



SolcaraSolSearch
Connecting information
with integrated search

Effective integrated search strategies

Whitepaper



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Integrated Search is the practice of providing specific and targeted searching across all essential information resources. It ensures that users know what they are searching and get the results they need and expect in a consistent and easy to use format.

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Introduction

The explosion in the availability of online information combined with the need to seamlessly access content across all internal resources has left many organisations struggling to deliver a fully integrated search solution. The resultant frustration of users is evident, especially when they are presented with an expanding array of resources each with their own unique approach to access and searching.

The demand for a 'Google-like' search facility that delivers the right results from the right resources at the right time is one that is heard across all types of organisation. This sounds simple, but the reality is far from it. Google and similar products rely on large scale content capture and indexing, a fact that many end users fail to appreciate; they simply want the information at their fingertips.

Many Information Management and IT departments are now re-evaluating their search strategies and in doing this they are actively looking at both Enterprise and Federated search solutions. This paper outlines why an effective and integrated search strategy is needed and explores the two often competing but as I will show are in fact complementary approaches to delivering the right solution.

The need for an effective search strategy

Ineffective search strategies can have a serious impact on the efficiency and competitiveness of your organisation. Consider the October 2006 report from the Butler Group (<http://www.butlergroup.com/>) titled: *"Enterprise Search and Retrieval"*. This concluded that *"ineffective search and discovery strategies are hampering business competitiveness, impairing service delivery and putting companies at risk."* Specifically, the research firm contends that as much as 10% of a company's salary costs is *"frittered away"* as employees scramble to find adequate and accurate information to fulfil their roles and complete assigned tasks.

For knowledge intensive businesses such as law firms, financial services organisations, government, management consultancy and others the reality can be worse than this report highlights as information and knowledge is the bedrock of these organisations. Consider the following within your own organisation;

- ▶ How long does it take users to find information when they don't know where to start looking? The content they require may be in the Document Management System, a specific database, the library system or within an online subscription or free resource. The information may even be available from multiple systems and be presented in multiple formats.
- ▶ When users do know where to look how much time is spent by them and support staff searching the relevant databases and asking questions of others that may have been answered already?
- ▶ What happens after the required information is located? It may be printed and filed, a link added to a favourites list on a web browser or an email sent to a colleague with the details. Finding the same information in the future can pose problems and waste time.
- ▶ Finally, how much time is spent by technical, information support and IT managing content and organising it so that it is easy to find?



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Given the facts, the huge content volumes and the pressures surrounding effective information management and searching no organisation, can, or should even attempt to, capture, organise and index all of the material that they need and use on a day to day basis. If you do plan to take this approach consider the following:

“We are now creating more digital information than we can store”

Source: EMC Executive VP Mark Lewis

“161 billion gigabytes of digital content created in 2006, 231 gigabytes for every person in the USA today”

Source: USA Today – March 2007

The specifics in terms of content volumes for your organisation will be unique but rest assured the volume and complexity of the information you use is growing at a rapid rate year on year.

Enterprise Search vs. Federated Search

Before you can really understand what is meant by an integrated search strategy it is best to review what is meant by the terms **Enterprise** and **Federated** search.

Enterprise Search is the practice of identifying and enabling specific content across the enterprise to be indexed, searched, and displayed to authorized users.

Source: Wikipedia

Traditionally the business objective of providing users with **one stop search** has been approached as a content consolidation exercise. Organisations purchase and deploy an enterprise search vendor's software and implement a number of distinct information feeds into the one consolidated index. Examples of such feeds include file-system and web-site spidering (crawling and indexing), e-mail public folder indexing, relational database indexing, Document Management System integrations and much more.

This approach brings a high cost of ownership and deployment/management and whilst providing a partial one stop search capability it brings with it certain issues that include latency of information (the index is only as current as the last indexing crawl) and major network and infrastructure expenditure.

The impact of implementing such an enterprise level solution include the need for application upgrades and/or complete replacement, changes to existing working practices and the management of major infrastructure process changes including high availability and disaster recovery of the proprietary index(es). For these reasons major corporate content consolidation projects take many man months and in many cases years to implement. When completed, this type of solution is never 100% comprehensive as not all content you access can be captured and indexed in this way, hence the project is never truly complete and the real costs are very hard to calculate.

Where enterprise search solutions are implemented successfully they can deliver significant benefits for the organisation. However, one myth relating to enterprise search is that the content that exists in your many disparate systems cannot be effectively searched unless it is re-indexed by the new and often expensive enterprise search software. This is not always the case and a careful review of all internal systems and their existing content indexes is recommended prior to deployment of any enterprise search software.



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Federated Search is the simultaneous search of multiple online databases ... It is also often referred to as a portal, as opposed to simply a Web-based search engine.

Source: Wikipedia

Federated search solutions actively seek to solve the business requirement for **one stop search** by configuring a range of connectors to the required content resources including internal databases, intranets and online information services. By doing this the software can provide a single search capability to multiple content resources quickly, provided the content to be searched is indexed within the native systems. Both the cost of the initial ownership and the ongoing maintenance costs are relatively low, require few changes in working practice and only small infrastructure investments. Couple this with the advantage of real-time search and no index latency and you have a potential winning solution to the one stop search requirement.

Federated search has often been described, by some IT Directors in particular, as an inferior approach to solving the problems associated with delivering integrated search solutions. This is not a true reflection of what the technology is can now deliver. Federated search is quite different to the traditional approach that resolves around document capture and indexing. It is an approach that is designed to complement and build upon your existing investments in Document Management, Enterprise Search and online information services.

The Landscape

All organisations maintain and use different information and database management systems for different purposes and this is not going to change anytime soon. Each system is designed with a specific objective in mind and in many cases these systems are not effectively linked together or they can be perceived as being complex or difficult to operate for the occasional user.

A not untypical organisation might have the following systems accessed by users on a daily basis:

Internal: Library, Document Management, Network File System, Intranet, CRM, Email etc

Online: Online information/subscription services, these may include legal, news and current awareness services or they may include one or more search services such as Google, Yahoo, MSN etc

In some cases the different online resources that are used are competing head to head with competitor products in their own market. Each new release to these services adds functionality, increases content volumes and in some cases increases complexity for the user. Keeping pace with the changing interfaces and the different approaches is becoming more and more difficult and however good or poor an interface, when users get used to it any change is considered to be a disruption and one that is not always appreciated.

The new breed of knowledge worker is much more technically aware but for many the choice on what resource to use and when to use it can be daunting. The result is that they fall back on their preferred resources or in some cases resort to searching online with services such as Google. The results of this approach can, at best, be inconsistent or, at worst, extremely costly to the organisation.



Considering Enterprise Search?

When considering an approach that relies upon content from different systems, internal and online, being captured and re-indexed it is vital to consider the following:

The content that is to be indexed

- ▶ Do you produce, own and manage the content that is to be indexed?
- ▶ Is the content dynamic and changing on an hourly, daily, weekly or other basis?
- ▶ Is the content secured within the existing systems and will this security be fully honoured/supported by the selected indexing technology?
- ▶ What data volumes are involved and what can be supported, 100's of MB's, 100's of GB's or more?
- ▶ Will users get different results from the new enterprise search index compared to searching the content directly using the existing native interface? Is this satisfactory to your organisation?
- ▶ Are agreements in place to index external content, specifically if subscription content is to be considered ? What do these agreements cost the organisation?

The infrastructure required

- ▶ How many servers will be required to support the indexes that you plan to create?
- ▶ Who will define, create and manage the indexes that you require?
- ▶ How will the indexes be backed up and restored? Will this affect your current backup/restore policies?
- ▶ What happens when the online service, internal database or content being indexed is restructured, moved or altered in any way?
- ▶ What is the cost to the firm in the event the indexes are inaccessible for a period of time or if they are simply out of step with the live content?
- ▶ What additional bandwidth is required to support indexing and how regularly are indexes refreshed and updated?

Before embarking on an approach that requires content to be re-indexed it is sensible to carefully consider the content in question and review if the existing indexes can be used. If these indexes are not fit for purpose you need to question why and discover if future product/service upgrades will resolve these issues for you.

Where a resource, subscription service or even a web site has an existing index it is generally best to ensure that you maximise the value of what is in place before deciding to re-index. If you subscribe to content ensure you maximise the value of your subscription and discuss how to improve the service with the content provider before embarking on an approach that requires you to start taking ownership of the index.



Considering Federated Search?

Federated search technologies are designed to sit above existing applications, databases, content indexes and web services. They support the searching of the existing indexes held within these disparate systems and return results that are consistent with those returned when searching the different systems directly. Where you have decided to re-index content from systems or web sites that do not provide a useful or usable index a federated search solution can integrate searching of this additional index with those resources that are already searchable.

When deploying a federated search solution careful consideration needs to be given to the following:

The content that is to be searched

- ▶ What content is to be searched and are there different requirements for the different workgroups, departments, offices, regions that you operate in?
- ▶ Is there an effective search interface and index available?
- ▶ Is the content secured within the existing systems and can the federated search tool search the system as a named user?
- ▶ Can the software be configured to target searches to specific sub-sections of content and can searches be further targeted to specific fields within the individual content resources?
- ▶ Does the supplier of the software have established relationships with the primary resources that you will need access to?
- ▶ What will be the full cost of deployment, infrastructure, software, consultancy and other fees?

Infrastructure

- ▶ Infrastructure is less of an issue for a federated search solution as the technology is typically deployed on a single server with no requirement to create or manage indexes.

From experience of having implemented both enterprise and federated search solutions it is inevitable that a hybrid approach is what is required for most organisations. Content that you produce, control and manage needs to be indexed effectively and where this is not possible or achievable in your existing systems additional third party indexing technology needs to be considered. For content that you do not produce, control or manage a federated search approach is recommended to minimise risk, maximise existing investments and deliver the solution quickly and cost effectively. The result, when done well, is an effective integrated search strategy for the organisation.



An Integrated Search Strategy

In delivering a truly Integrated Search solution you need to focus primarily on the business requirements and what your users need as opposed to technology and what specific features one supplier offers over another.

Integrated Search is the practice of providing specific and targeted searching across all essential information resources. It ensures that users know what they are searching and get the results they need and expect in a consistent and easy to use format.

Before you can start the process of designing and implementing an integrated search solution it is important that you consider the following:

- ▶ **Define** the key information resources for each work group / department / office / region
- ▶ **Organise** resources into different groupings/collections as appropriate to the needs of each Group
- ▶ **Prioritise** resources within the different groupings such that the higher value resources are accessible/presented first
- ▶ **Simplify** the design of the search interface such that it can simultaneously search all necessary resources with minimal effort, returning results in the same order as the native resource where appropriate and possible
- ▶ **Maximise** reuse of content and previous searches through effective personalisation such as saved searches, result bookmarks and content collections that can be shared across the organisation.

Having considered these points you are now ready to consider what technologies are required and how they should be deployed.

Case Study

A major UK law firm, Ashurst, with a team of over 190 partners in 12 countries, is an example of a organisation that have taken the bull by the horns when it comes to delivering integrated search across the firm. The solution that they have developed focuses on the various collections of internally managed content. These resources are searched as a single entity but the results are presented segmented by document type and office. From the results page of the internally managed resources the ability to extend the search to incorporate specific online legal resources is provided.

In the case of Ashurst the online resources are organised by type, i.e. **Legislation, Case Law** and **Commentary**. An example of the web browser interface that is presented to lawyers is shown below.



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joint venture [Go to Advanced Search](#) [? Online help](#) [Print this page](#) [Print all pages](#)

Searched for "joint venture" Page 2 of 25 Go to page 2

London (246) Madrid (4) Paris (7) Germany (6) Brussels (0) Milan (0) Stockholm (0)

Sort by: Document Type	Date	Title	Abstract	Ref	Link
<input type="checkbox"/> Standard Document (46) <input type="checkbox"/> Practice Briefing Note (4) <input type="checkbox"/> Case Briefing Note (2) <input type="checkbox"/> Advice Document (8) <input type="checkbox"/> Precedent (60) <input type="checkbox"/> Counsels Opinion (8) <input type="checkbox"/> Client Briefing (16)	02/02/2007	Shareholders' Agreement for Newco Joint Venture Company	Standard Document. Shareholders' agreement for newco joint venture company between A and B, as joint owners of limited liability company (joint venture), relating to the conduct of their respective rights as equal shareholders and to the conduct of t...	20/CO/003 5822	
	01/02/2007	International Investor Series (No.10): Private Equity Transactions: Overview of a Buyout	Client Briefing. This client briefing is the tenth client briefing in the International Investor Series and deals with private equity transactions, mainly buy-outs in England and Wales. It briefly deals with the parties, the process of a buy-out, fi...	01/LMG/CO/10 9008033	
	01/02/2007	International Investor Series (No.5): Takeovers - A Guide to the Legal and Regulatory Aspects of Public Takeovers in the United Kingdom	Client Briefing. This briefing has been updated to reflect the post 1 July 2005 regime. It provides a guide to the legal and regulatory aspects of public takeovers in the United Kingdom and deals with the City Code on Takeovers and Mergers, the rule...	01/LMG/CO/05 9004016	

External Resources

joint venture

Legislation (Titles) [?](#)
 Case Law (Parties) [?](#)
 Commentary [?](#)

Internal Know How Results

In the above approach it is easy to see how materials from internal sources are returned, grouped by type (shown on the left) and by office (individual tabs). The bottom left of the results page enables the search to be broadened to include all required online Legislation (searching by title), Case Law (searching by party name) and Commentary resources. The result is a solution that puts the fee earners in control of what they search and how they search. An example of the results from a set of external resources, including LexisNexis and CLI, is shown below.



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External Resources - Results Print

Searched for "joint venture" in "Commentary" Back to Internal Resources

External Results (441)

View by: Sources Show Summaries

<input type="checkbox"/> PLC Financial Services (21)	Laws of England (Library for req) Showing 5 of top 50 results Show details Show all
<input type="checkbox"/> LNB - Halsbury's Laws of England (Library for reg) (50)	1. 84. Business assets; shares.
<input type="checkbox"/> CLI - Legal Journals Index (see (?) for login) (50)	2. 88. Periods not to count for taper relief purposes.
<input type="checkbox"/> Lawtel EU - Commentary (50)	3. 90. Qualifying shareholdings in joint venture companies and joint enterprise companies.
<input type="checkbox"/> Europa - Parliamentary Questions (12)	4. 175. Requirements relating to the investing company.
<input type="checkbox"/> Library Catalogue (8)	5. 1258. Joint ventures.
View Selected	CLI - Legal Journals Index (see (?) for login) Showing 5 of top 50 results Show details Show all
External Resources	1. Kemira GrowHow Oyj/Terra Industries Inc
joint venture	2. No laughing matter
<input type="checkbox"/> Legislation (Titles) ?	3. Remedies: joint venture liabilities
<input type="checkbox"/> Case Law (Parties) ?	4. Fiduciary duties of shareholders in joint venture companies
<input checked="" type="checkbox"/> Commentary ?	5. Joint venture - option: whether validly exercised - constructive trust - whether conduct of parties gave rise to implication of trust on Pallant v Morgan principles - summary judgement
Search	Lawtel EU - Commentary Showing 5 of top 50 results Show details Show all

External resources results

At Ashurst the internal content is captured, organised and indexed using systems appropriate to this task and selected by the firm. The Know How intranet system as developed by Ashurst has proved to be extremely popular with users. An internal survey indicated a 90 per cent approval rating by users.

The external search capability uses a federated approach built upon the [Solcara SolSearch](http://www.solcarasolsearch.com), www.solcarasolsearch.com product and the complete solution is an integral part of the firm's intranet.



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What does the future hold?

Content volumes will continue to expand, internal and online systems will become more sophisticated and further mergers between organisations will result in a broader array of internal and online systems. Given this situation, new thinking will be required on how to deliver effective and integrated search solutions.

The semantic web (http://en.wikipedia.org/wiki/Semantic_Web) is evolving to deliver an approach that will be adopted by more and more organisations. It aims to add meaning to content such that it can be exposed to different products; the result is the ability for content to be discovered without the need for the user to understand the underlying technologies or even specify where they wish to search. Exploiting the potential of the semantic web and applying the same approach to all internal and online information systems will in the near future deliver significant additional benefits to those organisations that embrace it.

A new generation of federated search technologies are also emerging and future knowledge management and search strategies are being reviewed as part of the EU funded X-Media project (<http://www.x-media-project.org/>). The outcome will be to make it possible to publish in a semantically reusable way the context of a firm's internal content along with the content itself. For example, each document in your Document Management System could be described in a format to make it available to services able to share and exploit semantic content. End users will no longer need to know where to search and instead simply concentrate on what to search. After all, end users care little about the technology being used to support an effective search strategy; they simply want to ensure that they find what they need from a trusted resource when they need it.