Global Knowledge Services

Teamwork improves search
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Obligatory background

Deloitte and me

Deloitte is the largest private professional services firm in the world – with over 200,000 professionals and over $32US billion in annual revenue.

Deloitte sells services in numerous areas including Tax, Audit, Financial Advisory, Risk Services and Consulting.

I have worked in knowledge management and enterprise search for 15 years and have a background in web development, SharePoint and experience with several search engines and web analytics tools.
Deloitte's enterprise search
What does our solution look like?

- Deloitte's enterprise search has a user base of over 200K users
  And has about 90,000 distinct users using it at least once a month
- Those 90,000 users make about 450K visits in total each month
  And those 90,000 users use about 200K distinct search terms
- Our search includes content from over a dozen repositories and provides over 1 million possible results
- As with most enterprise search solutions, the content is both broad (Deloitte offers a broad range of services) and very narrow (there is a lot of conceptual overlap in those services)
Deloitte's enterprise search
User interface

![Enterprise search interface](image-url)
Where our journey started
Search optimization – where our journey started
"Search analytics for your site"

This book covers a broad range of approaches to analyzing data about your users' behaviour – broken into

- Pattern analysis
- Failure analysis
- Session analysis
- Audience analysis
- Goal-based analysis

It provides numerous tips and guidelines for how to take insights from your search data into action

However one thing it does not address is how to scale this kind of analysis.
But…
How do we operationalize?

Wanting to apply the recommendations from the book, we faced a challenge:
• How can we turn Rosenfeld's concepts into effective, repeatable processes?

We faced many challenges:
• Lack of omniscience (no one person knew all topics or content sources at Deloitte)
• We do not have all of the data we need to understand user intent
• Volume of data
  – So many searches! So many distinct search terms to consider! So many users!
  – So much content in our search!
• For most content sources, a lack of broad understanding of how the content is processed by the search engine

Our solution – we needed to establish a team who could focus on these issues!
The Search Optimization Center team
Once we recognized the need to have a team focused on this, we faced several questions –

• Who should the members be?
• How do we get leadership commitment?
• Does this represent an organizational change or a virtual team?
  – If the former, how do we get commitment?
  – If the latter, how do we ensure responsibility and commitment?
• What are the budget implications?
Search Optimization Center
Starting up a team

In answering these questions – we formed Deloitte's Search Optimization Center (SOC) – a virtual team of audience representatives, content experts and search experts who have the following goal:

The Search Optimization Center will ensure that users have continuous improvement in the search experience, with a focus on relevancy, promoted results and metrics.
As we built our team, we wanted to ensure good representation across the business but also ensure we balance individual commitments

- Deloitte is a very matrixed organization – practitioners are aligned with a client service and geography but also may be aligned to an industry
- We looked for people across all of our functions and key geographies
- We also sought out representatives who understand key repositories
- We have also included members of our search technology team
- And, finally, we have included some full-time members who administer the search solution and provide reports for the other members

**Overall** – we have about 5 full-time people and ~5-10% of another 20 members' time
Full engagement of user group representatives is required for successful search optimization:

The user group representatives will:

• Know and represent their user expectations for relevancy

• Identify key content sets for their area and key individual / high-value assets, including key assets that correspond to specific user member firm

• Work with respective Content managers to implement specific changes in tagging (possibly including changes to the taxonomy in use in systems)

• Partner with Technical team to update how content is indexed (if their content is not a SharePoint-based source)

• Analyze the provided reports and review them regularly to determine new patterns

• Include these responsibilities into their annual goals
How does the team operate?

We have established a number of norms for the team to help us be successful:

• Meet bi-weekly as a whole team – all members are expected to attend meetings
• Share knowledge and increase transparency we primarily use our enterprise social network for communication and collaboration
• Continue analysis and action outside of meetings
• Add a specific goal to their annual goals
  – To ensure alignment with their management and give them responsibility to contribute to success
  – This is also the hardest norm to ensure happens
Overall, the team also has a responsibility to Deloitte and their users as the business owners of several important search resources:

- Personalized relevancy rules
- Promoted results (AKA best bets)
- Our search thesaurus
- Governance of the above

Giving the SOC these responsibilities helps ensure we have good representation across Deloitte and that the team is thoughtful in how we manage the overall search experience.
SOC Processes
Regular meetings of the team provide us the opportunity to execute several repeated processes including:

• Regular, recurring reviews of standard reports (more on these in the next slide)
• Reviews of changes / requests for changes in any of the assets the team owns (promoted results, etc)
• Knowledge sharing among the team about techniques that have succeeded
• Identification and discussion of new content-related issues
Processes
Other key deliverables and support

In addition to regular processes, the SOC has provided several other tools and built support processes to improve search –

• Detailed analyses of content repositories and content guidelines for each
• Definition of a standard relevancy test process
  – Execution of the test many times – including support for a recent upgrade
• Established a regular 'search optimization office hours' targeted at the whole set of content / site managers at Deloitte
  – This provides a channel for live knowledge sharing with a large audience
• Focused currently on a 'culture change' among the broader audience of content managers – if search is bad, it is your responsibility to act!
SOC Tools
To support the SOC and the broader audience of content managers, we have established several standard reports – driven by the recommendations from Rosenfeld but with an eye toward repeatability:

- **Poorly performing terms** – What terms do users struggle effectively using?
- **Super search terms** – what are the most 'commonly common' terms?
- **Overall by user demographics** – Are there distinct patterns between audiences?
- **Promoted result monitoring** – do we have a good set of promoted results?

- **Results generator** – getting detailed insight on search results for sets of terms
- **Site search analysis** – in-depth analysis of sites for findability by our full-time team
- **Enterprise social networking tool** – interacting with the team and others
### Tools

**Poorly performing terms**

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Helps focus recurring analysis on problematic areas

Frequent topic of review with SOC team
## Tools

### Super search terms

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Terms in the top 1% for each of the last 6 months

Primarily useful for prioritizing other reports

Also of use to content managers – can be used to prioritize tagging
Tools
Usage and user demographics

Prototype!
Another invaluable tool the team has created and uses extensively is called the 'search results generator'.

This allows members of the team to easily generate a detailed table of search results for a large set of search terms at once.

It enables us to answer questions like:

- Where does the desired target appear in the organic results for a set of terms?
- What does the search engine see in managed properties for results?
- How much do results change over time?

It enables identification of patterns to help us isolate issues with our numerous content sources.

It also is an important part of our relevancy testing – reducing the time commitment significantly to execute a large set of searches for each tester.
## Tools

### Results generator

**Search Optimization Center**

**Search Terms**

Enter your search keywords (one search term per line with a maximum of 100 terms). - Usage help

industry
print
arp
isp
desc

**Execute search**

**Cancel search**

*Note that the options below only take effect when you execute a new search:*

- Clear table on new search
- Select your result source: DR
- Select your sort order (not currently working): US and DR content
- Results per term: 10
- Unroll Client Service values
- Unroll Industry values
- Unroll Source values
- Unroll Content Type values
- Unroll Internal Service values
- Unroll Geography values

**User:**

Current user is logged in as: id0gtjaddljernero

**Status:**

All 4 search terms processed. Total query time: 5534 milliseconds. Average query time for 1383.5 milliseconds.

#### Formatted Results

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<td>Upstream Oil &amp; Gas Industry Print</td>
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</table>
Tools
Site search analysis

A service offering and tool provided by our core team – provides a detailed analysis of all of the content in a site (all lists and libraries) that enables the site manager to act on it to improve the findability of content in their site.

This tool focuses on the 3 principles of enterprise search: identity, coverage and relevancy.

- **Identity** is primarily a matter of reviewing titles of content – are they clear and distinct?
- **Coverage** considers what content should appear and what content is actually appearing and recommends appropriate changes.
- **Relevancy** targets lack of content tagging.
In addition to the tools that are specifically targeted for members of our Search Optimization Center team, we also extensively use our enterprise social networking tool.

- Collaboration among the team in a transparent manner (supporting serendipitous interactions with others)
- 'Public' interactions with both end users and content managers – identification of issues, answering questions, garnering support for changes, and more
- Interaction with client-facing practitioners who work in the enterprise search space – sharing our learnings with them and vice versa!
The impact so far and into the future
Deloitte is now over 18 months into having the SOC team operational – what has the impact been?

- We have started changing the mind set of what it takes to improve search
  - People across Deloitte are now aware of their responsibilities and are taking action!
- Clear, direct guidance on search optimization for our major portals
- Relevancy has improved for many terms (topics) we have had an opportunity to analyze and take action on
- We have reduced 'noise' in the results significantly (still more to do!)
- Overall, relevancy has not shifted significantly however, we were able to confirm relevancy stayed stable through a recent upgrade of our search engine
- Improved governance and guidelines
  - Broader input on the governance and increased adoption of the same
The future
Where are we going to take this effort?

A continued focus on shifting the mindset of responsibility for the quality of results even further – we have made headway but not enough!

- Expand guidelines for content tagging across more repositories
- Increase the knowledge of effective tagging
- We are on the cusp of implementing personalized relevancy – the SOC will
  - Defining the expected user experience for specific audiences
  - Confirming relevancy through testing

…with the vision of providing our practitioners a reliable, high quality search experience