

An Oracle White Paper  
October 2011

# Improving the Customer Experience by Replacing Enterprise Search with Enterprise Knowledge Management

## Executive Overview

To help users of their Websites find answers amid a growing mountain of online information, companies are turning to enterprise search (ES) or enterprise knowledge management (EKM). While both solutions help users sift through large bodies of information, they also have fundamental differences. This white paper examines the search methodologies of each technology, investigates how these affect the user's search experience, and explains why EKM is a better solution for helping customers, agents, and partners quickly find answers.

## Introduction

One of the most important tools for any user of the Web is the search tool. Whether one is a prospect looking for information about product features, a contact center agent trying to find the right troubleshooting procedure, or an insurance plan member seeking benefits clarification, search is often one's tool of choice. As the Web has shown remarkable growth in the past decade, especially for such activities as researching a product or service before deciding what to buy, the ability to search effectively has become even more important.

Unfortunately, while hardly a Website exists without a search capability, too often users are not finding the answers they need. Many customers experience failed self-service, which drives them back to the phone or to a competitor. Data owned by Forrester Research predicts that incremental offline contacts due to failures in online service will continue to grow. In contact centers, a rising volume of inquiries, coupled with a rising difficulty in finding relevant answers, has driven up volume and response time—while at the same time reducing agent productivity.

In their quest to provide a great customer experience with an effective search capability, companies are turning to ES or EKM for the answer. Both of these solutions are designed to help the user search through large bodies of information, but the way in which they do so is fundamentally different—differences that have a profound effect on the user's search experience and success.

## Finding Enterprise Content—It Takes More than Search

Both ES and EKM help users find useful knowledge contained in corporate information stores. By enabling searches across a wide variety of sources, ES and EKM offer simple and convenient ways for users to access knowledge that was once hidden in the myriad systems, applications, and databases used to store enterprise content.

But ES and EKM use different methodologies to enable searching, which results in very different experiences for the user. There are two key aspects of search technology that affect the user's success when seeking an answer:

- The search process
- The relationship of the inquiry to the content

Let's look at how each of these aspects affects the search experience.

### The Search Process

ES is designed to index large amounts of information with the goal of making that content searchable. Once the information is indexed, users find it by using keyword searches. For example, a user enters *Product X software download*. This search content constitutes three different keywords in an ES system, which searches for documents that contain any of the words. Often, the set of results returned includes a large number of documents, many unrelated to what the user is looking for. Think of your experiences using a Google-style search engine—the results produced are usually in the thousands and can bear little relationship to the search terms entered.

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ES systems generally have some capability to prioritize the results, such as the ability to give priority to documents that contain all three words or that contain the words close together. This helps to improve the results set but can still produce a significant number of off-target results.

### The Search for Intent

With EKM, indexing for search is also instrumental, but the search methodology is governed by a different philosophy. Rather than trying to produce a very large results set, the goal of the search is to find a relevant answer that matches the intent of the question as quickly as possible.

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For example, EKM treats the *Product X software download* inquiry as a single entity. Using natural language processing (NLP), analytics, and business rules, EKM discovers the *true intent* of the entity. In our sample case, the intent is defined as the *software download intent*. Determining the intent enables the results to be refined so that only the best answers related to the intent are presented. The EKM search

methodology eliminates unrelated documents that just happen to contain the three words *product*, *software*, and *download*, which would be served up by an ES system.

EKM further simplifies the search process by grouping similar terms under a single intent. For example, a self-service customer may ask, “What is the latest software version for Product X?” or simply search for *Product X downloads*, *Product X upgrade*, *Product X newest version*, or *Product X software*.

While an ES search regards each of these as a different query, which means the results will be different each time, EKM categorizes all of these terms as part of the same intent. Regardless of the search term used—such as *download*, *upgrade*, or *software*—analytics and rules determine the intent specifically as the software download intent.

ES is sometimes considered superior because its keyword search methodology is deterministic. This means that every time a user types in *Product X download*, the results will come up in the same order. It is true that some EKM solutions use *fuzzy logic*, which means that the results for the *Product X download* inquiry are adjusted based on previous queries. However, knowledge solutions from Oracle do not use fuzzy logic, instead employing deterministic rules to ensure that results are consistent and are not relative to other queries.

## Improving the Search Experience with Directed Knowledge

Advanced EKM solutions combine intent discovery with *directed knowledge*, which is entirely missing from ES technology. Rather than search all the repositories, EKM directs the search to the most relevant knowledge source in order to bypass the typical lengthy results list. In our example, directed knowledge would take the customer directly to the download page or to a Product X microsite.

EKM can further expand the use of directed knowledge by dynamically linking and presenting different pieces of information based on the context of the inquiry. When a search request is equated with a specific intent, EKM will present the user with a variety of predefined responses to that intent, such as special offers, related topics, or even troubleshooting wizards.

For example, consider the self-service customer’s experience when searching to find out why copies are streaky. By identifying the true intent of the inquiry, EKM can direct the customer to a wizard that can guide the user through the process of identifying the right product and model and precisely defining the nature of the problem. EKM then serves up the most relevant troubleshooting procedure and accompanies the answer with related knowledge delivered through dynamic portlets. Such portlets might include links to other potentially useful troubleshooting procedures, the user manual for that particular copier, a discussion forum sharing customer tips for getting the best-quality copies, in-context FAQs (including the statement “Other people who asked your question have also asked these questions” and related results), and even a special offer for toner that helps to reduce streaking.

Directed knowledge is particularly important for organizations that need to be able to anticipate how well a piece of knowledge will answer a particular question when submitted over e-mail versus when researched on the Web. By providing a rich, supportive environment online, service organizations can substantially reduce the number of back-and-forth e-mail interactions as well as reduce the incidence of

Website abandonment and costly phone calls. This will also have a positive impact on customer experiences, satisfaction, and brand loyalty.

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## The Inquiry-Knowledge Link

One of the most striking differences between ES and EKM is the level to which each technology evaluates the lifecycle of the knowledge provided to the user—including how useful the answer was to the user. Simply put, ES doesn't "care" if the results served up match the customer's intent or provide the right answer. ES systems offer neither tools that can detect whether or not the user feels the question has been answered nor tools that allow users to rate the value of content or suggest additions and improvements.

But to satisfy the information needs of today's consumer and deliver the transactions and conversions that companies desire, search technology needs to be more tightly coupled with the underlying content. Information and searching are interdependent and need to be implemented in an integrated fashion to produce highly relevant answers.

This is exactly what EKM solutions are designed to do—closely link queries with content. EKM solutions tightly integrate technologies to create, find, understand, and measure the entire search-and-answer information lifecycle. EKM solutions also leverage Web 2.0 technology with the goal of continuously improving information so that users can find answers more quickly and so that the value, completeness, and accuracy of the information are optimized.

EKM solutions enable this integration by providing tools that manage the various functions within the information lifecycle—including content creation, management, measurement, and publication, as described in Table 1.

TABLE 1. ENTERPRISE KNOWLEDGE MANAGEMENT INFORMATION LIFECYCLE MANAGEMENT

FUNCTION	CAPABILITY	METHODOLOGY
Create	Embedded authoring tools	Tools are embedded into the primary process using EKM, such as the customer service representative's desktop or a customer discussion forum. The embedded tools enable users to contribute knowledge as a natural part of their current activity or job function, producing up to 10 times more knowledge creation than when it is treated as a separate task.
Manage	Capture of user feedback	A broad range of mechanisms is built in to encourage user feedback, such as surveys, comment fields, and rating forms for content and authors. These leverage Web 2.0 technologies to encourage participation in knowledge development and refinement by a wide range of users, both internal and external to the company.
Measure	Analytics and metrics	Dashboards provide insight into the questions being asked, which types of knowledge are best answering questions, and which questions go unanswered. Insight helps managers prioritize knowledge creation and maintenance efforts by providing an understanding of content usage, system satisfaction, and content gaps.
Publish	Simplified workflow or immediate publication without review	Workflow supports quick publication to reduce time lag between knowledge creation and publication. It enables a quick response to critical knowledge gaps as they become apparent during customer interactions. Publishing can be permissions driven for those markets that require strict governance rules.

### The Effect on the Customer Experience

By using a search methodology based on intent, delivering directed answers, and closely integrating inquiries with content, EKM increases the *findability* of information—in other words, EKM helps the user discover a relevant answer in the shortest amount of time. These capabilities can also create a richer, more meaningful experience for users.

In summary, these methodologies' different approaches to the search process and the inquiry-content relationship result in a substantially different search experience for customers, agents, and partners, as evident in Table 2.

TABLE 2. THE SEARCH EXPERIENCE: ENTERPRISE SEARCH VERSUS ENTERPRISE KNOWLEDGE MANAGEMENT

ENTERPRISE SEARCH FEATURES	ENTERPRISE KNOWLEDGE MANAGEMENT FEATURES
<p>Keyword search:</p> <p>Each term is treated separately, producing many unrelated results.</p>	<p>Intent-based search:</p> <p>NLP, analytics, and rules determine intent of a search, delivering a relevant answer faster than keyword searching.</p>
<p>No inquiry-content integration:</p> <p>No ability to improve knowledge based on user experience with search.</p>	<p>Knowledge lifecycle management:</p> <p>Integrates inquiries with knowledge to improve search success through continuous content refinement and elimination of knowledge gaps.</p>
<p>Simple configuration and smaller overall footprint:</p> <p>Indexing requires minimal configuration effort.</p>	<p>Configuration for intent and directed knowledge:</p> <p>Can be simply configured to do no more than provide a keyword search. But the value lies in helping users find the most precisely relevant answer, which requires the development of intent libraries and rules. Oracle Knowledge products' prepackaged industry intents reduce configuration time and effort.</p>

The best way to understand the effect on the customer experience is to look at the actual results of a standard ES inquiry versus the actual results for the same inquiry managed by an EKM solution.

## The Enterprise Search Experience

When searching a Website for an answer to the question “What is the price of the new Blackberry Curve?” ES provided results as shown in Figure 1.

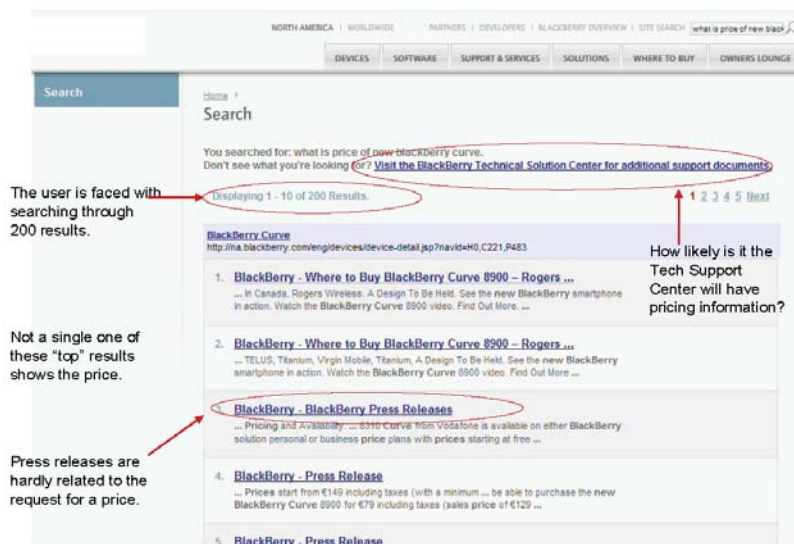


Figure 1. ES returns results that are often too numerous and unrelated to the primary query, while giving irrelevant information such as links to unrelated departments or press releases.

This is typical of the type of experience that ES delivers. This is a difficult and ultimately unsatisfying experience because it will require additional time, effort, and probably more searches to find an answer to the simple request for pricing information. It can easily frustrate a customer, leading to a more costly phone call or, worse, Website abandonment in favor of a competitor with a more customer-friendly search engine.

## The EKM Search Experience

Now let's look at the same inquiry when managed through an EKM solution as shown in Figure 2.

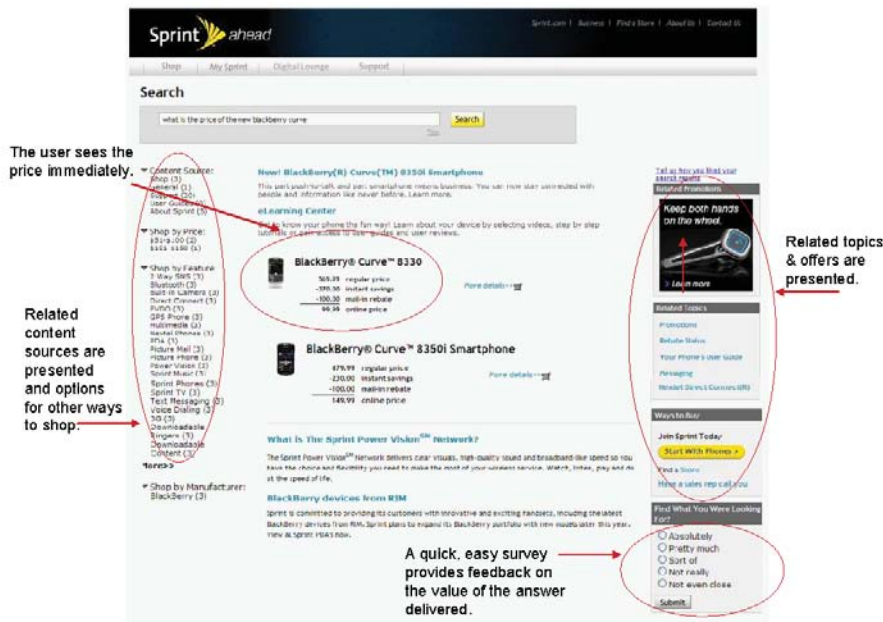


Figure 2. EKM returns results that are directly relevant to the search terms, along with related content and offers and the opportunity to give feedback on the quality of search results.

By using a search methodology based on intent and directed knowledge, this self-service site has quickly provided an exact match to the customer's request and delivered related information that can help the customer reach a buying decision. At the same time, the integration between the content and the inquiry enables the customer to provide feedback about the effectiveness of the search experience, which helps the company refine and improve the content that is used to answer the inquiry.

This approach and experience-based feedback can have profound effects on the quality of customer service and the efficiency of support organizations. Oracle clients have achieved significant improvements in their customer satisfaction ratings and have substantially reduced costs by implementing the EKM approach to searching.

For example, Pitney Bowes set a strategic management goal to lower service costs by reducing the call time for billing and technical assistance calls while providing customers with better self-service. The company replaced multiple homegrown intranet systems used by 1,100 agents with knowledge management products from Oracle. Using Oracle Knowledge for Contact Center, call research time

was reduced by 50 percent on average. With Oracle Knowledge for Web Self Service, Website inquiries achieved better than 75 percent initial resolution, and the company experienced a nearly 80 percent reduction in e-mail spike inquiries during postal rate hikes.

These are not isolated results: GE Fanuc saw customer support cases that were initiated online drop to less than 8 percent, and the company experienced a 100 percent increase in online customer satisfaction scores. By using Oracle Knowledge for Web Self Service, Juniper Networks increased customer satisfaction by 50 percent, saved approximately US\$15 million in overall e-support costs in two years, and went from receiving “hate mail” to being recognized as having one of the ten best Websites for support.

## Conclusion

The choice between enterprise search and enterprise knowledge management does not have to be an either-or proposition. It may be perfectly appropriate to use both technologies in customer-facing environments. For example, ES can be useful for more-casual surveying when customers want to browse around for products and options.

EKM, on the other hand, is far more effective at providing rapid advice and pinpointing the right answer. When customers want information to answer a specific question, resolve a problem, or complete a business transaction, EKM is the better solution because the primary objective is first to determine the customer’s true intent and then to immediately deliver the most relevant answer based upon understanding of this intent.

To deliver a great customer experience, it is important to invest in a platform that can quickly find the relevant information that meets customer demands. It is equally important to invest in a platform that expands the company’s knowledge library and manages the entire knowledge lifecycle by encouraging ongoing creation, collaboration, and insight. Clearly, EKM is the superior choice.



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