



Building a Business Case for Enterprise Search – the Role of the CIO

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About the author

[Martin White](#) has gained international reputation over the last twenty years for his understanding of how to manage the information assets of organisations, ranging from the United Nations and the World Bank to some of the world's leading pharmaceutical companies. Many of his clients have been multi-national organisations with complex information management and information discovery challenges. Since founding Intranet Focus Ltd in 1999 he has worked on over 100 search-related projects. He is the author of eight books on information management, including *Making Search Work* in 2008 and the second edition of [Enterprise Search](#) in 2015. A book on *Managing the Enterprise Search Experience* is scheduled for publication in 2021.

Martin has been a Visiting Professor at the Information School, University of Sheffield, since 2002, specialising in information management and information retrieval. He has been a member of the Editorial Board of the *International Journal of Information Management* since 1997 and serves on the Committee of the Information Retrieval Specialist Group of the British Computer Society.

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Executive summary

The Covid-19 pandemic will have a significant impact on business strategy and operations for the foreseeable future. Organisations have to be able to respond quickly and authoritatively to new challenges and to new opportunities, doing so with employees working primarily from home and facing severe restrictions on meeting together and travelling between office locations. Although they can be networked together with video and social technologies they also need to be networked to the information assets of the organisation. These information assets are not just internal documents but also specialized external information services providing intelligence on changes in markets and the activities of customers and competitors.

In the enterprise employees write documents primarily for their colleagues and immediate managers. They rarely have a wider enough picture of the operations and interests of the enterprise to be able to alert others to what they have written. It is not just documents that contain information of value but also a wide range of enterprise applications. The primary challenge for all employees is being able to find the information they need as a matter of urgency without knowing in which repository or application it is stored.

This is where enterprise search becomes business-critical.

The low adoption of enterprise search is largely because the CIO finds it difficult to make a business case. In the past there was a tendency to focus on 'productivity' as the business case but that is very difficult to measure. At the present time the best way to justify an investment in a scalable and extensible enterprise search application is to show the Board the way in which effective access to internal and external information can make a measurable reduction in business risk.

To make this case the CIO needs to work closely with line-of-business managers across the enterprise. All of them face a common problem in making effective use of information assets but do not have a common platform to bring these to the attention of each other and the CIO, and then up to the Board for approval. Invariably they cannot define with certainty what the employees they are responsible for need in terms of information, so there is an urgent requirement to listen to and collate these requirements. In organisations which have highly mature enterprise search applications there will always be a search support team that are constantly assessing these needs and working with the CIO and the search application vendor to make the best possible use of the technology.

This report sets out the core characteristics of enterprise search applications and the way in which a business case can be made. In making the business case the CIO takes on full responsibility for information quality, and in just three months of focused effort has the opportunity to make an immediate, but lasting, impact on ensuring that the organisation is able to take advantage of the business opportunities that are emerging ahead of the actions being taken by competitors.

Note – this report has been commissioned by Sinequa but the views expressed are those of the author.

1. Information is a business-critical asset

Asset management is a very important element of effective business management. Members of the Board are concerned about whether assets such as buildings and equipment are being used to their maximum potential and of course the financial assets of the company are kept under very close scrutiny. The HR Director is tasked with ensuring that the company has skilled and experienced employees and of course at present all the members of the Board are focused in on ensuring that a hybrid of-office-Work From Home (WFH) environment is working as well as it can. All business assets except for one are reflected in the balance sheet of the company, and all are under the direct management of the Board.

The exception is information!

There is no one on the Board with the explicit responsibility for ensuring that every employee has access to information of the highest level of quality to ensure that the decisions they make are in the best interests of the company and will help them progress in their careers.

Does this matter?

2. Managing business risk

All annual reports include a substantial section on the risks that the company faces in delivering on its commitments to its shareholders. Indeed the Board has a clear duty to manage these risks and to minimize them as far as they are able. Most of these risks are information related, not just with respect to internal information but also external information on markets, competitors, technologies and changes in regulatory requirements.

Among the 23 risks identified by a global pharmaceutical company in its latest annual report were

- Product liability claims not being analysed in enough depth
- Changes in regulations and standards across global markets needing to be monitored
- A failure to take advantage of past research which now seems to have new possibilities
- An inability to assess the potential benefits of acquisitions and divestments
- Inadequate management of decision making with partner organisations
- The impact of Brexit on global, not just EU, operations
- Failures to identify new business markets and technical opportunities
- Higher than forecast acquisition implementation costs.

Managing these risks requires immediate access to global information in a range of languages. This should be in the scope of the Chief Information Officer, extending their remit for creating a digital workplace beyond implementing technology to managing the information which inevitably pervades the workplace.

3. Managing enterprise information

In the course of a working day every employee will be in receipt of reports on business performance from a wide range of enterprise applications, as well as dozens of emails and enterprise social media messages. A significant proportion of their time will be spent in analysing this information, collating it into yet more reports and circulating it to their colleagues.

So what is the problem?

Especially at present businesses are having to rewrite all aspects of their strategies to cope with the challenges and capitalize on the opportunities of doing business in a pandemic, a situation that could extend well into 2021. Enterprise applications, such as an ERP or CMS, were designed for a 'business as normal' situation. As a result it is likely that employees do not have access to the information they need in these extraordinary times.

They face two challenges. They have no idea if the information they need exists and they do not know where to begin to find it.

In a recent survey of 1400 organisations world-wide carried out by [M-Files](#)

- 46% of respondents said it was challenging to find the right information.
- 68% stated that it was difficult to find the right version of a document.
- Of those who have found it difficult, more than eight in ten (83%) say that they've had to recreate a document which already existed because they were unable to find it on their corporate network.
- 91% said that their job would be easier if they could access the most current version of a document without having to worry about which system or repository it resides in

The business case for search is that it removes the barriers of information silos, stand-alone enterprise applications and content in multiple languages.

4. The technology of search

The term 'information retrieval' was coined by Calvin Mooers in 1950. This is the academic discipline behind search. The idea of using computers to search for information dates back to 1951, making it the first enterprise technology. Over the last seven decades an enormous amount of research into how people search has been undertaken and this research has then been used to develop search technology.

On the surface all search engines seem to be the same but that is not the case. It is rather like the technology behind the car. There are petrol, diesel, hybrid and electric cars. They may look broadly similar but choosing between them is not easy. There are so many factors to take in account.

Information retrieval research continues in both academia and within the search vendor community with the aim of achieving the best possible match between the search query and the results presented to the user. The major challenge that has yet to be solved is to determine why users are using a particular query in order to find information of relevance. In the case of search AI and machine learning applications have been introduced as a way of determining the intent of the user, and some vendors have branded these as 'cognitive search' applications or 'insight engines'.

An important feature of most search applications is that they can be used to search for information in a wide range of other applications, such as document management systems, intranets, and customer relationship management. This is known as federated search and enables the search application to act as an integration platform and meet one of the most important requirements of an employee; they do not need to know where the information they need is stored.

5. Security and confidentiality

Strong security management is essential in enterprise search. I often suggest to my clients that they run a query using the term [confidential] at least once a week to see the extent to which information can leak out of notionally secure servers. Search, as with many other applications, can support both early and late binding. Understanding the benefits and challenges of each is a fundamental element in developing a search strategy. Many companies implement a hybrid approach.

It is important to appreciate that security technology management is not just a question of complying with ISO27001. This standard makes no recommendations on good practice in protective marking which is fundamental to internal information security management for search applications.

The potential impact of GDPR on search also has to be taken into account, especially when a company has operations and employees outside of the EU. On a positive note, one of the benefits of enterprise search is that it can also be a means of identifying potential breaches of GDPR.

6. Understanding user requirements

When setting out to define user requirements asking them what information they need is not a good solution. People only know what information they need when faced with a decision to make. It is important to focus on why employees are searching.

Many years of experience working through the search logs of clients indicates that there are three core use cases.

The first of these is the use of search to locate applications and specific corporate information such as office locations and in one case the travel schedule of the courier service to the local airport! It is much easier for employees to type in Concur to track down the expenses management application than to look for it on a very long list on an intranet page. In the case of one client there were over 70,000 queries a month for Concur and just over a 1000 for 'expenses', a query which delivered many policy documents but not the application itself.

The second case is when employees need to find corporate policies and track down corporate announcements. This is where information quality has an impact on search performance because there could be multiple versions in a number of different languages. AI technology can be very useful in displaying (for example) only policies that relate to the country in which the employee is working but including corporate policies that have a global scope.

The third case is where employees are searching for additional information to include with what they have already found about a particular product, process or technology. In these cases they will be able to use a range of query terms but expect very high levels of recall.

There are also usually small groups of employees who use search on a very intensive basis, such as research scientists and legal staff. A feature of their requirements is to be able to search external databases (for example databases of chemical structures) as well as internal information. An important element of a search strategy will be to ensure that employees have improved access to both internal information and external information about markets, regulations, competitive threats and business opportunities.

Documenting these use cases in detail will provide a very good basis for understanding not just information requirements but also identifying the role of enterprise search in supporting knowledge management initiatives.

Understanding the relative balance and importance of these use cases between departments and subsidiaries will also provide valuable insight into a specification for an enterprise search application, and the internal and external collections that need to be indexed.

7. Making search work

Despite the active development of search technology, for over a decade employees have been reporting very high levels of dissatisfaction with enterprise search applications. A recent findability survey of 250 Scandinavian companies by [IntraTeam](#) indicated that there was total agreement on the importance of improving information findability but 60% of the organisations taking part in the benchmark programme reported that it was difficult to find information.

Only 28% were satisfied with the performance of their enterprise search applications!

Research shows that there are three factors behind this lack of satisfaction

- A lack of confidence in the search application to deliver relevant information
- The inconsistent quality of the information that they find
- Difficulty in using the search user interfaces

In successful enterprise search implementations these factors are identified, prioritized and managed by a search support team, often operating as a virtual global team. They will have the computer science and information science skills to develop search solutions which meet the need of employees in particular roles such as research, product development and strategic planning. Expertise in linguistics and taxonomy development will also be of value.

The tasks that this team will undertake include

- Conducting analyses of search query logs
- Running searches on popular queries to validate the quality of the search and the information
- Managing a search help desk, working closely with the IT Help Desk team
- Setting up and supporting a network of search mentors across the organisation

- Running training courses for new employees, and for those taking on new responsibilities
- Taking part in team and project meetings to ensure that changes in user requirements are identified

8. Who should own enterprise search

The challenge in most organisations considering an investment in enterprise search is whether corporate services should take the lead and assume the budget or responsibility should be placed in departments or subsidiaries with IT services just providing coordination.

Given that enterprise search applications may be used every day by most employees it is very important that an enterprise search strategy is developed that sets out user requirements and performance metrics together with technical and staff resources.

This strategy will help to provide the answer about who should own enterprise search. There is no 'right answer'. In some of my clients there was clearly a benefit in search being positioned as an enterprise application, but in others the search maturity and business requirements for search were most obvious in one or two subsidiaries.

In these cases a search strategy is developed that takes advantage of the experience and expertise gained in the subsidiaries, with a carefully managed enterprise-wide deployment being coordinated by the CIO and their team. The development of a search strategy provided a forum at which the opportunities and challenges could be considered around the table.

9. Measuring success

The easiest way to measure the success of the investment is to add a couple of questions to an annual staff engagement survey

1. How frequently have you found that not being able to find information on a timely basis has given rise to problems in achieving business objectives?
2. When you use the enterprise search application how confident are you that it will find information that matches your requirements.

I have found that search success stories are also a very powerful way of justifying a search investment. The enterprise search team can harvest these from their meetings with teams and through search mentors. Highlighting these success stories on the corporate intranet will also send a message about the potential of enterprise search across the company.

10. Next steps

This three-month three-by-three action plan will provide you with all the information you need to decide whether your current enterprise search application will meet business requirements for 2021/2022.

Month 1

1. Ask your enterprise search team to create a range of training videos and collateral to ensure that employees are making the best possible use of your current applications

2. Arrange for every project and team meeting to have a 10 minute agenda item that assesses the current level of satisfaction with search and gives team members the opportunity to set out what more they expect of the search application
3. Begin to draft an enterprise search strategy, and in doing so identify other corporate strategies and policies that it needs to link to. This draft should identify corporate risks that could be reduced with enterprise search

Month 2

1. Collate the outcomes of from the team meetings and the response to the training material and revise the draft search strategy
2. Work with LoB managers to define sets of content that are business-critical. The list of business risks is a very effective 'checklist' for this process
3. Audit the functionality and the Q1 2021 roadmap of your enterprise search application so that the extent to which it will be able to meet requirements of employees can be judged

Month 3

1. Work with your vendor to agree what budget should be included in the strategy to ensure that the requirements for any enhancements that emerge from the user research can be implemented
2. Prepare and submit the enterprise search strategy to the Board with a 12 month roadmap of the actions you regard as essential to ensure that the company has the best possible access to information, linked into the risk register to make the business case.
3. Set out in the strategy how the impact of upgrading the resources allocated to enterprise search will be measured and reported back to the Board

11. On reflection

In 2015 [PWC and Iron Mountain](#) released a report on information management which is an excellent summary of the business case for information and search

“Information is the oxygen of business. It is essential and it is everywhere. It includes knowledge and learning, system-generated data, product and customer information, day-to-day communications, archived paper documentation, as well as corporate intellectual property. The growing volume and variety of business information creates increased risks — risks that are wide-ranging and if not properly managed and or mitigated can have a critical and damaging impact on businesses of all sizes.”

The challenge of managing information as an asset is that information, like oxygen, is invisible. Every employee, without exception, depends on information to meet both business and personal objectives. Enterprise search delivers, on demand, the information they need.