



Enterprise Search Team Management

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Intranet Focus Ltd
12 Allcard Close
Horsham RH12 5AJ, UK
+44 1403 267030
www.intranetfocus.com

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Many organisations are disappointed with the performance of their enterprise search implementation. Even though they took every possible care to select the best search engine they were able to afford it seems not to have been as successful as envisaged. Installing a search engine is substantially easier than installing almost any other enterprise software application because there is no requirement (in theory) to train employees how to use the application. All they have to do is enter a search term and the software almost immediately can provide several thousand results.

But that is the fundamental problem. Employees do not have the time to look through all these results, and are expecting the information they are seeking to appear on either the first, or at least the second, page of results.

To get the best from an enterprise search application requires staff support to fulfil five roles.

- Search (Information Discovery) Manager
- Search Technology Manager
- Information Specialist
- Search Analytics Manager
- Search Support Manager

In many cases an organisation may be able to cover these roles with two people working full time but in organisations with more than 10,000 employees it is highly likely that each of these roles will need at least one person, and maybe more for a highly diversified and/or decentralised organisation.

This briefing paper sets out the core principles of enterprise search team management together with a description of the five roles that need to be supported. Seven recommendations are made.

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Research Notes

This is the first of a series of Research Notes that Intranet Focus Ltd will be publishing in 2012. For further information see <http://www.intranetfocus.com/resources/downloads>

1. Introduction

It is surprising and concerning that the 2011 Digital Workplace Trends survey from NetStrategy/JMC (1) reported that only 45% of respondents were satisfied with the performance of the search application, down from 50% in 2008. It is very unlikely to be the case that the search application is not of an acceptable quality, as this is a mature technology dating back over thirty years.

All the evidence points to three issues being responsible for a lack of satisfaction with search

- The way in which the search application determines a relevant set of results does not match the expectations of the user
- The results point to poor quality information that users feel unable to trust, assuming of course that they are aware that the information is not of the highest quality
- There are too many search results to look through in the time available

Search tends to be used when time is at a premium, and research conducted in 2011 for SmartLogic (2) suggests that once a user has spent more than two minutes on looking through a set of results there is a strong tendency. The research, conducted across more than 2000 directors and managers in US, UK, Germany and France showed that

- More than half (52%) of respondents said they cannot find the information they are seeking using their own organization's enterprise search facility within what most define as an acceptable amount of time
- Nearly two-thirds of those surveyed (65%) define a 'good search' as taking less than two minutes to find what they were looking for, but only 48% report being able to achieve that result in their own organization
- Nearly 90% of respondents report that taking four minutes or more to find the information they want does not constitute a 'good search' experience, and yet 27% say this is the case within their own enterprises

Search applications have to be 'tuned' to ensure that the complex algorithms used to match results to even a well-defined query are working in the best interests of the user. The mathematics of search engine optimisation is very complex (3), even in SharePoint (4). Although a manager of a search application does not need to be a mathematician there is a requirement to understand the ways in which the balance of the multiple criteria need to be adjusted to provide as high a level of satisfaction with the quality of the search as is possible achieve given that two people with identical experience and a similar request for information are likely to have different perceptions of what is 'relevant' to them.

Looking at search logs on a regular basis in the light of business requirements will shed a lot of light on potential issues of search satisfaction. These logs need to be reviewed in the context of the information architecture of the application, be it an intranet or a document management application, because browse and search tasks are complementary in locating information. Users may start with a search, identify a section of the intranet and browse there for a while, and then finding perhaps the name of a project will then conduct a search for more information about the project.

The log evidence may point to the need to make changes to the relevance weightings in the search application and here things can get quite technical, requiring a combination of business, information retrieval and IT skills.

It is therefore very surprising that the question in the 2011 Digital Workplace Trends survey from NetStrategy/JMC about the number of people supporting the search application gave the following result.

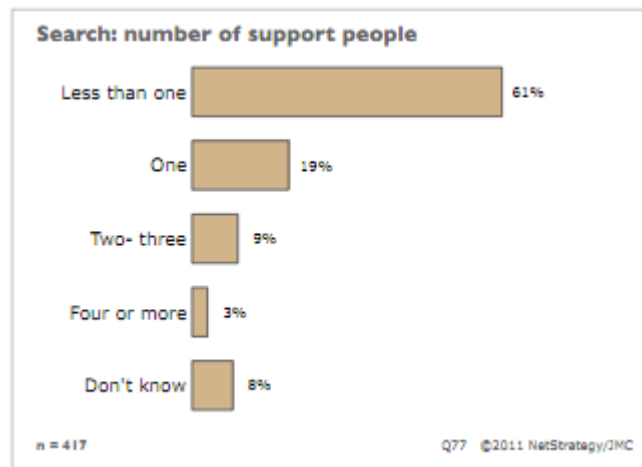


Figure 1 Size of search support team Digital Workplace Trends survey 2011

At a search workshop undertaken by Intranet Focus Ltd in New York in 2011 all the participants were from large US-headquartered operations using high-end search applications such as Autonomy, Fast and Oracle Secure Search. The size of the search team ranged from 0.5FTE (a leading global pharmaceutical company) to 13 in a large financial services company.

This Research Note addresses the issue about whether a search application can be effectively managed with less than the full time attention of even one member of staff. Checking with other applications in the organisation will show that every other enterprise application has a support team, even though the application may only be used by a small cadre of experienced managers.

2. Roles and responsibilities

The key roles that need to be filled in a search support team are the following

Search Manager

This role is not an IT role but instead requires a very good understanding of how information is used in the business, with a particular emphasis on unstructured information. The Search Manager might usefully have a background in information science or business intelligence applications but the key success factor is that they understand the language of the business. Excellent project management skills are also essential as this is going to be a complex installation and any failure to deliver will be very visible to the majority of the workforce. As well as managing the search team the Search Manager needs to maintain a close working relationship with the search vendor and the search integrator, not only so that problems that arise with the search software are quickly addressed but also to gather and assess the experience of these partners from other installations. Sadly it seems that many vendors are unwilling to bring their customers together to share experiences and good practice.

The requirement for excellence in support is so important that if a full time search manager with the appropriate expertise cannot be allocated to the search project then the sensible route is to delay the implementation.

Search Technology Manager

This is an IT role and the person concerned will be responsible for assessing server and network performance, crawling schedules, load balancing, back-up and disaster recovery. In a multi-national company this may require treading on the operations of national IT managers. Typically an ERP or CRM application is country or at most regional specific, but enterprise search will be global from the outset and requires 24/7 availability. This may require an investment in hardware from the centre which cannot be justified by a national IT operation. As a result this is a 'management' role and not a technical role as the person concerned has to have the experience and the authority to ensure that things happen in operations over which they have no direct control. Just agreeing this can be a lengthy process of political negotiation, and needs to start right up front, and not when the software is about to be installed.

Another important responsibility of the Search Technology Manager is to manage information security, user authentication and user permissions. It is usually not until an enterprise search application is implemented that all sorts of 'confidential' information is found lurking on shared drives.

Finally this role should take responsibility for API management and documentation. Effective enterprise search across multiple applications will require some complex APIs which have to be kept under review as the individual applications are upgraded or re-structured. The scope of this role also includes tracking the performance of document filters and connectors, both of which can be susceptible to even small changes in application configuration.

Search Analytics Manager

One of the critical success factors for enterprise search is the quality interpretation of the search analytics. The volume of the search reports is very extensive. In one global consulting business around 500,000 searches were being carried out each month. One of the most important tasks for the Search Analytics Manager is to work through the searches which resulted in zero hits being found. If the assumption is made that only 0.1% of searches failed to find anything then this still represents a total of 500 searches a month, or around two each working day. Finding out why this search has failed may require some detective work, and certainly some feedback to the search user.

Some of the useful log reports are the following. The number of searches has been arbitrarily set at 50 for the purposes of this paper but in practice the number will need to be decided on an ad hoc basis as the scale and value of the log files becomes apparent.

Top 50 searches by search terms/query

The number is arbitrary but the purpose is to see what are the most popular searches, and some of these could well be a result of poor information architecture on the intranet(s). Even if the enterprise search is working across multiple repositories it is likely that the intranet will be the starting point for the majority of searches.

Top 50 searches leading to only a few or no results being presented

This log will show where there may be gaps in content, or where a search query is being typed incorrectly and the internal directories are not suggesting an appropriate alternate. A user may have chosen the wrong collection or used the wrong acronym for an internal project or product.

Top 50 searches leading to no document being selected

This is a situation that needs careful scrutiny. Users are being presented with a list of results but either

these are so wide of the mark for some reason or the user realizes that they need to go to a section of the intranet or some other application to find the information they are seeking.

Top 50 most requested documents

Some of these may need to be promoted to best bets. A review of the list may also show that users are viewing documents that are in fact out of date or not the best match. These insights can only come from search team members who know the significance of these failures and can allocate the time to find out why users have selected the documents

Top 50 searches where more than three pages of hits were presented

This analysis should give some indication of where the relevance tuning needs attention, especially if the documents being retrieved were some way down the relevance ranking.

As with all logs it is the differences that are important.

This is just an illustration of some of the logs that should be collected and analysed on a regular basis. The standard reference work on this topic has been written by Lou Rosenfeld (5)

The Search Analytics Manager can easily become a victim of their own success as the volume of searches increases. The propensity for zero searches may tail off but probably not at the same rate as the increase in search volume.

Where search analytics need considerable intellectual care is in federated search applications. Here the chances of results that the user does not trust or even understand are quite high at the current state of the technology, and yet this is one of the core features of an enterprise search application as it acts as an integrator across multiple information platforms.

Although search logs are very useful they need to be supplemented by usability tests, surveys about the experience that users feel they are getting with the search application, emails into the help desk and focus groups with particular groups of users

Search Information Specialist

Good search needs good consistent metadata, and yet metadata management is not given the priority it needs in an enterprise search implementation. As has been highlighted earlier relevance ranking invariably places more weight on words and concepts in the title of the document. If the title is missing nor is not well written then the relevance of that document may be decreased even if in fact the value to the user of the content of the document is high. The Information Specialist ideally needs to have a background in information science or in librarianship so that they have a fundamental training in metadata management and in the benefits and challenges of taxonomies.

A good taxonomy can be of considerable value in enhancing the search dialogue, but the development of taxonomies requires specialist skills, especially where a company is working in more than one language. Some search products (and Verity was a good example) offer customers support in the development of taxonomies, but it has to be realised that at present, and perhaps for some years to come, a totally computer-based approach to taxonomy development is not likely to be available. Of course some search vendors decry taxonomies and say that their product does not require such an artefact from the world of library science. That may or may not be the case, so the Information Specialist will have the skills to determine the truth in this statement in terms of the particular collections that the company wishes to make searchable.

Another responsibility of the Search Information Specialist should be to conduct some standard test

queries on topics that emerge from the search logs as popular searches. A lot can be learned from these queries, and they are a good basis for developing some best bets for common search queries.

Search User Support Manager

This person acts as the user-facing member of the team, doing training and usability testing, and providing feedback from surveys on the performance of the application. Although in theory search applications claim to need only minimal training the reality is that this is not the case, especially where federated searching is being carried out. Users may not fully appreciate the provenance of the various information repositories being searched and will need good guidance notes and suitable Help documentation on the search application.

There is a valuable role here for a search wiki which can be used to identify issues for attention, suggest approaches for particular types of search (people/expertise search being an important example) and overall create the impression that there is more than just a black box at the other end of the search box.

This analysis indicates that there are five search team roles

- Search Manager
- Search Technology Manager
- Information Specialist
- Search Analytics Manager
- Search Support Manager

At the specification and selection stage not all of these are required full time. In principle it might be thought that there is no requirement for the Search Analytics Manager at this stage but given the importance of analytics they need to be involved in ensuring that the analytics requirements are fully specified and are tested in the Proof of Concept stage.

Even at the early stages of implementation the team may be able to cope on a 'part time' basis but the evidence from our clients is that this approach is not sustainable for very long. It is important to remember that search touches everyone in the organisation who has access to a desktop, and any failure to locate business-critical information on a timely basis could have serious implications for the organisation.

Enterprise search vendors tend not to be too explicit about the scale of support needed following installation of their software. There is a concern that prospective customers are aware of how much support is needed they may not proceed with the purchase. Even if the purchase of the software has been made some time in the past there should be no reason why a search vendor should not be willing to share information about the size and roles of search teams in other customers.

3. Supporting global enterprise search

The support requirements are significantly greater when enterprise search is rolled out globally. There is likely to be a need for an Information Specialist for each major content language, especially in the case of German (where word length and complexity can raise some novel issues) and of course in ideographic languages such as Chinese, Japanese and Korean. These and other languages (Finnish is the classic example) will need attention paid to stemming and lemmatization and to seemingly simple issues such as the way that organisational names (such as OECD) appear differently in French (OCDE).

This may not be a full time position but certainly the expertise needs to be available to the search team.

For similar reasons there is a good case to be made for an analytics specialist for each business area in a highly diversified global corporation. The search terms used for one section or subsidiary of the business may well be very different from those in others. Investment banking and retail banking would be a good example.

Certainly there has to be a Search Support Manager in each major country, or at least each region (Europe, Asia/Pacific, North America) and language issues have to be born in mind. Although people may well speak several languages in business situations they will prefer to search in the language in which they have the best command, so Spanish language search and support in South America is very important.

As a result the numbers can add up

One Information Specialist (IS) for each major language (x)

One Search Analytics Manager (SAM) for each business area (y)

One Search Support Manager (SSM) for each major country (z)

Core search team of at least three for search management and vendor relationship management

$$\text{Team size} = x(\text{IS}) + y(\text{SAM}) + z(\text{SSM}) + 3$$

So for an organisation operating in English, French and German, with two main business areas, and with significant business operations in the USA, France, Germany, Dubai, New Dehli, Seoul and Beijing the numbers work out at

$$\text{Team size} = 3(\text{IS}) + 2(\text{SAM}) + 7(\text{SSM}) + 3$$

That totals 15 members of staff, and for the purposes of this calculation local IT support has been excluded.

This may seem quite a considerable team, but it can be interesting to find out how big the support teams are for enterprise applications such as an HR portal, an enterprise resource planning application a business intelligence application or a high-end document management application. (6)

4. Creating a Global Centre of Search Excellence

Many companies set up a global Centre of Search Excellence (CSE) to bring together staff with specialist expertise that may not be available in all business centres. Certainly staff in the Information Specialist and Search Analytics roles may not need to be located in the countries that are supporting, but this is certainly not the case with the Search Support Managers.

The core issue is where this CSE will be located. The obvious answer is in the country where the global headquarters is based and for a great many companies this may be the United States. Then the problem arises of where in the USA given the three-hour difference between the East Coast and the West Coast, and in the case of the latter in particular the resultant time gap between the CSE and operations in mainland Europe of some nine hours – a complete working day.

The decision is not an easy one and needs to take account of

- The location of staff with the appropriate specialised skills
- The location of the technical support desk of the search vendor and/or implementer
- Which operations/countries are going to present the most complex search enquiries
- The reporting line for the Search Manager
- The ability to provide real-time access to support from as many of the core geographic areas possible

In the end the decision is likely to be political/organisational than pragmatic, and the downsides of the resulting decision need to be considered in detail and addressed.

5. Reporting lines

One of the major challenges in establishing the search team is deciding on the reporting line. It may well be that the team is made up of staff seconded from various departments, and as always in these situations the clarity of the reporting line is even more important than is the case with an intra-departmental team.

The situation with the search team is just the same as with the intranet team. It is difficult to find the optimum position for an intranet team and as a result it may report to Internal Communications, HR, IT or an important Line of Business manager. Having the Search Manager for Enterprise Search report to the Corporate Intranet Manager is not sensible. The scope of enterprise search is potentially much broader than is the case with just intranet search even if in the first instance the search application is implemented for the intranet, and the Intranet Manager may be unwilling to lose the full-time support of their Search Manager as the role develops.

A distinction can usefully be made about the reporting line during the selection and install process (which might well be to the IT Director) and the on-going management of search. In this latter case the requirements are more likely to be driven by the business rather than the IT infrastructure.

The decision is not of course just one of operational responsibility but also of budget. Compared with many enterprise applications enterprise search license costs are concerned are relatively low, and only in very large implementations are the licence costs going to be substantially more than \$500k. The costs are in the search team, and lines of reporting usually align to budget ownership.

It is not possible to give a definitive recommendation on reporting lines, other than the Search Manager has to be able to make things happen across national and departmental boundaries, and therefore needs the support of a line manager to is able to provide the appropriate level of global support and influence and who appreciates the need for staff support after implementation.

6. Recommendations

- a. Ask your search vendor and/or search implementer to put your organisation in touch with other customers of a similar size so that experiences can be shared and good practice can be implemented. If they are unwilling to do so ask why not!
- b. Before buying a search application make sure that you take account of staff support roles when making the business case.
- c. Do not proceed with implementing enterprise search without a full-time experienced search

manager being in place to help prepare the statement of requirements, sign off on the installation and initial implementation, and then build and train a search team that is appropriate to the value of effective search to the organisation.

- d. Without a range of regular search log reviews, supported by other input about search satisfaction from help desk calls and direct feedback from users, any search application will sooner or later fail to meet the expectations of stakeholders. Setting up these reviews should be a priority.
- e. It should be appreciated that the types of search log and the frequency of analysis will need to be kept under review. It is difficult to decide on the log analysis programme at the outset.
- f. From the analysis of this user feedback determine the scale of the work needed to carry out regular tuning of the search application, carry out test searches and all the other tasks required to maintain the effectiveness of the search application can be quantified.
- g. Make sure that all the roles and responsibilities set out in Section 2 are covered even if initially people have to cover more than one role. These roles should be incorporated into job descriptions and job evaluations.

7. References

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