Washington, D.C., January 13, 2015
Transcription Research Board 94th Annual Meeting

Poster: P15-6910

Intelligent Searching for Transportation Research Information

Assertion

Transportation authors publish in a broad field that touches nearly all disciplines, from engineering to user behavior, from climate change to materials sciences. Accordingly, there are vast amounts of research applicable to transportation and one could spend hours, days or weeks searching, especially as an author begins their initial literature search or review.

Unfortunately, many researchers turn first to general search engines such as Google, which cast a wide net into an ocean of information and return a great deal of search noise (advertisements, news stories, "promoted" links, etc.). General searches thereby waste a great deal of a researcher's time. Further, general search engines can miss great resources such as conference presentations, posters, organization standards, and policies, as well as other "grey literature."

Transportation authors and researchers can be more efficient searchers when they begin with dedicated transportation search tools such as the Transport Research International Documentation (TRID) database and the Transport Research Portal (TRP).

These tools provide for a more focused and intelligent search option to identify appropriate transportation-related information and research.

A further advantage of having a transportation-related report indexed in TRID and TRP is that transportation authors can be confident their work is more visible to their peers, without the noise.

Authors can also improve the retrieval rate of their publications in TRID and TRP as well as other search engines through the choice of keywords from a controlled vocabulary such as the Transportation Research Thesaurus (TRT).

The Intelligent Searching for Transportation Research Information poster will demonstrate that authors can improve their own literature search efficiency and quality by using TRID or Transport Research Portal rather than general search engines. Authors will also learn how to submit publications for indexing in TRID and TRP, as well as how to improve retrieval of their publications through the use of TRT keywords.

Credits

References

1. Benjamin, S. (2014, December 02). Search results using Google and TRID in the United Kingdom.
2. Christiansen, L. (2014, December 07). Search results using Google and TRID in the United States (Iowa).
3. Loyo, L. (2014, December 02). Search results using Google and TRID in the United States (Washington D.C.).
4. Sandstedt, B. (2014, December 02). Search results using Google and TRID in the Sweden.
5. Chitika. (2013, June 7). The Value of Google Result Positioning | Chitika | Online Advertising Network. Retrieved November 30, 2014, from http://chitika.com/google-positioning-value
6. Richard. (2013, December 17). Everything You Need to Know on Tor & the Deep Web. Retrieved December 7, 2014, from http://www.whatishostingthis.com/blog/2013/12/17/tor-deep-web/

Citation

Benjamin, Stuart, Leighton Christiansen, Lisa Loya, and Birgitta Sandstedt. "Intelligent Searching for Transportation Research Information, Poster Number: P15-6910." Washington, DC, USA, 2015. http://www.trb.org/AnnualMeeting2015/AnnualMeeting2015.aspx

Acknowledgments

The authors wish to thank the many members of the B0002 committee for their support: the staffs at TRIS, ITRD, ITRP, and TRT for creating and maintaining the databases, the TRB Committee on Library and Information Science in Technology (ABG40) for sponsoring this poster; Iowa Department of Transportation staff for poster design and printing services.

Casting a wide net: general search engines and transportation research

General search engines such as Google, Baidu (China), Yahoo!, Yandex (Russia), and Bing all operate in a similar manner. These search engines send out Web crawlers to seek out and index content on all Web pages available via the "visible Web."

Further, general search engines are run by companies that make revenue by selling advertising space on their search results pages. These actions have consequences for researchers and authors.

Unreliable results

1 Content is not curated or chosen for academic and intellectual rigor, which means personal blogs, ads, possibly incorrect, or misleading information and data, etc., are all part of the search results, presented alongside peer-reviewed research, as if equally valid.

Location & promotion biases

4 General search engines may return results that vary by geographic location. [1,2,3,4]

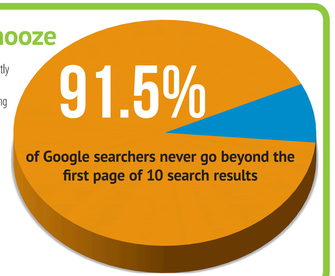
If the search engine tracks individual user behavior over time, results are influenced by past search behaviors.

Screenshot of Google search for "hot-mix asphalt." The first "hit" is an advertisement, and the right column contains more ad links.

Front page snooze

2 Search results pages are frequently designed to maximize advertisement viewing by limiting pages to 10 results.

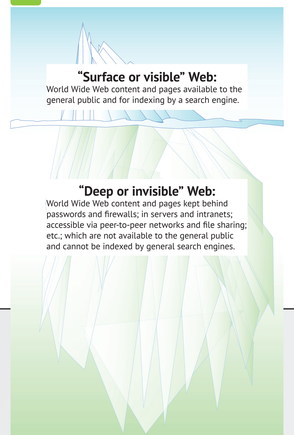
This has a negative impact on user search behavior, with most searchers only seeing the first page of potentially thousands or millions.[5]



What lies beneath the "surface"?

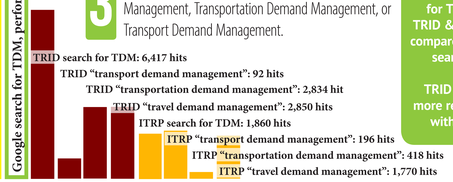
5 By one estimate, the "surface or visible" Web constitutes only 4 percent of Internet content, with 96 percent of information found in the "invisible" Web.[6]

This means the World Wide Web is like an iceberg, with most content hidden from sight. Millions of search hits do not guarantee greater access.



The TDM (Tedium) of Google Searching

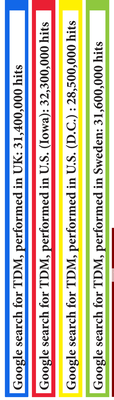
3 TDM is an often-used abbreviation for Travel Demand Management, Transportation Demand Management, or Transport Demand Management.



When searching for TDM, how do TRID & ITRP perform compared to a general search engine?

TRID & ITRP give more relevant results with less noise.

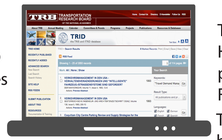
This means millions of search hits, a great deal of search noise, and some garbage.[1,2,3,4]



A better way to research with TRID and ITRP

Transportation Research International Documentation Database (TRID)

http://trid.trb.org/



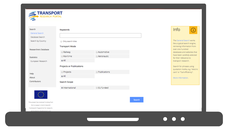
In 2011, TRB released TRID, the TRIS and ITRD Database. TRID combines TRB's Transportation Research Information Services (TRIS) Database and the International Transport Research Documentation (ITRD) Database, offering users the world's largest and most comprehensive resource on published and ongoing transportation research.

In fall 2012, ARRB Group's Australian Transport Index (ATRI) Database was added to TRID adding content from Australia and New Zealand. In 2013, TRB and the Japan Science and Technology Agency (JST) signed a Memorandum of Understanding to share records of transportation-related research from JST's J-STAGE Database with the TRID Database.

TRID covers all modes and disciplines of transportation and contains more than 1,050,000 records of published research.

International Transport Research Portal (ITRP)

http://www.intransport.eu



The ITRP was developed as part of the Hermes Project, an international collaborative project funded by the European Commission FP7 programme.

The project set out to foster closer and more effective communication between researchers working in the field of transport technologies, both in the European Union and internationally, by facilitating exchange of information and developing a framework for long-term collaboration. The ITRP indexes and makes discoverable an increasingly number of transportation databases worldwide.

Pro Search Tip:

Subject-specific tools such as TRID and ITRP will return consistent results the world-over, ensuring authors and researchers that they and their peers have access to the same high-quality information from peer-reviewed journals, conference papers, government publications, etc.

A few advantages of TRID and ITRP over general search engines

1 Quality in, quality out
Content is curated, or chosen for academic and intellectual rigor, ensuring high-quality information from peer-reviewed journals, conference papers, government publications.

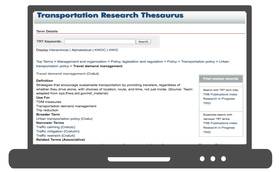
2 Efficient searching
Robust, easy-to-find, advanced search tools allow authors and researchers to modify searches, fine-tuning results with precision.

3 Relevant results
Without millions of unrelated hits creating search noise, resources in TRID and ITRP are, result for result, far more likely to be useful to transportation authors and researchers.

The Transportation Research Thesaurus (TRT)

Authors: Want to improve your retrieval rate? Then control your vocabulary.

http://trt.trb.org



A controlled vocabulary is simply of list of words with assigned meanings. When the reports and papers are index in TRID, they are assigned keywords from the TRT.

The TRT website allows users to access terminology through alphabetical, hierarchical, keyword in context, or keyword out of context displays. Users can also see broader, narrower, or related terms, and use for terms.

By choosing keywords from TRT, you can ensure that your publications are retrieved by search engines with related work, improving the chance your peers will find your work. Users can even suggest new terms to TRT.

Research in Action

The Transportation Research Thesaurus (TRT) is a tool to improve the indexing and retrieval of transportation information. The thesaurus covers all modes and aspects of transportation.

The TRT was initially developed under an National Cooperative Highway Research Program (NCHRP) project to provide a tool to improve the indexing and retrieval of transportation information. The thesaurus covers all modes and aspects of transportation. The TRT is used as an indexing tool for the TRID Database, as well as federal, state, and university transportation collections.

Through the use of the TRT's standardized vocabulary, the transportation community's access to information continues to improve.

Authors: Make sure your work is indexed in the best transportation databases.

1. Check with your agency/organization/publisher/ publications department to see if they submit publications to TRID or other transportation databases.
2. Email a link to: **tris-trb@nas.edu**
3. Contact the ITRD member organization nearest you: **http://internationaltransportforum.org/jtrc/itrd/list.html.**

Authors

The authors are members of the TRB Information Services Committee (B0002).

Stuart Benjamin
Information Specialist
Transportation Research Laboratory
sbenjamin@trl.co.uk

Leighton L Christiansen
Librarian
Iowa Department of Transportation Library
leighton.christiansen@iowa.dot.gov
http://orcid.org/0000-0002-0543-4268

Lisa Loyo
Manager, Information Services
Transportation Research Board
lloyo@nas.edu

Birgitta Sandstedt
Director, Library and Information Centre
VTI (Statens väg- och transportforskningsinstitut/ Swedish National Road and Transport Research Institute)
birgitta.sandstedt@vti.se