THE INTRANET OF EVERYWHERE:
Deploying a search-driven architecture to address intranet challenges
Introduction: Helping intranets and human beings get along

The corporate intranet has evolved quite a bit since its inception in the late 1990s. Originally conceived as an internal website that an organization could use to communicate with its employees, today’s successful intranet is a dynamic virtual workplace offering a diversity of tools that encourage employee collaboration, promote engagement, and foster knowledge sharing. From enterprise social networking and group calendaring, to project-level wikis and team productivity sites – the intranets of today are becoming increasingly more capable, and far better at enabling enterprise collaboration.

When a company starts designing an intranet solution, understandably the first major decision they must make is the specific platform upon which the intranet will be built. Innovative vendors like Adobe, Microsoft, and Sitecore – among dozens of others – offer a wide variety of hosted and on-premise options, each with their own unique capabilities and feature sets. Deciding on the platform on which to build an intranet is a business-critical decision, and companies typically make it only after careful analysis and evaluation.

The Human Condition at Work

The purpose of this document is not to compare or evaluate the many intranet solutions on the market today. Instead, we want to shine a light on a challenge organizations face regardless of the intranet solution they ultimately choose. This challenge arises not because of any specific flaws in currently available intranet platforms, but rather because of a simple fact: Knowledge workers are human beings.

And as human beings, we each have our own ways of communicating, sharing ideas, and exchanging knowledge that we prefer over others. We have individual preferences in how we interact, how we organize our thoughts, and the tools we like to use to be productive. As Descartes might have said: I have preferences, therefore I am.

For example, most of us have colleagues who not only use email to communicate, but have turned their inbox into a personal document management system. We might know others who prefer to track their team’s tasks on a shared Google Spreadsheet, but then use an enterprise
social tool like Chatter or Yammer to share documents and information with colleagues. Still others might rely heavily on instant messaging for team collaboration throughout the day, while storing their critical documents in the company’s CRM. The result is a variety of “shadow intranets,” used by various groups independently, and effectively impenetrable by the broader organization.

Such trends contribute to the challenges organizations continue to face when it comes to user adoption of the intranet. Indeed, a 2013 Worldwide Intranet Challenge Survey found that among surveyed organizations, “approximately 90% of staff do not regularly contribute to the intranet, [and] more than 50% never do.”

The “consumerization of IT” and the “BYOD” movements are only accelerating this phenomena. Every day, knowledge workers learn of new cloud-based productivity tools and applications – from personal task managers to online document storage services – and often they bring these new tools with them into their work lives. The list of innovative solutions and tools available to knowledge workers is growing at an accelerating rate, and we shouldn’t expect it (or want it!) to slow down anytime soon.

Consequently, we should anticipate that knowledge workers will continue to integrate preferred tools into their work routines, and will create, record, and share knowledge using these tools...not exclusively on the intranet.

Which brings us to this unavoidable truth: No matter how intuitive and feature-rich your intranet platform, it will never be the only system your knowledge workers use to collaborate. It will never be the single productivity platform, and therefore can never be the single repository of knowledge for your company. Human nature dictates that, realistically, the intranet is everywhere your knowledge workers are.

Embracing Diversity to Achieve (Secure) Productivity

But if we accept this as an unavoidable truth of our modern workplace, what exactly does that mean? In an age when knowledge workers are sharing and exchanging knowledge across a variety of systems and services, how do we make sure this valuable knowledge...
is organized in a way that allows us to re-purpose it, memorialize it, and learn from it? How do we avoid the unnecessary duplication of work? How do we ensure everyone has access to the latest, most up-to-date version of specific information? How do we meet our regulatory and compliance obligations? How do we make sure our team members can identify (and connect with) subject matter experts that might be able to assist on a particular task, project, or customer issue?

How do we embrace an era of the Intranet of Everywhere, while making sure we are managing and using our collective enterprise knowledge in the most efficient way? How, subsequently, do we avoid realizing the predictions of the analyst firm Gartner, which stated in a recent report that “by 2017, 33 percent of Fortune 100 organizations will experience an information crisis, due to their inability to effectively value, govern and trust their enterprise information.”

For most organizations, the answer is to deploy an intelligent, unified search-driven architecture. A successful search architecture can securely connect, consolidate, and contextualize all of the diverse streams of information being created by your knowledge workers, across all of their preferred systems and tools. It can normalize and enrich this diverse content, making it more easily findable and actionable by others. It can promote engagement by offering each user their own intuitive search interface, optimized for their specific job role or business unit, and accessible wherever the knowledge worker needs it...whether that is within the intranet’s UI itself, integrated into their work computer desktop, through a web browser, or on their mobile device. (Or usually on all four.)

**Search-Driven Knowledge Integration**

A search-driven architecture can serve as the “fabric” that integrates your diverse channels of knowledge, can help organize and inter-relate that knowledge, and can make it readily and securely available to others in the course of their work. It provides access to the entirety of knowledge your organization has created (represented graphically in Figure 1 as both the “head” and the “long tail” of knowledge.)

Such an approach, discussed in greater detail in a recent Coveo white paper titled “The Long Tail of Enterprise Knowledge” maps well to Forrester Research’s vision of the future “Engagement Workplace.”

As they note in a recent report: “What makes these next-generation portal strategies different is the goal of unifying the disparate investments [systems and tools] into a single, contextual user experience for workers.” Forrester further explains that “while all of these functions...
will need to come together in an integrated user experience, they will likely come from different solutions and even different vendors.”

Throughout the remainder of this brief, we’ll focus on what a successful search-driven architecture looks like, and discuss how such an architecture can help address the most common complaints knowledge workers have when it comes to intranets and collaboration.

**Figure 1: The Intranet of Everywhere, the knowledge worker’s virtual workplace of the future**

- **Cutoff point beyond which:**
  - IT can no longer manage, maintain, integrate and consolidate systems
  - People need to go beyond their first level network, what they know or can easily access

- **Knowledge Worker**
  - Uses multiple devices for work
  - Collaborates with experts, shares/co-creates knowledge

- **Colleagues/Contractors/Partners/Customers**

**The long tail of enterprise knowledge and tools**

- **20% of knowledge**
  - Easy to reach but less relevant to context

- **80% of knowledge**
  - Difficult to reach but contextually relevant
A search-driven intranet of everywhere: Key features

To make Forrester’s “Engagement Workplace” a reality, a search-driven architecture needs to be able to deliver on four critical capabilities: It must **Connect, Consolidate, Contextualize,** and **Engage.** Let’s explore what each of these mean:

**Connect**

First and foremost, a search-driven Intranet of Everywhere must unify the information residing in all of the various systems and tools being used by knowledge workers. Whatever on-premise and cloud-based systems team members use to collaborate and communicate – including document management systems, messaging platforms, ERP, WCM, CRM, enterprise social networking systems, network file shares, and instant messaging services – should all become a part of the search-driven architecture. An optimal solution will utilize secure indexing connectors to crawl the content of these systems, and unify this content within a single search index. The connectors utilized should be designed to integrate easily with the source system, allow for swift scoping and configuration, and must not hinder the performance of the source system itself. Most importantly, the connectors used must not only index the content within the system, but also the securities (i.e. document and user-level permissions) for each piece of content as well.

**Consolidate**

Once all of the content from all systems and sources has been crawled and distilled into a unified index, a successful search solution will analyze the diverse content within to understand as much as it can about the “Who, What, When, Where, and Why” for each piece of content. The solution’s text analytics engine will iterate through every document, every email correspondence, every record, and every social conversation, to identify the people and places referenced (named entity extraction), to assess precisely what the content is about (theme extraction), and – if appropriate – to evaluate the overall tone of the content (sentiment extraction). Additionally, the solution will evaluate the content to identify subject-matter experts based upon the documents they authored or collaborated upon, the correspondence and conversations they were a part of, and what records/cases they were involved in.
Metadata that details all of these insights is then automatically assigned to the content within the index – adding structure to previously unstructured and unrelated data. The result is a unified index that has been enriched with information about not only the “Who, What, When, Where, and Why” of each piece of content, but also a granular and real-time understanding of the various subject-matter experts within the organization.

**Contextualize**

A search-driven Intranet of Everywhere provides users with an intuitive way to discover and find relevant knowledge, regardless of where they are and what device they are using. A successful solution, then, provides each knowledge worker with an interface that empowers them to search and explore content in a manner suited to their specific job role and preferences. The solution not only honors the user’s permission and security levels – across all of the various systems and tools she uses, in real-time – but also takes into account attributes like the user’s role and geo-location to influence how search results are displayed and navigated.

For example, a knowledge worker in an engineering consultancy managing a multi-site project and collaborating with colleagues located around the globe might prefer a console configured specifically for her

---

**Figure 2:** Besides the ability to find and filter content, successful search empowers knowledge workers to find and discover experts who can help based on the work they do rather than static profiles.
projects, with search results that display specific types of technical documents on the top of the page, each with an HTML-preview of the document itself (role-specific) and with information related to the physical location/site she is currently visiting appearing at the top of her search results (location-specific).

**Engage**

Finally – in keeping with the spirit of the Intranet of Everywhere – a successful search solution fosters engagement and collaboration wherever and whenever your knowledge workers need it. For example, some knowledge workers might want to be able to perform a unified search from directly within the user interface of their corporate intranet. (On SharePoint, for example.) Alternatively, some knowledge workers might wish to access this powerful search capability via a dedicated widget or application on their work desktop, while still others might want to use their favorite web browser. A successful solution will provide a robust library of web parts and templates, so it can be easily and swiftly delivered to users in the manner most helpful to them.

Importantly, any search-driven solution that supports an Intranet of Everywhere must fully support mobile. An optimal solution enables Responsive Design and ships with pre-configured, easy to deploy templates for the most popular mobile operating systems, including iOS and Android.
Common Intranet Complaints and How Search Solves Them

**Complaint #1: “I Can’t Find What I’m Looking For”**

According to a recent LinkedIn poll, 26% of respondents cited ease of finding information as a priority area of improvement for their corporate intranets. This is hardly news for the average knowledge worker who spends 2.3 hours each week searching for – but not finding – documents, and another two hours recreating them.

The issue of “findability” (both not being able to find content and not even knowing where to look) is typically caused by three factors:

- The system or repository where the content resides is not included in the search solution
- The solution does not support the full breadth of content file types and formats
- The content itself is not appropriately tagged with the metadata needed to make it findable

Let’s talk about each factor, and explore why and how an intelligent search solution can overcome them.

First and foremost, knowledge workers cannot find content when it is not a part of the search solution.

Typically, organizations will use the native search capabilities of their intranet platform (the search boxes built into SharePoint or Documentum, for example). Unfortunately, these native solutions only enable indexing of content that resides within that system. With the rise of the Intranet of Everywhere, it is easy to see why these native search capabilities typically fail. And even if the search service could crawl the content residing in external systems, they would fail simply because they do not support all the necessary data types and formats. SharePoint’s native search capabilities, for example, can only index Microsoft Office files, PDF documents, and SharePoint List items. All of the content residing in other formats – be it audio, video, layered files, etc. – is effectively “invisible” to the search engine.

But even if the search service did include the content your knowledge workers want to find (in a format the engine could understand), it would likely still struggle to surface that content to users when they need it, because it is poorly tagged, with no metadata that explains the “What, Who, When, Where, and Why” of the content itself. This is because when employees are tasked with manually tagging and categorizing content,
A Note on Federated Search

Today, many of the popular intranet and collaboration platforms on the market will offer some form of “federated search” capability. Unfortunately, a federated search approach does not help us overcome the challenge of “findability” we described above for a number of reasons. First let’s review briefly what a federated search is:

When conducting a federated search, instead of the user’s query being sent to a single, unified search index (i.e. an index that contains content from all the company’s various systems and sources), the query itself is actually replicated and sent out to each individual search index within each of the company’s different enterprise systems. The results of the query are then returned and presented to the user in the form of multiple search result sets.

Because federated search does not utilize a single, unified index, the intelligent text analytics we discussed in the “Contextualize” section of this brief (analytics that are critical to understanding the “Who, What, When, Where, and Why” of each piece of content) cannot be performed on the entirety of the company’s data. This means that documents cannot be automatically enriched with accurate and normalized metadata...the key to making it findable.

The second challenge a federated search approach poses has to do with architecture and management. Like any engine, a search solution’s relevance engine needs to be tuned on a regular basis, to ensure it is performing well and adapting to knowledge workers’ evolving needs and preferences. (A truly effective solution will not only make it easy and intuitive for administrators to tune, but will also leverage user behavior and analytics to tune itself.) Using a federated search model, the relevance engine of the search engine within each separate system must be constantly tuned. So, if any of these engines is poorly configured (or if it just an intrinsically poor search engine in the first place, as is the case with many intranet platforms) getting relevant results will prove challenging. (Just as a chain is only as strong as its weakest link, so too is a federated search solution at the mercy of the weakest search engine in the company.)
inconsistencies inevitably occur due to some mix of manual error, laziness, or an inadequate understanding of corporate tagging processes. This dramatically and adversely affects the quality of search results, as content that is relevant but not appropriately tagged is – once again – rendered effectively invisible. Setting aside time for employee training and enforcement, though well intended, usually only meets with limited success, as knowledge workers are not focused (or incentivized) to make sure their knowledge assets are appropriately tagged and easily findable.

To overcome these findability challenges, a successful search solution must deliver the following features:

- **Support for a large variety of systems and file formats**, so that all of the organization’s content (along with their item-level security attributes) can be crawled and distilled within a unified index. To do so, the solution must utilize fully productized connectors that enable the precise scoping of crawls, and the swift mapping of securities to ensure users only see the content they are entitled to see at query-time.

- **Provide advanced text analytics and data enrichment capabilities** to develop a full awareness of the “Who, What, When, Where, and Why” of each piece of content. This includes not only the ability to understand what the content is about, but also to identify individuals within the organization who are experts on various topics, based upon their actual work-product contributions.

A successful search solution should be able to automatically enrich the company’s diverse content with enterprise-approved metadata, and should easily integrate with (and utilize) any taxonomy and term store used by the company. Even more, the solution should

---

**Majedie Asset Management Case Study**

“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.”

—Simon Hazlitt, Majedie Asset Management

Gain insights into how Majedie Asset Management uses Coveo to create a more sophisticated and structured cataloging system, and enable powerful, single-point access to relevant information across a multitude of cloud-based repositories.
be able to auto-generate a taxonomy based upon its analysis of the content, should administrators wish to deploy an enterprise taxonomy without the burden of manually creating one.

Deliver a compelling, role-specific search interface so that users can intuitively and quickly explore, filter, and sort their search results. A knowledge worker within an R&D department who regularly works on highly technical projects with colleagues located around the globe, might find relevant content more efficiently if she is provided an intuitive tool to filter her search results by both “Project Number” and “Project Lead Location.” A sales representative at the same company, however, might be able to find relevant content more quickly if provided a tool to quickly filter his results by “Customer Industry” and “Deal Close Date.” A search experience that is designed with the specific user in mind dramatically improves that likelihood the user will find what he or she is looking for.

Harris Corporation Case Study

“We have many government contracts and often privileges are granted on a need-to-know basis. Before Coveo, there were many systems we did not index because we could not ensure the adherence to existing security.”

—Colleen Yoh, Harris Corporation

Find out how Harris Corporation, an international communications and information technology company serving government and commercial markets, uses Coveo to maximize value on existing knowledge assets while maintaining existing security models.

Download the Case Study
Complaint #2: “I Think I’ve Found What I Need, But Is It Current?”

Sometimes knowledge workers might not have trouble finding content that looks helpful and relevant, but rather the trouble comes when trying to figure out if the content is actually up-to-date or accurate. Perhaps a user needs to refer to a document about her business unit’s standard operating procedures for a specific manufacturing process, but the latest version of the file is sitting in the team’s shared Google Drive (and was not added to their team site on the intranet). Or perhaps a knowledge worker needs to be aware of the very latest correspondence and communications with a specific customer, but the CRM only lists and summarizes the phone and email communications the company has had. What this user does not realize is that the customer had an extensive conversation with one of the company’s customer service agents via their website’s live chat. And because neither the intranet nor the CRM indexes the company’s live chat engagements, the knowledge worker needing to understand the latest correspondence with the customer would be left in the dark.

Such scenarios manifest every day within organizations because content creators are understandably organizing and storing their assets in the systems they find most useful for them and their teams. This alone would not be a problem, but if a unified search architecture has not been deployed, trouble starts. And when a knowledge worker can’t find the information she needs (or can’t trust that it is accurate and up-to-date), it continues a negatively reinforcing cycle: As fewer employees make use of the intranet – because they have difficulty finding what they need – the likelihood that they will make the effort to feed their new content into such a system is reduced. Consequently, user adoption suffers.

Not surprisingly, employees do think that it is valuable for companies to use the intranet to manage a small library of “Qualified” or “Vetted” content, typically including...
relatively static content that is infrequently updated, such as HR policies, tax and holiday forms, and internal “how to guides.” (See Figure 3)

For this reason, the corporate intranet can and will remain a valuable “go-to” resource for knowledge workers to find their company’s Qualified/Vetted content. But typically, this is not the type of content knowledge workers need in order to perform their jobs, so the intranet itself can never be relied upon exclusively. Fortunately, a successful search-driven architecture will integrate all of the Qualified/Vetted content that is stored within the intranet into its unified index (along with the content from the various other systems and applications knowledge workers use.)

The corporate intranet has played and will continue to play a key role in the knowledge worker’s professional life. But in an era marked by increasingly empowered and mobile knowledge workers – each utilizing an ever wider range of tools, applications, and communication channels to get their job done – the conventional intranet alone

![Figure 3: User response to the types of content that make the intranet valuable](image)


Coveo Solution Brief - 14
is no longer able to serve as the exclusive information resource and productivity hub. A vibrant and dynamic workplace that supports employee collaboration, engagement and knowledge management must embrace the Intranet of Everywhere, by deploying an intelligent search-driven architecture that will connect, consolidate, and contextualize the company’s dynamic knowledge resources in real-time, while providing intuitive, role-specific tools that empower users to engage with this knowledge effectively wherever they are.

Notes


4 Coveo, “Why Traditional Knowledge Management Initiatives Fail to Enable the Long Tail of Collective Enterprise Knowledge,” 2014


7 IDC, “Bridging the Information Worker Productivity Gap: New Challenges and Opportunities for IT,” Melissa Webster, 2012

About Coveo

Coveo makes companies and websites more relevant and responsive by providing technology that delivers in real time the most relevant, context-aware information for every employee, every customer and every website visitor.

Coveo’s transformational technology has been recognized as the most complete, end-to-end Search & Relevance platform available today. Coveo takes search to a new, more relevant level by securely connecting with and harnessing an organization’s big, fragmented data from any combination of cloud, social, and on-premise systems. The Coveo Advanced Relevance Engine injects the most relevant knowledge into the context of every user, focusing on three business areas to:

- Radically boost Knowledge Management initiatives by making all of its collective knowledge easily accessible & relevant, so that all employees can take the best actions;
- Inject more relevant knowledge into customer service and sales interactions; and
- Personalize online customer experiences within high-end websites and communities.

Coveo is a strategic partner of several leading software companies such as Salesforce.com and Sitecore, and has been recognized as a visionary by Gartner in its 2013 Magic Quadrant. Among Coveo customers are leading organizations such as Lockheed Martin, Sea World Parks & Entertainment, Jordan’s Furniture, L’Oreal, Brookings Institution, and YUM! Brands. For more information, visit www.coveo.com, follow us on the Coveo blog, LinkedIn, Twitter, Facebook and YouTube.

Contact Us

www.coveo.com
info@coveo.com

United States
San Mateo, CA
+1.800.635.5476

Canada
Quebec City, QC, Canada
+1.418.263.1111

Europe (EMEA)
Schiphol-Rijk, The Netherlands
+31 (0)20 658 6334