



WHITE PAPER

The Knowledge Quotient: Unlocking the Hidden Value of Information Using Search and Content Analytics

Sponsored by: Coveo and Lexalytics

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EXECUTIVE SUMMARY

The availability of a wide variety of data and the technology, skills, and processes to take advantage of it promise to radically change how information is accessed, analyzed, and shared to make better decisions, personalize customer interactions, optimize operations, and innovate. A big part of realizing this promise is dependent on efficient and effective access to unstructured content and the analysis of such content in addition to and in conjunction with structured data. The unstructured content, especially, is locked in a variety of formats, locations, and applications made up of separate repositories that don't talk to each other. Unlocking information from this content is not a trivial task, and many organizations face roadblocks because of a lack of appropriate technology and processes.

Although unstructured content accounts for 90% of all information according to IDC,¹ organizations have generally either significantly underinvested in technology and processes for addressing unstructured content or invested in substandard technology and processes for addressing unstructured content.² Yet unlocking the value hidden in unstructured content is more critical than ever. The amount and pace of information that knowledge workers have to deal with on a daily basis are increasing dramatically.

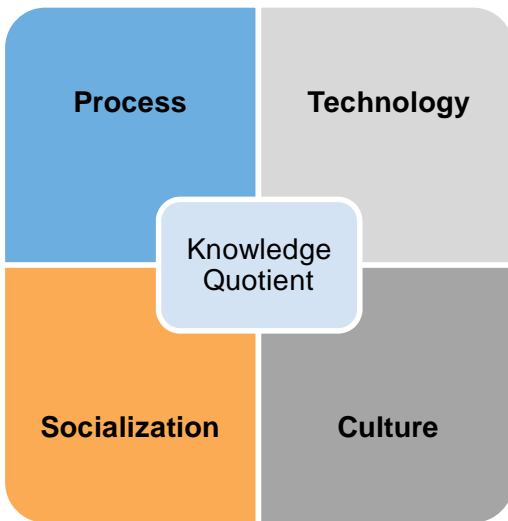
IDC set out to identify organizations that are able to extract more value out of the information available to them. What are these leaders doing better or differently than others? How are they combining new technology and processes as well as empowering staff to unlock the hidden value of information? What are the benefits that these organizations are achieving? What are the lessons learned from these organizations, and how can they help others achieve similar results?

In the course of our multivendor-sponsored research, which included a survey of 2,155 organizations across 6 countries as well as in-depth interviews with 11 organizations in the United States and Europe, we identified a set of leading organizations that have a high *Knowledge Quotient* (KQ).

The Knowledge Quotient is a score developed by IDC that identifies an organization's ability to unlock the hidden value of information. As shown in Figure 1, the KQ is composed of four primary information access, analysis, and sharing capabilities.

FIGURE 1

The Knowledge Quotient



Process refers to the ability to access, analyze, and share all relevant information originating inside and outside the organization.

Technology refers to the availability and quality of and satisfaction with unstructured information access, analysis, and sharing software.

Socialization refers to an organization's ability to share and reuse information.

Culture refers to the management's support, funding, and recognition of information as a key organizational asset and the human resources to treat it as such.

Source: IDC, June 2014

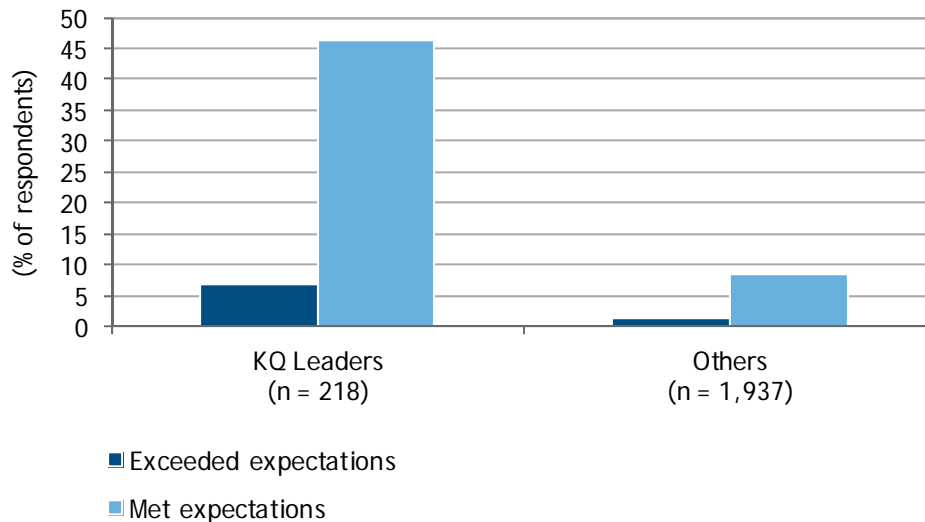
We segmented the 2,155 organizations into two groups: those with a KQ in the 90th percentile (or about 10% of the research sample) and all others. For the purposes of this study, we call the former group of organizations KQ Leaders. This highly select group is characterized by its ability to unlock the hidden value of information and in turn drive business benefits. However, the fact that KQ Leaders represent only a fraction of the population also leaves significant room for improvement and an opportunity. We found a strong correlation between higher KQ and the achievement of greater benefits from the use and support of information access, analysis, and sharing technologies and processes.

Figure 2 shows the percentage of KQ Leaders that achieved benefits from their recent information access, analysis, and sharing projects that either met or exceeded expectations. The rest of the organizations used technologies and processes that either did not meet expectations or did not have any benefits or where the benefits were not quantified.

Organizations with top KQ scores are five times more likely than others to experience benefits that exceed expectations. In other words, KQ Leaders are significantly more frequently able to unlock the value from their organization's information assets.

FIGURE 2

Organizations with Benefits That Meet or Exceed Expectations



Note: KQ Leaders are organizations with a KQ in the 90th percentile and thus represent 10% of the survey participants.

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

A few examples of the benefits from information access, analysis, and sharing projects and technology deployments that we encountered in our research are explored in the sections that follow.

Industry: Information Services

A provider of OEM service and repair information to the professional automotive service and collision industries is using text analytics technology to identify, extract, classify, and organize parts and repair information from all car manufacturers, yielding an improvement of almost 5,000% in data ingestion and processing processes. This has enabled the company to expand into new geographic regions (with multilanguage support), improve its pricing model, and provide new insights to clients, which in turn enables them to improve inventory management or speed service delivery.

Industry: Insurance

An insurance company is able to respond to claims after a disaster much more quickly and with far fewer employees than its competitors using automated technologies for monitoring social media, phone calls, email, and text messages, providing a superior level of service at a fraction of the cost.

Industry: Manufacturing

A global manufacturer with 70,000 internal users is saving over \$50 million per year by unifying access to intranet, content management, customer support, and ERP sources and enhancing the productivity of all users.

Industry: Research and Development Services

A global research and development (R&D) company is using text analytics and information access and analysis technologies to automatically identify and extract skills and areas of expertise for knowledge workers based on the content they have created. This skills data is used by employees to find internal collaborators across the globe, yielding a significant increase in productivity and innovation.

Industry: Pharmaceuticals

A major pharmaceutical manufacturer generated millions of dollars in new revenue by combining new research with previous research and drug studies, which introduced a new use and new market for an existing drug that it already had on the market.

Industry: Financial Services

A global investment bank is generating significant new revenue using information access and analysis technologies as the hub of a knowledge management system, collecting, locating, sharing, synthesizing, and analyzing information across the globe about topics such as stock and bond information, company analyses, investment reports, internal email, and even internal social media.

Best Practices of Knowledge Quotient Leaders

The number of these types of organizations with the highest KQ remains relatively low. Most organizations need to overcome several technology and organizational challenges to increase their KQ. One of these challenges is the ability to assess project benefits. 63% of our sample had not quantified benefits from their projects – an unexpectedly high percentage, suggesting a lack of methods, discipline, and resources to perform this invaluable task.

How can your organization increase its KQ as well as improve the opportunity to unlock the hidden value of information and reap the business benefits of doing so? The lessons learned from organizations interviewed and surveyed by IDC suggest the following key best practices of KQ Leaders:

- Create an organizational information access and analysis strategy to tie structured and unstructured data sources together virtually.
- Implement search strategies that can effectively access siloed and legacy data sources. Create a single unified index and view of all the information within your organization, regardless of its location, and standardize information access subject to permissions.

- Develop and promote an organizational culture that understands and embraces the collection, use, sharing, dissemination, and collaboration of information as a key asset. Encourage information collection, retention, and reuse within your organization.
- Use information handling techniques and processes such as text analytics, auto-categorization, auto-tagging, and auto-taxonomy generation to extract additional value from your unstructured information and relate it to your structured data repositories.
- Develop measures and methodologies for determining success. Our study shows that organizations that explicitly measure their information access and sharing efforts are much more likely to gain significant benefits than those that don't.

Unlocking the hidden value of information can yield immediate and tangible benefits to your organization. Knowledge is the lifeblood of many organizations, and increasing your organization's knowledge quotient can improve productivity, help contain costs, increase innovation, and increase revenue by leveraging the organization's most important asset, knowledge.

IN THIS WHITE PAPER

In this white paper, IDC presents the results of a multivendor research study that examines the characteristics of organizations that are able to derive value from their enterprise and external unstructured information and a combination of that information with structured data. We identify the best and emerging practices of organizations able to unlock the value from this hidden information – a value that has remained largely untapped. The white paper also introduces the concept of organizational Knowledge Quotient, or a score by which IDC assesses the ability of organizations to unlock the hidden value of information and drive outsized business benefits. Two of the vendors that sponsored the study were Coveo and Lexalytics. This white paper also highlights the software solutions provided by Coveo and Lexalytics to help organizations achieve a higher KQ and derive higher revenue, lower costs, and improved productivity by leveraging unstructured content – on its own as well as in combination with structured data.

METHODOLOGY

The research presented in this white paper was conducted in the fourth quarter of 2013 and the first quarter of 2014 and is based on a combination of survey- and case-based research. The survey, conducted with 2,155 knowledge workers from private and public sector organizations across 6 countries, dealt with organizations' information access and handling practices. 39% of the survey respondents had the title of manager or above. For additional survey demographics, see the Learn More section.

For the purposes of this study, IDC defines knowledge workers as employees who are connected to the Internet and use a computing device to find, create, share, access, or enter information or data electronically in the course of performing their job. Skilled task workers, researchers, salespeople, analysts, managers, IT staff, executives, and professionals are all included as knowledge workers.

IDC analysts also conducted 11 in-depth interviews with organizations in the United States and Europe about their information handling practices. Additional ongoing IDC research about the content analytics and discovery, search, and big data markets was referenced in assessing the results of this research.

Note: All numbers in this document may not be exact due to rounding.

SITUATION OVERVIEW

Organizations are facing an unprecedented challenge today from the overwhelming amount of information that is increasingly available to them. At the same time, the latest technologies have given organizations the tools to unlock the hidden value of information and treat it as an asset. In particular, there are new opportunities to take advantage of all the unstructured content to both improve existing customer interaction processes and introduce new customer interaction processes. But there are also opportunities to utilize this information across all operational and support processes and to improve knowledge worker productivity. For example, 78% of KQ Leaders indicated that the ability to access and analyze the unstructured information within their organizations was very beneficial to the finance department, while 60% of KQ Leaders indicated it was very beneficial to the manufacturing department.

Our research showed that for most organizations, unstructured information remains fragmented. 61% of knowledge workers access 4 or more systems on a regular basis and 13% need to access 11 or more systems to get the information they need to do their job. This information is locked in a variety of formats in network file shares, content management systems, intranets, bespoke applications, and other repositories that don't talk to each other.

Organizations need to be able to find, access, and use unstructured information as easily as they use structured information today. In addition, organizations should be able to relate their unstructured information to their structured data in order to present a holistic view of the subject or topic being analyzed or researched. For example, organizations should be able to easily link and view customer comments and customer call records along with customers' previous orders and order history. They should be able to see what these customers might be posting on social media about the organization and their experiences with it.

Once the knowledge worker opens each system, he/she spends valuable time searching for and often not finding information. Our study showed that knowledge workers spend 16% of their time searching for information. In addition, they spend 10% of their time per week consolidating and analyzing information from one or more sources on top of the time spent looking for information. In aggregate, a quarter of knowledge workers' time is spent finding and analyzing information. This can be, but isn't always, productive work: Knowledge workers find the information they need only 56% of the time. They also waste time on combining data from multiple repositories, reformatting data from various sources, recreating content that can't be found, and other low value-added activities.

Knowledge workers find the information they need only 56% of the time.

As an example, a global manufacturer needed to organize all customer service, maintenance, and repair information for its field service engineers. Relevant information was scattered throughout numerous sources and locations and was presented in different formats. The information was not

unified and therefore difficult and time consuming to find, often requiring separate searches in disconnected systems. The company identified a critical need to add structure to unstructured information to improve its "findability" and to expose the information through a single portal through which the engineers could systematically locate the information needed to perform their jobs.

In another example, a major biopharmaceutical company wanted to accelerate its research and innovation processes. To achieve this goal, the company needed to provide its scientists with the ability to research, aggregate, and understand information related to the company's various projects. To facilitate this process in a timely manner, the company recognized the need to improve its information collection, aggregation, and discovery technology.

These are just two examples of many that highlight the challenges and opportunities facing most organizations with the handling, location, and use of unstructured information. Certain organizations overcome the challenges and take advantage of the opportunities better than others. What characterizes these organizations is a higher Knowledge Quotient. It is a measure of an organization's ability to unlock the hidden value of information, which results in better business outcomes for commercial enterprises and a better ability to fulfill their mission for public sector organizations.

Organizational Knowledge Quotient

Most organizations are based on the intellectual capital that they own and create in combination with the products and/or services that they offer to the market. The ability to find, access, analyze, organize, use, share, and reuse this intellectual capital is what IDC calls the KQ of an organization. The KQ is composed of four primary information access, analysis, and sharing capabilities:

- **Process (of unstructured information access, analysis, and sharing):** This component of KQ measures an organization's ability to find, combine, access, organize, analyze, use, reuse, and share information throughout the organization. It also assesses the value organizations place on various data types and their effectiveness in utilizing this information for research, analysis, and decision making.
- **Technology (for unstructured content preparation, access, analysis, and sharing):** This component of KQ measures the satisfaction of users with and the availability of a wide range of unstructured information software, such as, but not limited to, search, content analytics, automated document classification or categorization, text mining, and natural language processing.
- **Socialization (of information and its reuse):** This component of KQ measures the ease and effectiveness of information sharing and reuse, collaboration, and expert identification. It also assesses the effectiveness of management's involvement in promoting information sharing and reuse and the technology for information sharing and reuse.
- **Culture (of valuing information as an asset):** This component of KQ measures the extent to which an organization's business and IT executives and managers view information as an asset and the ease of funding projects related to unstructured information.

The ability to find, access, analyze, organize, use, share, and reuse this intellectual capital is what IDC calls the KQ of an organization.

To calculate the KQ of each organization, IDC assessed the organizations' responses to 39 questions and aggregated the scored responses. We then segmented the 2,155 organizations into two groups:

those with a KQ in the 90th percentile and all others. For the purposes of this study, we call the former group of organizations KQ Leaders.

The Key Indicators of Knowledge Quotient Leaders

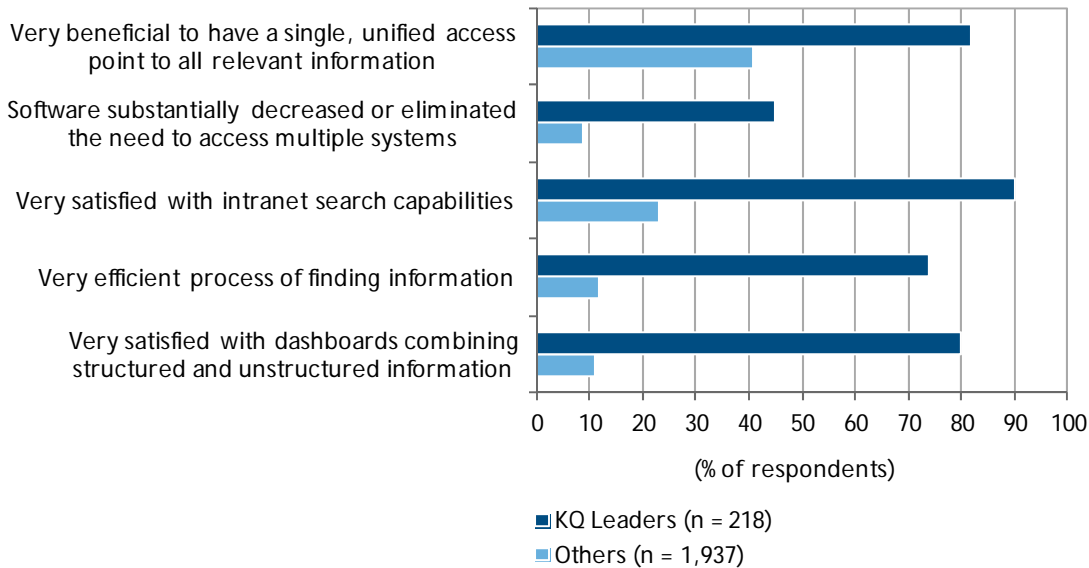
KQ Leaders share several key characteristics. These organizations make use of information access and analysis technologies to facilitate information unification, location, discovery, and sharing among their employees and other stakeholders. We describe these indicators by broadly categorizing them into two segments: *Process and Technology* and *Socialization and Culture*. For key results showing the difference between KQ Leaders and others, refer to Figures 3 and 4.

Process and Technology

The results shown in Figure 3 point to a substantial gap between KQ Leaders and others. Only a small (10%) portion of organizations – the KQ Leaders – are experiencing high satisfaction rates with some of the core capabilities of their information access and analysis technology and processes. The other 90% have much room for improvement, even in something as seemingly basic yet nontrivial as intranet search. For example, only 23% of these organizations (non-KQ Leaders) are very satisfied with their intranet search capabilities.

FIGURE 3

Differences Between KQ Leaders and Others: Process and Technology



Note: KQ Leaders are organizations with a KQ in the 90th percentile and thus represent 10% of the survey participants.

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

Information Unification

According to our research, 61% of knowledge workers need to access 4 or more systems and 13% need to access 11 or more systems on a daily basis to get the information that they need for their jobs. These systems can range from ERP and CRM applications to intranets and content management systems. Information access and analysis technologies provide a solution to the issue of siloed information access. Using connectors that crawl the content, these systems index the information in the various repositories in a unified fashion – rather than moving the information, they enable a type of "virtual information integration." The unified indexing approach enables data enrichment through text analytics, which will uncover information relationships among data in vastly different systems as well as enable automated metadata extraction and tagging, all of which serves to increase findability and ultimately the contextualization of content. Users see a single view of the information, regardless of its type or location. Twice the percentage of KQ Leaders as others indicated that it was very beneficial to have a system that provided them with a single, unified access point to the information needed for their work (refer back to Figure 3). In addition, KQ Leaders cited five times more frequently than other organizations that the information access and analysis software had either substantially decreased or completely eliminated the need to access multiple systems.

For example, a Fortune 50 healthcare company is using technology from Coveo and Lexalytics to transform search and information handling practices within its research and development organization. "Before, 90% of our users' time was spent just trying to find the right information, while 10% went toward analysis. Obviously, we needed to reverse those numbers," said the company's director of R&D Informatics and Controls. The Coveo search portal became the foundation for the company's ongoing knowledge engineering project, which is designed in part to navigate and extract knowledge from unstructured, fragmented data found in multiple formats and silos, including PDF, Word, Excel, PLM systems, and QUMAS compliance solutions. The new technology has contributed \$6 million in savings to the company because of increased knowledge worker productivity and an additional \$1.75 million in benefits because of reduced labor requirements. However, the company believes these numbers are just the tip of the iceberg for value creation. The true value has been the company's new ability to go to market faster with more innovative products, contributing to revenue increases in a highly competitive industry.

Information Location and Discovery

Once the data sources are connected and there is a unified index of the data across all the needed data sources, organizations can use the index as a basis for unified search and relevance. With the addition of text analytics, other capabilities may include taxonomy generation (which can then be refined), metadata extraction, auto-tagging, and the ability to recommend contextually relevant content or experts to make it easier for users to discover and locate the information they need.

A good example of this is the improvement in information location and discovery capabilities at Boston Children's Hospital. According to Shelley Norton, Document Repository Administrator at Boston Children's Hospital, "In the healthcare industry, every second counts. Accessing the right information impacts children's lives. With Coveo, healthcare providers and researchers at Boston Children's Hospital have instant access to the precise information required to treat patients and push their research forward toward developing cures for pediatric illnesses." As mentioned previously, only 29% of our respondents were very satisfied with their intranet search, but there is a big difference in the level of satisfaction between KQ Leaders and others (refer back to Figure 3). The much greater satisfaction of KQ Leaders with intranet search can be often attributed to ensuring high relevance of

this technology to users. In addition, for most KQ Leaders, intranet search is a portion of a broader information access and analysis strategy, ensuring that all relevant content inside and outside the intranet is included, metadata is related across repositories, and the organizational culture focuses on information as a key asset. As a reminder, KQ Leaders represent only 10% of our sample, which means that there is a lot of room for improvement for most organizations even in "basic" intranet search. Similarly, there is a large disparity between KQ Leaders and others with regard to satisfaction with their current process of finding information needed for their work.

Relating Information Across Repositories

Many of these systems have the ability to use text analytics to identify and extract key information found in all the unstructured information. People, places, things, events, sentiment, and even relationships can be discovered and extracted by text analytics solutions. Once this key information is found and extracted, it can be used as metadata to link records, documents, and other information. For example, customer service records about a company can be linked to order records, which in turn can be linked to correspondence with or about the company as well as any public information such as employees of the company writing on a blog. The ability to identify and link all this information can be very valuable for anyone working on projects related to the company. This is exactly what KQ Leaders are able to do, with 80% of KQ Leaders being very satisfied with dashboards that combine structured and unstructured information (refer back to Figure 3).

The ability to relate information across repositories can be extremely beneficial to an organization and its customers. As an example, Majedie Asset Management, a boutique investment firm that specializes in equities, primarily for institutional investors, is able to unify and relate information across a wide range of cloud-based repositories, including databases, file systems, Outlook, SharePoint, and Salesforce. Users have the ability to tag relevant internal information about various portfolio assets across the repositories, allowing for new discoveries about companies for increased financial insight. The company also finds exceptional insights from information located in Salesforce Chatter, especially for information that's late breaking. According to Simon Hazlitt, Majedie's information director and one of the cofounders of the company, "When we begin examining assets, we don't know how the content should ideally be arranged at the beginning. Without Coveo, finding appropriate correlations would depend on a superhuman ability to predict what considerations you'll need to apply to information. It's otherwise impossible. It's the only way to deal with the explosion of content that we're all seeing."

"Without Coveo, finding appropriate correlations would depend on a superhuman ability to predict what considerations you'll need to apply to information."

Socialization and Culture

The results shown in Figure 4 also point to a substantial gap between KQ Leaders and others. Only a small (10%) portion of organizations – the KQ Leaders – show very positive responses to the capabilities listed in Figure 4. The other 90% have much room for improvement. For example, only 10% of these organizations (non-KQ Leaders) cite that they are very effective at expert identification.

FIGURE 4

Differences Between KQ Leaders and Others: Socialization and Culture



Note: KQ Leaders are organizations with a KQ in the 90th percentile and thus represent 10% of the survey participants.

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

Information Sharing and Socialization

Once information is located and discovered, many information access and analysis systems make it easy to share and socialize data with employees and other stakeholders such as customers and suppliers.

More organizations have, in fact, begun to provide information access to external stakeholders. As an example, Deltek Inc., a leading global provider of enterprise software, is able to organize, unify, and locate customer service information across a wide range of sources. Deltek's customer service agents and customers can locate and discover customer service-related information through a self-service portal by utilizing the same index, but with differently configured interfaces. This ensures that customers have consistent experience across channels, whether they interact with the company via self-service or the call center, or social media. KQ Leaders indicate significantly more frequently that it is very easy to share information within their organization (refer back to Figure 4).

Security concerns and policy, legal, and compliance issues are all very important to organizations, but those concerns need to be tempered with the attitude that information should be able to be shared with the widest number of people possible in the organization. Often, this requires a mental shift on the part of IT and policy makers to make information sharing the default and lock down or secure information only when absolutely necessary. As retired U.S. Army General Stanley McChrystal said, "Information is only of value if you give it to people with the ability to do something with it."³ In many organizations, this needs to be a cultural change driven by the CEO and the C-level team in order to maximize the amount of information sharing possible within the organization.

Information Reuse

Many organizations have large legacy information archives that can be difficult to access. In addition, many organizations have acquired legacy content through acquisitions, joint ventures, and other types of corporate events. For most employees, these legacy archives are a black box that could potentially hold valuable and useful information, if only the information could be located, discovered, and used. Information access and analysis systems facilitate this type of discovery and reuse, and many systems have connectors to legacy systems just for this reason. KQ Leaders indicate four times more frequently than others that the processes and strategies their organization uses to collect information and knowledge for sharing and reuse were very effective (refer back to Figure 4).

Mining the existing information and knowledge of an organization is a great way to generate new revenue at a fraction of the cost of new research.

Pharmaceutical or applied research firms are great examples of the potential of information reuse. Analysis of prior research in concert with analysis of new research can often yield serendipitous finds that turn into profitable new products. Mining the existing information and knowledge of an organization is a great way to generate new revenue at a fraction of the cost of new research.

As an example, let's consider the Institut National d'Optique (INO), which is a technological design and development firm specializing in optics and photonic solutions. INO's challenge was that researchers and other employees were not using or sharing the extensive research and findings that the company had accumulated over many years. According to INO's Process and Compliance Manager, Pierre Bergeron, "Our employees were only getting a fraction of the view of all knowledge and were lacking the insight that they needed to be more effective at their jobs." INO deployed technology from Coveo to unlock the value hidden in its existing IP about projects, clients, and research that was distributed in emails, project documents, and file shares. Currently, approximately 99% of INO's relevant corporate information is indexed by Coveo, giving scientists, engineers, and all employees immediate single-screen access to the most up-to-date information across all enterprise systems. INO's CFO, Martin Larrivée, said, "Since our Coveo implementation, we have significantly increased our efficiency and productivity numbers, which translates into a 5% improvement in productivity per employee."

Expertise Identification and Location

One very useful aspect of information access and analysis technology is the ability to use it to identify and locate internal (and potentially external) skills and expertise. Most organizations have or use a skills database within their HR system, but for many organizations, it is seldom used and updated. To automate the process of generating skills and identifying expertise, information access and analysis

systems use text analytics to identify particular subjects, topics, and expertise that employees write about in their papers, emails, research, and published documents. An organization can use this extracted information and link it to the person who authored the documents to identify staff who are likely to have expertise in a certain topic or who are interested in that topic and have written about it. 74% of the KQ Leaders versus 10% of the others indicated that their ability to automatically determine the capabilities and expertise of a person or group (expert identification) was very effective (refer back to Figure 4).

Two software vendors that help clients improve many of these characteristics that lead to increased KQ and the ability to unlock the hidden value of information are Coveo and Lexalytics.

COVEO AND LEXALYTICS

Coveo is a search and relevance software provider founded in 2005. Lexalytics is a text analytics software provider founded in 2003.

Organizations choose Coveo along with an available text analytics module built on Lexalytics technology to unlock the hidden value found in their data and content repositories. They use the technology to improve findability, contextualize content for each user, increase information reuse, and relate information across disparate data sources. Coveo's search and relevance technology organizes and transforms enterprise information into actionable, on-demand knowledge for every worker and customer. Coveo's unified indexing engine reaches, consolidates, and correlates organizational data and information sources securely, regardless of the location of the information. Information is made available to users through a single search-and-display hub including faceted search and filtering as well as recommendations of content and experts.

Coveo offers a text analytics module built on Lexalytics Saliency, which creates structure within unstructured information, identifying the "who," "what," "where," and "when" inside documents to improve searchability as well as the relation of concepts across vastly different content sources, categorization, and other uses within the information access and analysis system. Lexalytics' text analytics engine, Saliency, provides broad-based information extraction across a wide breadth of domains with the ability to tune and customize as deeply as necessary. Saliency is able to identify people, places, project names, and other entities – information that Coveo's software uses to recommend relevant content or experts within the context of the user. The Coveo text analytics module built on Lexalytics technology also helps:

- **Identify and link related documents and records across repositories.** This capability allows users to easily see a centralized view of related information, regardless of where the information is stored or in what format it is stored.
- **Identify themes to help organize information across the various silos in which it is located.** These themes are located and identified by Lexalytics' technologies, which can determine what contextual phrases are important in the documents that are being analyzed.

Coveo offers broad-based access controls protecting content, and it respects the underlying security models with early binding security to ensure both integrity and speed (the technology can also combine early and late binding security, if required). Coveo's security framework increases integration with secure repositories, providing additional flexibility to ensure that users access only the content their permissions allow, including the ability to leverage Active Directory and LDAP users and groups to easily access these role-based permissions. Access to content is controlled by multiple security levels, linked to collections and sources that are unified index organization units, as well as security associated with each document in its original system or repository.

According to IDC research, organizations select Coveo and its optional text analytics modules built on Lexalytics technology because of ease of installation and implementation as well as performance in delivering accurate and relevant results, strong customer support, and, most importantly, overall business value in supporting and automating a range of primarily customer-centric processes.

Challenges and Opportunities

In recent years, the promise and the hype of big data have produced plenty of critics who doubt the benefits of big data or point to the potential pitfalls facing organizations engaged in information access, analysis, and sharing projects. These critics make some valid points. For example, not every organization has very large volumes of data. A more pragmatic approach would be to look at not just big data but also small data, long data, dark data, hidden data, or any other metaphors that have surfaced in recent years – in other words, *all* data. In fact, the largest percentage of our 2,155 survey respondents cited the variety – not the volume or velocity – of data as the characteristic of big data most challenging to their organizations.

On the one hand, the focus on big data allows technology vendors to jump onto this marketing bandwagon, which, without specific context, can mean anything and nothing. On the other hand, it can become very difficult to differentiate in a market where everyone seems to be providing big data solutions.

Coveo and Lexalytics are well positioned to provide the right technology to unlock the hidden value locked in a full range of on-premise and cloud repositories containing a variety of information types, from documents and instant messages to pictures and videos. Both companies should continue to differentiate their technology based on their focus on search and relevance and text analytics functionality.

Organizations need to be educated on the value and potential ROI of these solutions, and as IDC's research shows, many need assistance in developing processes and strategies to utilize and measure the benefit of these technologies.

BENEFITS OF THE HIGHER KNOWLEDGE QUOTIENT

For the correlation between higher KQ and greater benefits from information access, analysis, and sharing projects, refer back to Figure 2. KQ Leaders achieve project benefits more frequently than other organizations. The sections that follow show examples and research results about these benefits.

Business Benefits

KQ Leaders are more efficient and cost effective with knowledge-intensive processes such as customer service, finance, research and development, sales, and a host of other activities. For example, in our survey, 67% of KQ Leaders compared with 19% of other organizations reported that the ability to access and analyze unstructured information was very beneficial to the sales department in their organization. In the finance function, the numbers are similar: 72% of KQ Leaders versus 16% of other organizations indicated that the ability to access and analyze unstructured information in concert with structured information was very beneficial.

KQ Leaders innovate more quickly than their counterparts, often generating more revenue per employee. In our survey, 72% of KQ Leaders versus 25% of others cited unstructured information access and analysis initiatives as very important to their organization's revenue growth. Several of the organizations we interviewed, such as AstraZeneca and Security First Insurance, achieved revenue growth as a result of their information access and analysis initiatives.

In addition, a number of organizations that we interviewed reported improved customer satisfaction for customer-facing information access and analysis applications. Examples include applications such as a major investment banking platform, a global manufacturer's field service engineering application, and Security First's customer response system. These organizations have improved their customer support processes by incorporating information access and analysis technologies, streamlining the ability to get the right answers to the right customers at the right time.

72% of KQ Leaders versus 25% of others cited unstructured information access and analysis initiatives as very important to their organization's revenue growth.

Information Access, Analysis, and Sharing Process Benefits

KQ Leaders are able to combine, reuse, and share information more efficiently and effectively than their counterparts, eliminating rework and increasing productivity. In our survey, 44% of KQ Leaders versus 12% of the other organizations reported that unstructured information access and analysis technology at their organization has either substantially decreased or completely eliminated the need to manually combine information from multiple sources.

Similarly, KQ Leaders are able to more easily derive meaning from the large volume of multistructured information. In our research, 44% of KQ Leaders versus 14% of other organizations reported that their need to manually derive meaning from unstructured information has either been completely eliminated or substantially decreased.

All the organizations we interviewed as part of this study improved information access, analysis, and sharing process efficiency using their information access and analysis software and initiatives. For example, an OEM auto repair information provider saw a 5,000% improvement in data ingestion and processing processes.

Knowledge Worker Productivity

What does information work cost the enterprise? IDC has surveyed information workers since 2001 to determine how much time they spend on a variety of information tasks and how much of that time is wasted because of inadequate information access and analysis technology or processes. The goal of this ongoing research is to determine the cost of inefficiency and waste and the value that can be unlocked by improving knowledge worker productivity.

In this study, we asked knowledge workers about the tasks that they perform regularly and the time they spend on average on these tasks on a weekly basis.⁴ We also asked about the level of success of the various information access, analysis, and sharing tasks. For example, we asked about the time spent searching for but not finding information. Based on the responses of 2,155 knowledge workers, average annual salary, and length of workweek, we calculated the average cost of poor knowledge worker productivity on an organization.

According to our research, knowledge workers spend on average about 16% of their time per week on gathering information: searching, retrieving, and browsing internal and external information. These knowledge workers can't find the information they are looking for or need 44% of the time. The financial impact of wasted time by knowledge workers becomes significant when we examine the problem on an organizationwide basis. If we assume an average workweek of 41.8 hours⁵ and the annual salary per knowledge worker to be \$80,000,⁶ then the cost assigned to the wasted time on searching but not finding information is \$5,700 per year per knowledge worker. A low KQ organization employing 1,000 knowledge workers wastes over \$5.7 million annually searching for but not finding information. These results are based on conservative estimates; in addition, there are other wasteful tasks such as reformatting data from various sources, recreating data that can't be found, and manually combining data from multiple repositories.

A low KQ organization employing 1,000 knowledge workers wastes over \$5.7 million annually searching for but not finding information.

Since knowledge workers and the information that they generate are key assets in most organizations, improvements in knowledge worker productivity can yield great benefits in customer centricity, customer and employee satisfaction, time to market with more innovative products, streamlining R&D efforts, and the ability to address compliance requirements.

LESSONS LEARNED

A number of important lessons came out of our research. Organizations looking to increase their KQ by launching new or improving existing information access, analysis, and sharing projects and deploying the related technology should consider the following:

- **Develop an overall information architecture strategy.** As part of the initial analysis and design work, many organizations develop an overall information architecture strategy and road map that incorporate all the different types and locations of information representing the most important and valuable sources the targeted users will want to access. Organizations should consider the development of a search-driven information architecture that uses a unified index as the virtual layer that connects all their information throughout their information technology infrastructure. Once organizations have completed the information architecture strategy and road map, they can develop an implementation process that brings all this disparate information together in a unified fashion.
- **Maximize value from existing information assets.** While many organizations are using internal Web sites, CRM and ERP systems, databases, email, instant messaging, and content management systems for storing current information, large amounts of intellectual capital and value are also stored in documents across the organizations' file shares as well as legacy data stores. These data sources hold the historical archive of knowledge assets that are not being used to their fullest potential. Organizations should include file shares and other legacy data stores as part of the information that needs to be accessed and shared. Enterprise-capable information access and analysis systems have the ability to locate, find, and utilize these historical assets, improving overall productivity and knowledge reuse and unlocking the hidden value of all this information.
- **Provide senior management support for information sharing and reuse projects.** Organizations need to have strong management and IT support for information sharing and reuse projects. At KQ Leaders, business executives and managers view information as the key asset for research, analysis, decision making, and operations for their business. Senior managers need to create and encourage a culture that values information and provides support and authorization for information access and analysis projects.
- **Understand and plan for security requirements while promoting information sharing.** Many organizations have stringent security systems and standards in place to guard against unauthorized access. Information access and analysis solutions and platforms that recognize and work with corporate security standards and systems such as Microsoft Active Directory are a "must-have" for large organizations that need to adhere to these standards. Information access and analysis solutions should be able to tie into existing corporate security systems and verify that documents and other information have the right security profiles for appropriate users to access. In addition, organizations need to make that mental shift to share as much information as possible while maintaining their security standards. The default strategy should be to share information as widely as possible within the organization and with external stakeholders to promote collaboration, reuse, and innovation.

- **Utilize information access and analysis systems that include text analytics and entity extraction capabilities.** Text analytics tools extract the elements of meaning from unstructured information and put them into a structured format so that they can be combined and analyzed in concert with other data. These technologies categorize and tag documents to emphasize what they are about. They extract names of people, places, products, and things – entities – as well as time, opinions, sentiment, and geographic location and add this additional information as metadata to either the search index or a structured data repository to establish relationships between information nuggets. Text analytics can also relate documents and information to each other across repositories. This capability enhances the overall value and utility of the solution to end users and allows them to see what a document is about without having to actually read the entire item. The ability to identify, extract, and "unlock" these themes and entities from the text of the documents is what separates the best of the latest generation of systems from traditional search applications.
- **Utilize external information to facilitate decision making.** Many organizations have information needs that require the acquisition and use of external data that ranges from social media data from services like Twitter or Facebook to research data like patents and professional journal information. A wide range of data and content sources are available to be incorporated with internal data to create even more valuable information assets. Organizations should consider using information access and analysis software to connect to all the relevant third-party information to augment and improve their decision-making processes.
- **Develop methods and procedures to measure benefits.** In our study, 79% of respondents indicated that they have experienced benefits from unstructured information access and analysis activities, but only 16% of respondents said they have quantified those benefits. To get the maximum leverage out of these technologies, organizations have to develop strategies, methods, and procedures for measuring success. Success metrics can also become key tools in the hands of top managers when promoting the use of information access and analysis solutions. Organizations should develop measurement strategies as part of their project and technology design and implementation plans.
- **Utilize and rationalize technology to achieve maximum benefit.** Often, the various information access and analysis technologies are not specifically designed to work together. To alleviate this potential problem of matching requirements to any one technology product's functionality, organizations should consider information access and analysis solutions that are based on an enterprise platform or that already are pre-integrated based on an existing partnership among two or more vendors.

LEARN MORE

References

¹ *The Digital Universe in 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East*, December 2012, sponsored by EMC

² IDC's Worldwide Semiannual Software Tracker, April 2014 (www.idc.com/tracker/showproductinfo.jsp?prod_id=521)

³ Stanley McChrystal, TED presentation, March 2014
(www.ted.com/talks/stanley_mcchrystal_the_military_case_for_sharing_knowledge?utm_source=twitter&source=twitter&utm_medium=social&utm_campaign=ios-share)

⁴ IDC's *Unlocking the Hidden Value of Information Survey*, December 2013 (see Table 1)

⁵ The average number of hours worked in a week by knowledge workers based on IDC's *Unlocking the Hidden Value of Information Survey* was 41.8 hours (December 2013).

⁶ The \$75,000 average annual salary for a knowledge worker and the assumption of 2% annual growth in compensation from 2010 to 2013 are based on data from the U.S. Bureau of Labor Statistics (www.bls.gov/data/#wages and www.bls.gov/news.release/eci.nr0.htm). We used the resulting \$80,000 as the average annual salary of knowledge workers in 2013.

TABLE 1

Knowledge Work Tasks: Percentage of Time Spent and Cost to the Enterprise

	Percentage of Time Spent per Week	Cost per Worker per Year (\$)
Searching/gathering information	16.2	12,938
Communicating with customers/suppliers/partners/colleagues	12.0	9,623
Collaborating with group members and others	10.3	8,208
Consolidating and analyzing information	9.8	7,833
Managing projects	9.1	7,253
Making decisions based on the information you've collected	8.7	6,975
Managing people	6.4	5,155
Publishing information	5.9	4,744
Approving and/or signing documents that others send to you	4.6	3,716
Performing job-based tasks	16.2	12,980
Other	0.7	575
Total	100.0	80,000

n = 2,155

Note: The cost per worker is based on an annual salary of \$80,000. Not all workers perform all tasks; this is an average across all respondents.

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

Knowledge Quotient Calculation

IDC assessed an organization's Knowledge Quotient by evaluating responses to 39 questions in 4 categories: technology, process, socialization, and culture. These categories are defined in the Organizational Knowledge Quotient section of this white paper. Responses to survey questions were based on a scale of 1-5; "don't know" or "not applicable" responses were scored with a 0. The KQ represents the aggregation of these scores.

Survey Demographics

Tables 2-5 display the primary demographic information of IDC's *Unlocking the Hidden Value of Information Survey* respondents.

TABLE 2

Survey Respondents by Country

Country	% of Respondents
United States	64
United Kingdom	12
France	7
Germany	5
Australia	5
Japan	6

n = 2,155

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

TABLE 3

Survey Respondents by Organization Size

Number of Employees	% of Respondents
100–999	38
1,000–4,999	31
5,000+	31

n = 2,155

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

TABLE 4**Survey Respondents by Industry**

	% of Respondents
Financial services	26.4
Healthcare	13.5
Professional services (e.g., business, legal, engineering, management, IT, or Internet-related services)	12.6
Government	8.1
Education	6.6
Manufacturing	6.5
Pharmaceuticals	6.4
Retail/wholesale	4.9
Other	14.9

n = 2,155

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

TABLE 5**Survey Respondents by Business Function**

	% of Respondents
Customer facing (sales, marketing, customer service)	27
Administrative (finance, human resources, legal)	16
Information technology	29
Engineering and R&D	16
Manufacturing and operations	7
Other	5

n = 2,155

Source: IDC's *Unlocking the Hidden Value of Information Survey*, December 2013

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