset which appears in the content area to the right. This presentation is more complicated because landing on the site's LCD TV page immediately forks the content into two divergent navigational categories: "See All Deals" (which is selected by default), and "See all LCD TV" (which is actually the dataset the left nav search interfaces is further searching/filtering).

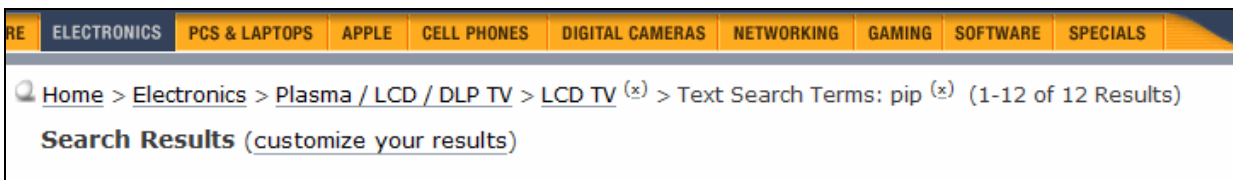




The Power User decides to explore the search options first in the "Advanced Search" section. This reveals a different interface (with select boxes instead of links) which is in many ways the same as "Guided Search". The big difference here is that unlike following a succession of links, the user can choose multiple criteria at once to narrow/generate their search results.

The "Advanced Search" also has a "Keyword" search to apply a filter of the user's choosing. He supplies "PIP" to get a feeling for how common this feature is in this product type. The resulting set is 12 records, and almost all of them are Samsung. Interesting. And he effectively backs

out of this using the click-able bread crumb deletion tool, which brings him back to the original 161 "LCD TV" resultset.



Now, as a power user he really needs to geek out and see the whole picture so to speak. So he goes to "Power Search" and is able to make granular choices by looking across a set of controls which represent all the searchable values (i.e. those with instantiated values) within the whole dataset. However, the strength of this interface is also its weakness, since making multiple selections can easily result in searches that yield no results. For example: there are no white 37" televisions.

So here he takes a strategy of selectively applying criteria to see what generates results that are useful, backing out of any dead-end (overly narrow) searches. Some of the criteria on the Power Search form when applied together are effectively ranges, for example, Potato has mixed emotions about getting a TV that is too large for the room, so he selects all the values between 19" and 26". He must have an 16:9 aspect ratio, and HDMI. Since he doesn't want recertified or open box, he has to abandon the "Any" choice in Product Type, and instead select all other values in the



March 24, 2008

category. Once again, this constructs a more advanced logical statement, effectively: "not recertified and not open box", which becomes part of the query that the system returns results from.

Home > Electronics > Plasma / LCD / DLP TV > LCD TV > Cabinet Color[White ],Aspect Ratio[16:9 ],Screen Size[19" ],Screen Size[20" ],Screen Size[22" ],Screen Size[23" ],Screen Size[26" ], Product Type [OEM] [Retail] returned 2 results.

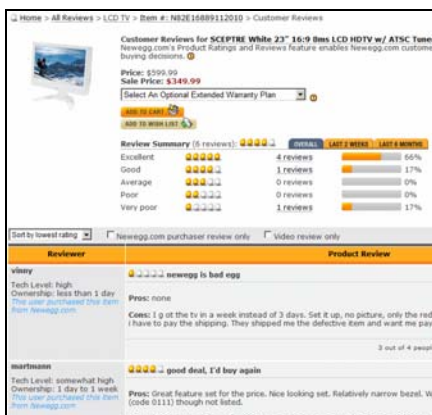
The screenshot shows a 'COMPARE' section on a website. It lists two products side-by-side. The first is a Sceptre TV with a price of \$349.99 and 6 reviews. The second is a Samsung TV with a price of \$499.99 and 2 reviews. Each product listing includes a small image, a 'View Pic' link, and a list of technical specifications such as brightness, connectors, contrast ratio, and dimensions. There are also 'ADD TO CART' and 'ADD TO WISH LIST' buttons for each item.

The search returns two similar results and so now it is time to delve into the minutia of geekdom and go through the products spec by spec. By selecting checkboxes, the "Compare" feature returns tabled data which allows an easy scanning of the product features side by side.

This screenshot shows a detailed comparison table. The columns include Product, Price, Features & Specifications, Options, Reviews, Warranty, Shipping, and Status. The rows correspond to the two TV models from the previous screenshot. The 'Features & Specifications' column is particularly dense with technical details for each product, allowing for a direct comparison of their capabilities.

At this point Power User/Couch Potato is [surprisingly] leaning toward the Sceptre, a suspicious web-only brand. However, the specs do suggest a more technologically advanced design, and the Sceptre has 5 eggs from 6 reviews, while the Samsung has only 3 eggs from 2 reviews. At this point he goes into each set of reviews, and sorts them lowest to highest to get the positives out of the way.

Here at the 11th hour another change of heart. Despite the high marks overall, the Sceptre reviews repeatedly point to problems with quality control, design, and image quality, while the Samsung is actually praised. Here the mechanical points of comparison have largely given way to the web 2.0 social dimension, and the social trumps the mechanical for making a sale, influencing behavior, and ultimately driving satisfaction.



Sceptre Product Detail



Samsung Product Detail

## Conclusions

This concludes the user search scenario analyses. Basically, New Egg has many divergent and productive tools to assist users in finding products they would like to buy among their thousands of listings. The strengths of the site are a harmonious intermingling of what are often divergent site design elements.

On the one hand there is a well thought-out and consistent taxonomy where every product has a single location. This overarching organizational principle guides the navigation interface of the site, and the search features in fact serve it, channeling users who effectively don't know where they want to be back into the prevailing organizational system. That is why the "thumb drive" search ended up in an area labeled "Flash Memory & Readers: USB Flash Drives", rather than just adopting what the user asked for which was "thumb drive" (which would certainly be a viable option if that was a desirable design).

On the other hand, search is a recurring focus of the site's design. The attention to detail in the unfolding complexity and granularity of choices revealed by the "Guided Search", "Advanced Search", and "Power Search" triumvirate is a pretty magnificent in the hands of a capable user. And once choices have been narrowed by a filtering/searching process the "Compare" feature and sorted reviews basically give the shopper a means for rendering a decision that adds the social parts of the psyche to the mix.