



Ecommerce Search Product Comparison

How Five Leading Vendors Address Ecommerce Search and Search Marketing

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NETTING IT OUT

There are many technologies deployed to connect customers with products on ecommerce Web sites. In this report, we review five leading ecommerce search offerings. These products are broader than search indexing and retrieval: they provide merchandising, end-to-end search marketing, data cleansing, taxonomy development and data classification.

Four of the five vendors offer managed services, a very attractive offering in these tough economic times. The managed services approach also provides ongoing collaboration for ecommerce success, which is to both parties' benefit. Successful clients result in successful vendors.

This report has two parts. A companion to this report is a spreadsheet with a detailed, side-by-side comparison of all the criteria described in our Ecommerce Search Planning and Evaluation Framework, covering seeker interfaces, seeker experience management, marketing management, information collection management, architecture, and product and company viability. This report summarizes the data in spreadsheet and analyzes the key strengths of each of the five products.

If you are in the process of selecting new technology for ecommerce search, you will be successful with any of these products. There's a reason they are leaders. But there are key differences, and this report will help you see which company is more suited to your situation. Interestingly, price isn't likely to be your

motivation for selecting one of these vendors. We think the key factors will be how well the product delivers the search results you want to see, how well it supports the marketing you need, and whether the vendor offers the right types of support for your business and technical teams. Of course, you are always welcome to call us for a chat or a consult. We are always interested in hearing about your initiatives.

We define ecommerce search as the technologies companies deploy to connect customers with products and answers. This includes search, navigation, and discovery; plus merchandising, searchandising, and tools to manage the customer experience.

Great search and navigation have the potential to deliver huge benefits. We have spoken with companies that have increased cart size by 270 percent and eliminated 60 percent of customer support calls by implementing effective ecommerce search. Whether or not your results reach these heights (or exceed them) depends on how poor your seeker experience is today, the quality of your content, the sophistication of your technology, and how effective your organization is at managing the seeker experience once you've got the right technologies in place.

To simplify the selection of products that can contribute to ecommerce implementation, we've compared five leading ecommerce search offerings, using our framework for evaluating ecommerce search products and architectures. The framework describes evaluation criteria in the areas of seeker interfaces, seeker experience management, marketing management, information collection management, architecture, and product and company viability.

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Products in This Comparison

This comparison analyzes the following products:

- Celebros Salesperson 2009, released June 2009
- Endeca IAP 6.1; Endeca Commerce Suite, released March 2009
- Fredhopper Online Marketing Suite V.6.2, released April 2009
- Omniture Merchandising 5.3, released July 2009
- SLI Systems Learning Search, as of August 2009

This report summarizes the key capabilities, and key differences, of these products. The companion report is an Excel spreadsheet entitled Ecommerce Search Product Comparison Matrix.¹ The spreadsheet presents a detailed, side-by-side comparison of all of our criteria.

Method

Our approach is to apply our detailed, requirements-driven framework to each product. We gather information from interviews and from studying product documentation. There are certain advantages to this approach—it is similar to the approach IT teams take in evaluating products. The key weakness of our approach is that we lack the resources to implement and test the products. We therefore don't have an independent means to validate scalability claims or to evaluate the most fundamental function of a search engine – its ability to choose the best results. Therefore, when you make your own search engine technology decision, there are two things you'll have to do for yourself. First, talk to at least three customers for each product and ask them how much time they spend tuning search results. You don't want to buy technology that requires more attention than you have to give. Second, you want to include a proof-of-concept test in your evaluation to

¹ See [“Enterprise Search Product Comparison Matrix.”](#) by Susan Aldrich, September 10, 2009.

measure how often the search brings back the right top five items in a series of tests you've defined—and how frequently any of the top five are the totally wrong item.

History

This isn't the first search technology comparison we've published. The most recent ecommerce search comparison, published June 24, 2008, suffered from addressing versions of varying age. This report rectifies this issue, since all the products we're comparing were released from March through August in 2009.

Since 2003, we have been using our earlier evaluation frameworks to assess vendors' offerings for search and navigation for ecommerce, enterprise, and customer service applications. To date, we've assessed offerings from ATG, Autonomy, Celebros, Endeca, FAST, Fredhopper, Google, InQuira, IBM, Mercado, Microsoft, Northern Light, Oracle, SLI Systems, and Thunderstone, as well as solutions from EasyAsk (acquired by Progress Software), iPhrase (acquired by IBM), Knova (acquired by Consona), Verity (acquired by Autonomy), and WebSideStory (acquired by Omniture).

OUR BOTTOM LINE

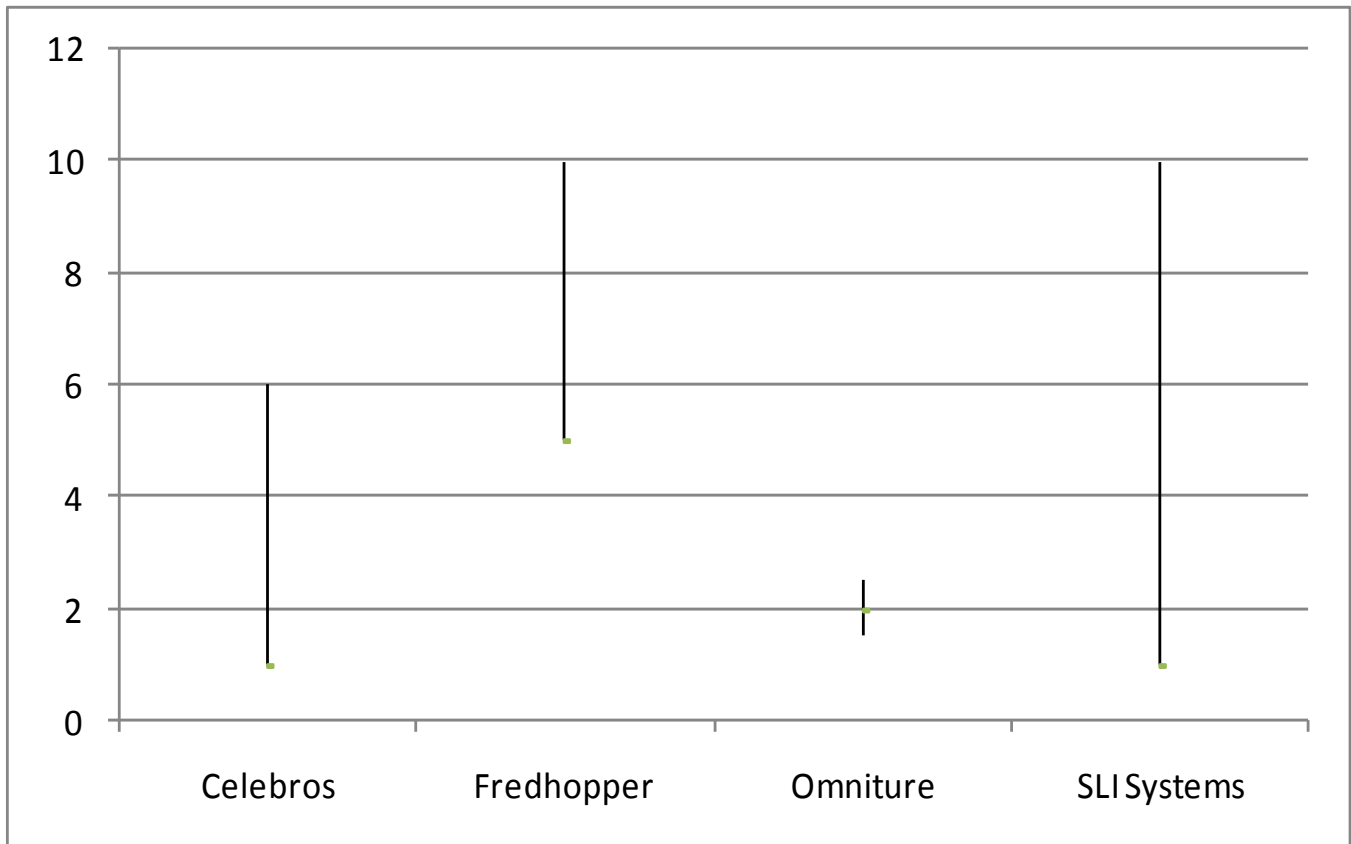
Price

The five products are quite similar in price. The four that offer managed services range from \$1k to \$10k per month; three of them can be had for \$2k per month. Two products are offered on-premise, averaging \$250k and \$300k. These differences are not insignificant, but they are not reason to abandon one vendor or snap up another. (See Figure 1.)

Scalability

Similarly, scalability, the last refuge of FUD mongers, is not a credible differentiator. All of the products have demonstrated more than a thousand queries per second, which is more than any ecommerce site is likely to require. That's 86 million searches per 24 hours. No retailer needs that. A more interesting question may be, how many servers will you own to achieve the scale you need. The minimum hardware required to support a product catalog

Pricing



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Figure 1. The pricing for the four managed services products is very similar. Prices are in thousands of U.S. dollars per month.

of 500,000 SKUs, 10,000 searches a day, and a team of four merchandisers is one server at Endeca, one live and one staging server with Fredhopper, one management server and one search server with Omniture Merchandising. At Celebros and SLI Systems, “it doesn’t matter,” since they provide the servers and manage them. Celebros offers the information that a commodity server can handle a catalog of 50,000 items, depending on the query activity and volume of catalog updates to be processed.

Marketing

Marketing support is one of the most important differentiators among these products. Only Fredhop-

per and SLI Systems provide automated search engine marketing (search engine marketing) capabilities, and only Celebros and Fredhopper incorporate a recommendation engine. Fredhopper’s marketing analysis engine also drive targeted advertising via SEM, SEO, affiliates, and email; and Fredhopper has a dozen ad partners, making Fredhopper the standout in marketing capabilities. Traditional rules-driven promotional searchandising capabilities are broadest at Endeca, Fredhopper, and Omniture. See Table A.

Ecommerce Search Features Comparison					
Marketing Capability	Celebros	Endeca	Fredhopper	Omniure	SLI Systems
SEO automation	<ul style="list-style-type: none"> • Site maps • Landing page generation • URLs • Page metadata 	<ul style="list-style-type: none"> • Site maps • Landing page generation • URLs 	<ul style="list-style-type: none"> • Site maps • Landing page generation • URLs • Page metadata 	<ul style="list-style-type: none"> • Site maps • Landing page generation • URLs • Page metadata 	<ul style="list-style-type: none"> • Site maps • Landing page generation • URLs • Page metadata
SEM automation	<ul style="list-style-type: none"> • Landing page generation 	<ul style="list-style-type: none"> • Landing page generation 	<ul style="list-style-type: none"> • Bid management • Landing page generation 	<ul style="list-style-type: none"> • Landing page generation 	<ul style="list-style-type: none"> • Bid management • Landing page generation
Recommendation Engine	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • No
Site Marketing	<p>There are no tools to manage site promotions or campaigns.</p> <p>Merchandisers can control the specific positioning of items in the results list; they can stipulate the order in which attribute values are used to sequence results; weight the importance of each of these stipulations; specify concepts</p>	<p>Each business rule type (cross-sell, up/down-sell, featured item, bundle) is represented as a rule cartridge in the Endeca Workbench tool. Business users select the appropriate set of cartridges to build a page. They can also create page templates, and set rules for which templates are used for specific</p>	<p>Merchandisers can control all promotions and influence what is promoted when, including cross-sells, up-sells, down-sells, featured items and bundles. Promotions can be absolute or dynamic and can be triggered to run by date, time of day, search terms, contents of search results, current page, or by navigation path. The Business Manager is designed for teams to work independently together. It</p>	<p>Cross-sells and other offers can be triggered by customer context, behavior, profile, time, date, and query. The offers can be directed to specific zones on the page.</p>	<p>Customers can use the SLI Merchandising Console to create banners that are triggered by rules. Banners can be any piece of HTML, such as images, javascript and forms, enabling many different types of promotions including; holiday promotions, free shipping, end-of-season, gift finders, brand promotions, etc.</p> <p>SLI provides clients with access to an online reporting and merchandising console. The more advanced features</p>

	(nodes) that should be included in the results; specifically include or exclude products; and specify synonyms and the relative relevance of the synonyms.	customer segments, promotions, categories, etc. Workflow controls changes, and check-in controls work by teams.	includes workflow to set up, preview and publish campaigns.		are performed via SLI Systems search experts (as part of the basic SaaS agreement) on behalf of clients. SLI is developing options for customers to perform more advanced actions directly.
Embedded A/B testing	• No	• Yes	• Multivariate	• Yes	• Partnerships
Other marketing capabilities			<ul style="list-style-type: none"> • Targeted advertising and affiliate partnership • Targeted email campaigns 		

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Table A. The capabilities of the five ecommerce search offerings covered in this report are presented in this table

Tools for Findability

“Tools for findability” is a bit ambiguous, just like most search phrases. Each vendor has a unique approach to delivering good search results, and all share a few techniques. All offer guided navigation, sorting of results by popularity, ranking strategies that vary by time or category, and search-as-you-type.

User behavior is used to optimize search at Celebros Salesperson, Fredhopper, Omniture Merchandising, and is the basis for SLI Systems Learning Search. Suggested searches are a discovery technique for Fredhopper and SLI Systems. Recommended concepts are identified by merchandisers at

Celebros, and automatically with Endeca and Fredhopper.

Celebros, alone of this group, uses question-and-answer dialogs to guide the discovery process. The order of the questions is automatically optimized for each interaction.

FREDHOPPER

Our Take

Fredhopper’s strengths put it at the top of just about any ecommerce short list. Most notable in this evaluation are its marketing, structured data handling, and international support.

Fredhopper is the only vendor in this comparison to provide automated SEM, SEO, a recommendation engine, targeted advertising with affiliate feeds and a dozen ad partners, multivariate testing, and targeted email offers. All of this is driven by Fredhopper's Mathematical Marketing Analysis engine. Fredhopper's site marketing capabilities support multi-step campaigns where the action of one rule becomes the trigger of the next rule, enabling the dialog to be configured across a seeker scenario.

Fredhopper had early experience with vacation package retailers. This is a complex product area, with every airplane seat and every hotel room on every day having a different price. Rather than create enormous databases and give all its revenue to Oracle, Fredhopper created Fredhopper Relational Universes. These link many-to-many-to-one-to-many relationships, efficient in situations where multiple entities need to be combined to offer a successful search experience.

Fredhopper is the only vendor in this comparison to develop its own language support (tokenization and stemming), having concluded that the standard OEM offering could not deliver the results Fredhopper needed. As we've mentioned, we lack a scientific method to test such claims. But the fact that almost all of Fredhopper's clients manage stores in multiple languages in Europe is strong supporting evidence for this assertion.

Fredhopper is the only vendor in this review that enables browsing of third-party reviews by reviewer attribute, such as age.

Fredhopper is the only vendor in this review that offers advice within the reporting interface, guiding business users on what action might be taken to improve results.

Company

Fredhopper was founded 1999. It is based in Amsterdam with 60 employees with offices in London, Paris, Munich, and Sofia. Fredhopper plans to open a U.S. support center in 2010. Fredhopper has an installed base of more than 300 Web sites, includ-

ing Ahold, B&Q, Clarks, Otto Group, Maxeda, Philips, Quelle, Thomas Cook, Toys R Us UK, and Waitrose. Fredhopper customers generate aggregate online revenues of approximately \$10 billion.

Fredhopper claims to be profitable, growing 50 percent annually with no debt.

The Fredhopper Onsite Search and Targeting base platform pricing starts at €50,000 per year, with average deal size per customer at €100,000 per year. Additional modules – Predictive Targeting and Targeted Advertising — are sold as add-on subscriptions. Client contracts are typically three to five years. Fredhopper has been demonstrated to support 100 million items and 1000 queries per second, and client teams of business managers of 30 people.

Fredhopper has about two dozen certified partners, including ecommerce platforms, ad networks, product information management vendors, Web analytics, Web content management, customer reviews, and others.

Fredhopper provides major releases every six months and monthly patch releases. Fredhopper 7, planned for 1Q 2010, will enhance the Business Manager Console with more granular targeting controls and make it

easier to manage large volumes of rules for bigger teams. It will also automate and template more tasks for merchandisers, easing and speeding routine tasks.

Seeker Interface

Some outstanding features of the Fredhopper seeker interface include the ability to multi-select refinements, browse by reviewer attribute, compound and de-composition word searches, store and email searches, store shopping and wish lists, and automatic selection of the most relevant facets.

Fredhopper includes a module for customers to provide feedback on the experience and a related reporting module for marketers to review and take action.

Fredhopper Navigation automatically generates facets and associated relevancy rules on structured data.

Fredhopper's strengths put it at the top of just about any ecommerce short list. Most notable in this evaluation are its marketing, structured data handling, and international support.

Fredhopper's meta-relational architecture stores relationships between tables so that attributes of items can have attributes themselves, such as price, availability, or customer/reviewer profile. Fredhopper schema tools automatically discover relations in data (database columns or tables). This capability can be used, for example, to offer travel seekers a combined overview of relevant rooms with right air tickets and the right concert tickets. Or, the capability could be used to create a smart store locator that would tell shoppers which stores have in stock the desired product in the desired size.

Fredhopper Guided Summarization provides dynamic summaries of any underlying data set, enabling shoppers to slice and dice through the content on any product attribute, facilitating discovery. This is a key feature supporting the exploratory process shoppers go through.

Alone of the vendors in this report, Fredhopper provides connectors to portal platforms: IBM WebSphere and SAP Netweaver.

Seeker Experience Management

Fredhopper retains and uses user context to offer search phrase suggestions, valid navigational steps, and personalized merchandising based on previous behavior. Each rule can be targeted against a specific behavioral seeker profile or segment.

Fredhopper dialog management capabilities include (a) dynamic summaries of underlying data helping seekers to understand what their choices are, (b) predictive recommendations based on comparing current seeker's behavior to the collective behavior of previous seekers, (c) search suggestions offering seekers optimally productive search phrases related to their own search, and (d) multi-step campaigns where the action of one rule becomes the trigger of the next rule, enabling the dialog to be configured across a seeker scenario. Predictive recommendations is a recommendation engine using previous behavior of similar people to predict what a shopper

will like to see, the classic "other people like you bought..."

Relational Universes enables custom catalogs of user-specific assortment and pricing.

Fredhopper has a multi-level ranking system with editable ranking models. The models are configurable, using commercial, popularity, visit, and predictive elements. Ranking models can vary by product category, search terms, navigation path, segment, or other indicator.

Predictive behavioral analytics is an element of ranking strategy.

Rules engine supporting fine granularity, targeting individual segments, profiles, phrases, or positions.

Its own language processing, as the OEM component used by most search vendors was inadequate to the search quality Fredhopper wanted

An in-house usability team supports packaged optimization services.

Marketing Management

Fredhopper earns its name as an Online Marketing Suite. While merchandising and SEO capabilities aren't new to search, Fredhopper has compiled the broadest offering, with the following features:

following features:

SEO. The module generates site maps formatted for search engine crawlers, containing product information, landing pages, category pages, refinement options, and promotions. The maps can be automatically published as frequently as desired. The module also automatically creates and applies rules based on top search words, misspellings, and synonyms to optimize page content, in particular URLs, titles, and tags. Fredhopper SEO dynamically fills all metatags associated with every Web page with content based on rules and Fredhopper linguistics. For example, it can dynamically insert product or model numbers into page titles with all common spelling and typing variations.

SEM. Fredhopper covers both sides of SEM: It offers an SEM module to generate better ads, and it

Fredhopper dialog management capabilities include multi-step campaigns where the action of one rule becomes the trigger of the next rule, enabling the dialog to be configured across a seeker scenario.

enables marketers to set-up specific landing pages and promotions for visitors arriving on the site through ads. The ads are generated automatically following rules combining all the product, pricing, sales, availability, and behavioral information residing in Fredhopper. As a result, the module can generate a unique ad for every product or category, every day (only displaying if availability allows, with the right price and using the top onsite search keywords with common misspellings etc.). The ads appear as a campaign in the management console of the ad network, e.g., Adwords.

Targeted Advertising. Fredhopper's targeted ad capability extends beyond SEM to include affiliate and email advertising as well. Fredhopper Targeted Advertising is a collection of solutions for attracting higher converting traffic. The SEO service continuously optimizes all product, category, and popular search pages to rank higher in Web search engines. The SEM service delivers dynamic, micro-targeted long tail ads using actual price, availability, and onsite search information. The Affiliate Feed service delivers optimized feeds for marketing partners such as shopping comparison sites and others. Email offers provide unique offers for each email recipient. Fredhopper has partnerships with ad and affiliate networks (such as Vitrado, Affilinet, and Commission Junction), and comparison engines (such as Idealo, Kelkoo, and Compare) which serves to streamline the preparation, management, and execution of campaigns.

Targeted Email. Fredhopper provides an email marketing capability for preparing and executing email campaigns with personalized offers.

Recommendation Engine. Predictive Targeting, Fredhopper's recommendation engine, makes recommendations based on comparing current seeker's behavior to the collective behavior of previous seekers.

Fredhopper provides search effectiveness reports to judge quality of search results. From the reports, business managers can take direct action to fix the problem, for example, add a synonym for a zero results search phrase. The reports offer advice on what action should be taken to improve results.

Site Search Marketing. The Fredhopper Business Manager empowers marketers, merchandisers, and business analysts to control all promotions and influence what is promoted when, including cross-sells, up-sells, down-sells, featured items, and bundles. Promotions can be absolute or dynamic and can be triggered to run by date, time of day, search terms, contents of search results, current page, or by navigation path. This enables marketers to promote, for example, top sellers in the category, or highest margin product in the first navigation option (facet), or recommend items based on similarity to the current product. Merchandisers specify a degree of similarity, as well as the attributes that would define similarity. It also enables marketers to run and review A/B tests for promotions and navigators. Any data, including third-party data such as ratings, can be used as a navigation facet.

The Business Manager is organized around the merchandiser's tasks, for example, design a promotion, review navigation efficiency, etc. It is designed for teams to work independently together. It includes workflow to set-up, preview and publish campaigns. Each merchandiser is assigned a role with certain rights in the Business Manager. When a merchandiser makes changes, these changes are checked-in and reviewed by the super user before publication to the live site.

Multi-Site Management. Fredhopper enables you to organize data in what it calls universes. Depending on the requirements, each store could be a universe, or stores in a country could be grouped in a universe. Within universes, configurations can be grouped and managed by category. Universes can be related to each other and share data sources (avoiding duplication) while having store-specific display names for attributes if required. From a single Fredhopper Business Manager console, marketers can manage all universes. Most of Fredhopper's clients manage multiple sites.

Web Analytics. Fredhopper comes with a built-in Web analytics tool that supports Fredhopper's ROI

Merchandising at ToysRus

Merchandising: ToysRus makes it easy for customers to zero in on what they really want

Merchandising: ToysRus makes it easier for customers to pull the trigger

Merchandising: ToysRus helps customers succeed by making sure they find age-appropriate toys

Merchandising: ToysRus promotes its own success by promoting these popular items

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Illustration 2. ToysRus, a Fredhopper client, uses features of the merchandising console to control the seeker experience. The features, which include filtering, banners, and sorting, are common to more products reviewed in this report. A key difference is that Fredhopper's marketing engine has selected the three items promoted on this page, based on the information that Fredhopper has about the shopper.

reporting. It also has standard integrations with all leading Web analytics services, including Google Analytics and Google Adwords for ad spend reporting.

Test and Learn. Fredhopper incorporates multivariate testing and reporting.

Information Collection Management

Fredhopper uses a cascading multi-pass relevancy control system that enables very precise relevancy tuning. For example, it is possible to specify that,

if a query returns five exact matches, then don't show partial matches or matches with auto-spell correction. The multi-level ranking system allows business managers to add any criteria to the relevancy model, such as sales rank, margin, or customer rating. Fredhopper even includes an option for business managers to change the ranking of individual items in the search results for individual queries and apply complex sorting criteria including calculated metrics. Fredhopper relevancy is fully transparent and fully manageable by business managers.

Fredhopper can identify concepts automatically and supports both linguistic groupings (related words or phrases) as well as attribute groupings (related attributes). Within linguistic groupings it supports weighted relationships, e.g., trousers → pants → jeans but not the other way around. Also complex attribute relationships are supported, e.g., multiple prices and availability options per hotel room → dynamic holiday packages. This is typically also required for B2B sites with customer-specific pricing.

Findability tuning, including editing synonyms, defining navigation facets, setting rules that respond to seeker context, previewing changes, approving changes, and viewing reports on search and promotion effectiveness, can be done through the Business Manager.

The Business Manager is designed for teams to work independently together. It includes workflow to set up, preview, and publish campaigns. Multiple users can tune ranking rules simultaneously. Check in/out is provided.

Fredhopper provides search effectiveness reports to judge quality of search results. From the reports, business managers can take direct action to fix the problem, for example, add a synonym for a zero results search phrase. The reports offer advice on what action should be taken to improve results.

Fredhopper 7 will include a rating and feedback module for shoppers to provide feedback on the experience and a related reporting module for marketers where they can review the feedback and take action.

Fredhopper meets all our requirements for ETL, metadata extraction, classification, taxonomy import, and management. Fredhopper comes with a comprehensive ETL tool, the Fredhopper Data Manager, to manage data transformations, extractions, and mergers. It comes with standard transformation components for ecommerce, for example, for extracting colors and features, de-duplicating attributes, merging, and normalizing data from different sources. Metadata can be fed back to the source. All components are adaptable and re-usable. Fredhopper can create hierarchical taxonomies based on rules. Rules are exposed and editable in the Data Manager. Tax-

onomies may be adapted through the ETL features of the Data Manager. Business managers can also adapt the localization of taxonomies, i.e., changing the display name of a category.

Architecture

Fredhopper provides REST and WebService APIs for query and results management functions. The interfaces can be used with Java, .NET, and PHP. The package comes with standard UI controls that can be dropped into Web pages and other applications, including controls for the search box, advanced search form, and search results. The UI controls are provided in HTML, JSP, .NET, and AJAX. Fredhopper delivers query results in XML and supports handling with XPATH, XQUERY, or XSLT. The reference UI controls use XSLT.

Fredhopper includes a complete reference implementation using standard UI controls. The reference implementation spans across all common ecommerce use cases including search, navigation, and merchandising.

Fredhopper ships with standard connectors to content repositories in Vignette and SDLTridion. The Fredhopper Data Manager provides an easy to use SDK framework to develop additional content connectors. Fredhopper includes standard content connectors to all major ecommerce platforms (ATG, IBM, Microsoft, Hybris, Intershop, Demandware), Product Information Management solutions (SAP, IBM, Hybris, Heiler, Stibo) and portals (IBM, SAP).

Fredhopper may be integrated with mobile search applications. The required UI adaptations (shorter lists, fewer facets) can be dynamically controlled. Fredhopper also includes native support for GEO location queries.

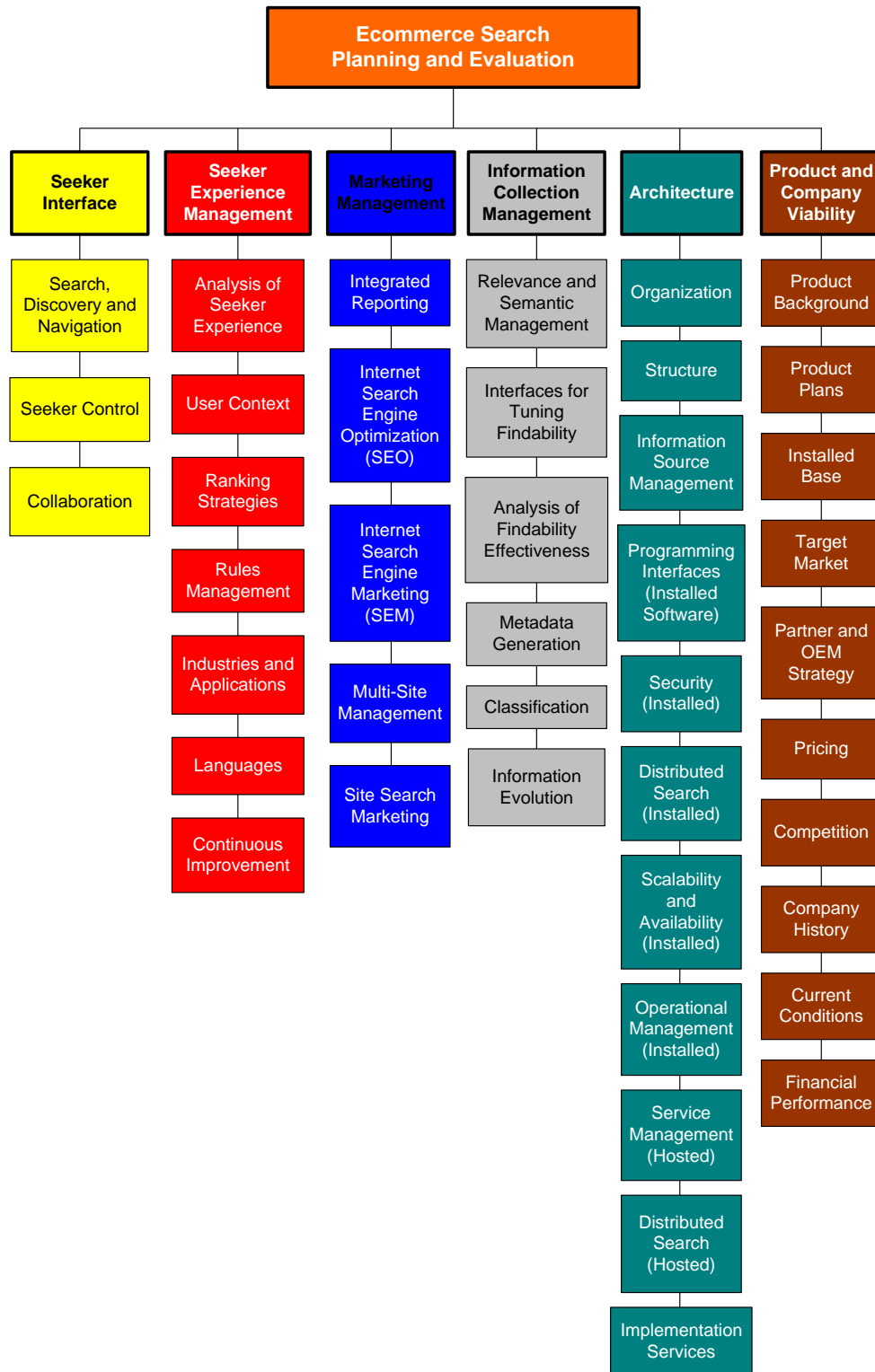
Fredhopper supports notifications to JMX-compliant management consoles.

Fredhopper has been demonstrated to scale to 100 million items and 1000 queries per second, supporting marketing teams of 30 people.

Fredhopper's SLA provides a 99.9 percent uptime guarantee.

Fredhopper automatically identifies concepts, and supports both linguistic and attribute groupings.

Ecommerce Search Planning and Evaluation Matrix



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Illustration 1. This diagram presents our evaluation matrix for ecommerce search solutions.

ECOMMERCE SEARCH FRAMEWORK

Our framework for ecommerce search solutions has six categories of planning and evaluation criteria. (See Illustration 1.) The first four of these categories address capabilities that interact to deliver the seeker's search and navigation experience. The six evaluation categories are:

- **Seeker Interface.** Seeker experience addresses what types of searches or queries can be performed and how the query is translated and executed. It also addresses how the results are organized and presented, including capabilities that ensure that the user is neither overwhelmed with choices nor presented with no results or guidance.
- **Seeker Experience Management.** The key search management activities center on tuning search results to improve the Quality of Customer ExperienceSM (QCE) and to enhance profitability by boosting revenues and trimming costs.
- **Marketing Management.** Marketing management capabilities are used by marketing and merchandising staff to improve the effectiveness of campaigns, Internet ad spending, and site search-driven promotions. They measure their success in terms of conversion rates at each step from Internet search engines or emails on through to acceptance of offers.
- **Information Collection Management.** The most important information for your customers is probably your product information, but there is other information such as shipping and returns policies, or store locations and directions, that must be managed. Information collection ste-

Seekers measure the experience in terms of the time required to find what they need and the degree of confidence they feel in the process of finding as well as in the quality of the content.

wards and owners have their own goals of efficiently delivering consistent, complete, and accurate information. They want to ensure that the collection has all the information its users will need with no extraneous or obsolete information. Their top findability objective is ensuring that the customers and partners quickly connect to the products or knowledge they need. This goal

drives development and evolution of metadata and taxonomies, as well as synonyms, concepts, intents, and adjustments to search ranking and maintain facets for navigation. Two thirds of retailers surveyed said that inconsistent product information prevented them from offering the navigation facets that would improve the

er experience. Stewards are responsible to assist in tagging and classifying their information and also assisting in the evolution of metadata standards and taxonomies.

- **Architecture.** The search engine architecture determines how the search solution will fit into the existing environment, how it will be managed, how it scales, and how it will incorporate all the relevant data sources a company currently has. Architecture also addresses the extensibility, scalability, and manageability of the technology.
- **Product and Company Viability.** Product viability criteria consider the business aspects of ecommerce search solutions and their suppliers. These criteria are much easier to evaluate than functionality criteria, but they can be deal breakers. A company's history and current financial statistics are key markers for its future viability.