K-Rise Systems: White Paper

Faceted Search *aka* Filtered Navigation: Improving E-Commerce Functionality by an Order of Magnitude

What You Need to Know: Do NOT Consider **the Old Hierarchical Inflexible "Tree Structure" e-Catalog Approach - - It's Antiquated.** ONLY Consider **Intelligent Faceted Indexing.**

By Doug Palaske

PREFACE

K-Rise Systems develops and markets [EASYCommerce](#), a real-time ERP integrated B2B/C e-commerce storefront solution. Our latest version of EASYCommerce integrates faceted search functionality utilizing Solr, an open-source search engine. This white paper reviews EASYCommerce Solr functionality & customer benefits.

INTRODUCTION

Your customers can't BUY from your web store unless they can easily find the products they need.

Inaccurate or improperly organized search results & counterintuitive product catalogs leads to upset customers and lost sales… possibly to your major competitors.

What is: **Faceted Search aka Filtered Navigation?**
Webster Dictionary: FACET – ***Definable aspects that make up a subject or object***

Faceted search navigation is the dynamic clustering of items into categories that allow users to drill down (refine results) or drill up (expand results) by selecting / de-selecting product attributes until the desired item(s) are found.

Intelligent search with selective product attribute filtered navigation is now the norm for most of the major e-commerce retailers.

SEARCH FUNDAMENTALS FOR HIGHER CONVERSIONS / REVENUE

Online buyers are on your storefront with differing buying circumstances; out of stock urgency, budget, competitive product dissatisfaction, etc. They want storefront control but they also want to be guided through a process of product decision in a common sense manner. Providing state-of-the-art search/navigation provides your users with many paths to find and buy items. These paths showcase your product solutions contextually, dynamically and in a personalized manner. This is key to securing increased market share over your competitors.

Search / Filtered Navigation Requirements:

- Users need the most intuitive and flexible navigation options to quickly find the right product(s).
- Needs to aid the user with identifying, qualifying and researching products
- Needs to positively influence and enhance customer experience and intelligently cross-sell, up-sell and promote select items
- The storefront needs to maximize Search Engine Optimization (SEO) techniques to attract new customers.

Statistically 80% of online shoppers start with search to find products. Having a superior online web store requires providing a superior ecommerce platform. It's imperative your customers prefer your storefront over your competitors'. From a web sales channel perspective you need to deliver a better user experience creating a competitive differentiator edge. You need to deliver:

- An intuitive & engaging way to find your products – especially with search / navigation
- Your product information / knowledge has to exceed your competitors'
- Finalizing the transaction (checkout process) has to be effortless
- User Access to your ERP data (finance, order, invoices, quotes, etc.) has to be transparent
- Superior user experience needs to apply to desktop, laptop, tablet and Smartphone users
- Site needs strong: Personalization, SEO & Marketing (up/cross selling, etc.) functionality

SEARCH – OLD vs. NEW

Some retailers still use the old non-intelligent hierarchical categories which provide a singular rigid search sequence which makes it difficult for customers to find products.

Here is a comparison of the two approaches:
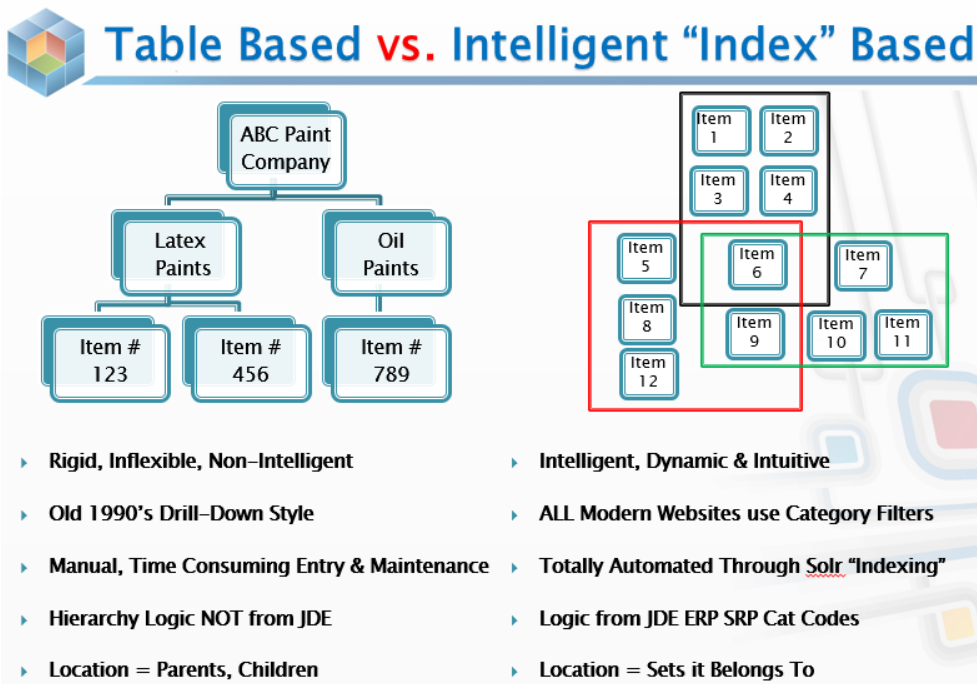
ABOUT SOLR SEARCH / NAVIGATION

In 2004 Solr was created by Yonik Seeley at CNET. In January 2006, CNET openly published the source code by donating it to the Apache Software Foundation. Over the years Solr graduated from incubation status into an open source enterprise search platform. Solr is the most widely deployed faceted search engine / guided navigation on the internet. Its open source software is used for a variety of applications (documents, movies, products) including e-commerce.

- Proven (Best Buy, Sears, Netflix, etc.) and very reliable, scalable and fast (millisecond response time)
- Allows for the creation of sophisticated ecommerce search / filtered navigation applications.
- Solr ranks among top 10 open source projects with over 10,000 installations
- Customizable product relevance logic for accurate results

Solr provides ecommerce users the flexibility to intelligently view relevant content. For too long users were overwhelmed with long pages of irrelevant results or searches returning no results. Solr search/navigation provides multiple navigation options which encourage customers to identify, qualify and more finely research products and leads to increased revenue conversion & improved customer satisfaction/experience.

FACETED SEARCH / NAVIGATION – COMPETITIVE LANDSCAPE

Gartner's latest E-commerce Magic Quadrant notes three vendors in the Leaders quadrant. They are: (1) SAP Hybris, (2) Oracle Commerce and (3) IBM Websphere Commerce.

The Oracle Commerce product foundation is made up of two acquisitions by Oracle: ATG and Endeca. The Endeca solution provides high-end faceted search and navigation functionality for Oracle Commerce.

SAP Hybris search navigation is based on Solr.

IBM Websphere Commerce search navigation is based on Solr.

K-Rise Systems chose Solr as our faceted search engine for EASYCommerce because of: (1) functionality, (2) cost implications and (3) ability to imbed Solr setup/maintenance within our EASYCommerce administration. Additionally, adding value-add ERP integration techniques for enhanced Solr functionality was a major criteria. With Solr, EASYCommerce functionality is expanded and we can provide our customers the same high-end customer features as the major B2B/C players.

K-RISE SYSTEMS: SOLR INTEGRATION WITH JDE ERP

EASYCommerce was developed based on real-time JDE ERP (E1 or World) integration which includes real-time:

- ◆ JDE Order Creation with Stock, Kit or Configured Items
- ◆ Advanced Pricing Integration
- ◆ Item Availability Calculation
- ◆ Item Master / Branch Plant and Customer Master Integration
- ◆ Customer Order / Quote / Invoice Integration
- ◆ Tax Integration (beyond JDE & Vertex we also offer Avalara Tax)
- ◆ Freight Charge Calculation - from your Freight Contract UPS, FedEx, etc., Business Function or other options
- ◆ Payment Processing for Credit Card / ACH & Customer Online Bill Pay

With EASYCommerce, **companies no longer need to create a manual e-commerce catalog** which requires substantial effort to create and maintain.

Using our JDE integrated enhanced version of Solr, EASYCommerce provides real-time integration to *JDE SRP category codes*. Additionally we've also integrated Solr against the *JDE customer master category codes* allowing personalized (by brand, sub-set of full catalog, etc.) company or even user specific product catalogs.

K-Rise Systems' project experts work with you to create a robust e-commerce product catalog. We utilize our JDE item master integration adapter combined with other integration elements. We have an automated Solr import process. The Solr Engine / Server then Indexes the data (adding data intelligence). The process involves:

1. Other Data Sources: Marketing, Engineering, Images, Video, Custom Tables
2. Adding other (non JDE) Category Filters – Example: New Products, Discontinued, Specials, etc.

Enhancing the data is on-going. Example, one of our customers asked us to provide: alternate item number cross-reference functionality. We simply needed to add that cross-referenced number (from JDE or in this case outside of JDE) within the data import process for Solr to index.

SOLR FUNCTIONALITY

Auto-Suggest / Auto-Completion /Auto-Correct – Popular queries are presented as the user types. Quickly suggests to users precise search requests minimizing keystrokes. Utilizes "sounds like" and best bet logic.

Spell-Checking – Offers spelling options to improve results. Can be customized to the vocabulary of the product catalog

Related Items / Recommendations – Providing "more like this" functionality

Full Text Search: More relevant results because it compares every word and not just a set of associated keywords

Advanced Multi-Select: Allows user to select multiple choices: e.g., multiple price points

Breadcrumb Trails: The user clearly views their attribute selections narrowing their downward search results. Clearing all or de-selecting attributes enables upward navigation**.**

Hit Highlighting: Results are highlighted helping users view queries.
Large Plug-In Library: Plug & Play extensions like: Year/Make/Model
Geo-Spatial Search: e.g., Closest Warehouse / Branch Plant to User

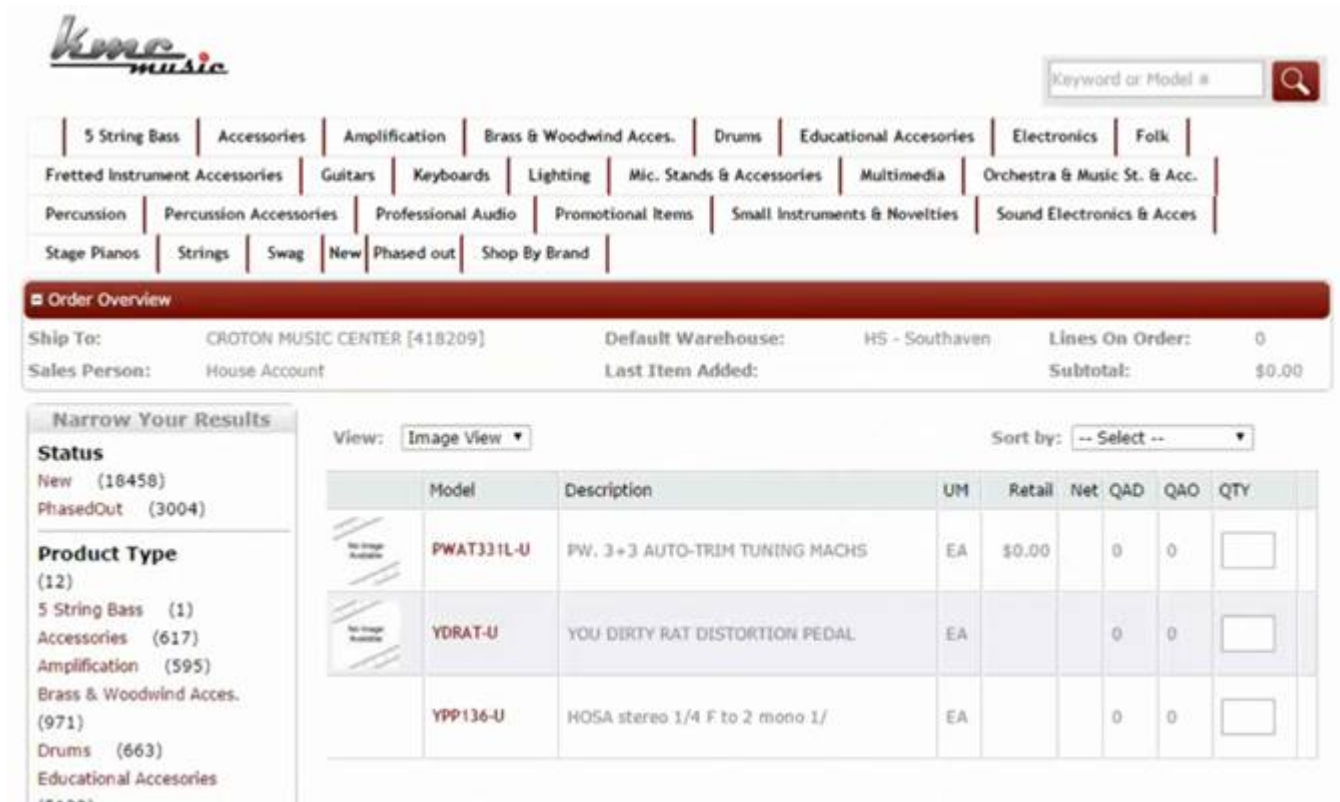| drums	
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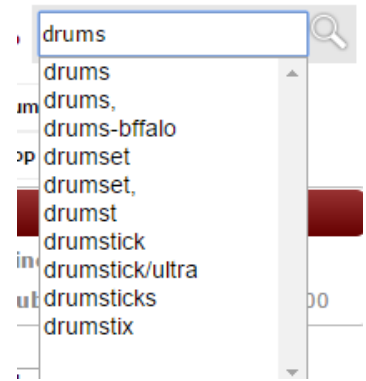
SOLR EASYCommerce Example

This is an example of K-Rise Systems' customer KMC Online, div. of JAM Industries.

Though it's optional, we recommend that faceted navigation include a top level set of instantly understandable product Category labels that are actively linked (like REI, Macy's and Target.) Common design navigation conventions suggest for left to right reading languages navigation should be on the left side of the page or optionally, on top (your choice)

WORKING WITH JDE CATEGORY CODES

K-Rise Systems' EASYCommerce customers like how they visually see the results of their SRP category codes. They appreciate the ease of the automated and iterative import/index process which involves improving their JDE category codes. The screenshot below shows JDE Category Code results **before** KMC Online **improved the integrity of their JDE category codes**.

Screenshot of K-Rise Systems / JDE E1 Customer KMC Music Online:

CONCLUSION / ABOUT THE AUTHOR

This white paper is targeted at people who are interested in the latest version of EASYCommerce or just want to learn more about Solr and faceted search.

Doug Palaske is the Manager of Sales at K-Rise Systems. As a former JD Edwards pre-sales Consultant he's knowledgeable of ERP. With ERP integrated E-Commerce he's consulted and sold strategic ERP integrated e-commerce projects to over a hundred Oracle and SAP companies over the last 12 years.

K-Rise Systems is a software company providing real-time ERP integrated solutions for E-Commerce, Buyer & Vendor Portals, HR Employee/Manager Self Service and Custom Applications.

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