

CONTEST WINNER

by *Rich Turner*

# The Future of Federated Search, or

## What Will the World Look Like in 10 Years

So if 'search' doesn't exist in 2018, how will we find the information that we need across vast volumes of information and disparate silos or datastores?

In 10 years, federated search—or search of any kind for that matter—won't exist.

What? Heresy, you say! Let me elaborate. The *function* of search will exist—but not in a context with which any of us is familiar today. After all, “search” only exists because we don't have the information we need or want at our fingertips in the first place. As a function, it's really extraneous to our needs, and it will disappear as a dedicated action because it's really part of something else.

If this sounds heretical, let's look at calendar software. Ten years ago, OnTime was the dominant calendar software provider, and Outlook didn't even exist in the form we know it. Today, the notion of “calendar” is an integral part of our interconnected, Wi-Fi/web-enabled, mobile-synced environment in ways we could hardly imagine in 1998. In 1998, it was virtually impossible to have a calendar integrated into our email function *and* seamlessly synced to a hand-held phone in our pocket. In fact, most of us carried separate cell phones and PDAs in 1998—and even those PDAs' calendars didn't correlate to our desktops.

So if “search” doesn't exist in 2018, how will we find the information that we need across vast volumes of information and disparate silos or datastores? Digitally stored information is increasing—dramatically—and there's nothing to indicate that trend won't continue. In 2018, there will



be more available information than most of us can even imagine. If you were to apply today's technology to accessing that information, it would be akin to trying to heat your house with a hair dryer. The simple answer is that the companies who will—or might—

develop and handle the technologies and infrastructure to accomplish federated search in 2018 probably don't currently exist. So let's look at what the world might be like in 2018.

Identifying locations of information—long a corporate problem and

driving force behind many current readiness initiatives and legal preparedness—will become a market in its own right. The same way we outsource managing our CRM solutions to companies such as salesforce.com, we will outsource the mapping of our data



## About the Contest

Information Today, Inc. is pleased to publish this winning entry in a writing contest conducted and moderated last year by Sol Lederman, principal author of The Federated Search Blog.

The contest, hosted by the blog and sponsored by Deep Web Technologies (DWT), asked blog readers to predict the future of federated search. Specifically, contestants were asked to submit an essay, not to exceed 1,500 words, answering the following question: *What will the landscape of federated search look like in 10 years?*

Six noted federated search experts volunteered to serve as judges: Marshall Breeding, Miriam Drake, Carl Grant, Judy Luther, Peter Noerr, and Roy Tennant. Judges scored essays on writing quality, originality, and vision. For the judging, names were removed from the submissions to eliminate bias. The judges' scores were tallied to identify the three top winners.

DWT awarded cash prizes of \$500, \$250, and \$100 to the authors of the three highest-scoring essays. *Computers in Libraries* magazine offered in advance to publish the top essay, and the *Computers in Libraries* conference will be recognizing the top winner by including him in a panel discussion with federated search experts Frank Cervone and Jeff Wisniewski. In addition to awarding cash prizes, DWT will pay conference-related travel expenses.



## Winners of the second and third prizes were as follows:

**2nd place:** **Steven Bell**  
*Associate University Librarian for  
Research and Instructional Services  
Temple University, Philadelphia, Pa.*

**3rd place:** **Lee LeBlanc**  
*Contributing Author, Tame the Web  
Continuing Education/Emerging  
Technologies Coordinator  
Southwest Florida Library Network*



and data sources to trusted entities. By 2018, storage will be so extensive, inexpensive, and ubiquitous that today's records management (RM) policies will be largely ineffective and—for lack of a better term—dead. Like it or not, everybody will save everything somewhere, probably in many places. RM will morph into more of a “know where it is and who has it” function than a matter of tracking the information life cycle or even worrying about destruction. The challenges we are wrestling with today in terms of privacy and data piracy will be solved by 2018, so don't be dissuaded by the “it's not secure” argument. The world will change *greatly* in 10 years.

These “data locator” companies (for lack of a better term) will maintain the data maps, understand the data formats, and manage permissions—very important to companies and individuals alike. They will also manage the indexing of such information—by 2018, there are likely to be some baseline standards, at least, for indexes. These companies will likely differentiate themselves in the type and depth of indexes they provide, and we will pay them with ongoing subscription or service fees as we do today in corporate and consumer worlds alike. As content aggregation becomes a larger challenge in Web 2.0 and 3.0 worlds, and as mashups become the online “language” of the masses, companies in the content business today—companies such as Yahoo! or even Ask.com—may well become the data management companies of the next decade, either by design or by default.

A whole separate infrastructure will also evolve around the “data federators.” These companies may in some cases be the same companies as those maintaining the indexes and data maps but some will probably be different companies as well. If you question the logic behind that, look at the travel industry: Despite the ubiquity of Amadeus' and Sabre's online booking solutions, Pegasus Solutions is an integral data handshake partner between these compa-

nies and the rest of the connected travel world. (Yet you've probably never heard of Pegasus.) Electronic “glue” is a specialization. A company such as Google, whose success is based largely on advertising monetization of search results, may be in a perfect position to provide such services. Then again, its very success and focus on paid-for promotion, selection, etc., may put it in a different market entirely. Its launch in 2008 of its own web browser may portend that in 10 years Google is an entertainment company. Sound surprising? It shouldn't be—after all, NBC started “tele-vision broadcasts” in 1936 as a way for RCA and others to test “next-generation” receivers and transmission equipment. That paved the way for television, and today, NBC is an entertainment powerhouse that doesn't even own radio stations any longer.

### Search as we know it today will go the way of the car phone and ship-to-shore calling.

These “data federators” will provide the “glue” between the many disparate data locator companies that are maintaining and managing stored information. Being a federator won't be easy (or inexpensive). Worse, the technologies to make this happen don't really exist in 2008. Still, in a decade the ultimate user won't know or want to care (unless something goes wrong) how they can find data across disparate locations, but they will expect it to happen seamlessly.

This is because in 2018 search will be as “dead” as calendaring software is in 2008. Typical users will invoke “search” as part of other, more routine functions. A simple, persistent “?” box on their browser, cell, or entertainment screens may initiate a search routine that presupposes the question based on what the

user was doing and even the keystrokes they invoked previously, perhaps using historical data as well. An interactive dialog box will engage the user and the system. It will pose its own questions to the user and, based on their response, will go out and find the appropriate or desired information. This dialog will be intelligent enough to anticipate user queries based on workflows or routine tasks and even “push” information to users.

In 2018, virtually every search will be a “federated” search. Search as we know it today will go the way of the car phone and ship-to-shore calling. “Search” in tomorrow will simply represent the end product from a highly optimized, wide-ranging net of information providers, mappers, and servers, who function largely out of sight of the general user.

In the early 20th century, Sears Roebuck sold an “Electric Motor” in its catalog, which extolled the many uses of this novel technology, and on the facing page actually provided a choice of “attachments” that would enable that motor to perform routine tasks such as running a water pump, turning a washing machine, and even running a cooling fan. Today, if you could even find a purveyor of just “electric motors,” their first question to you would be, “What are you going to use it for?” And if you do need an “electric motor,” say, to power your washing machine, you're going to contact an appliance repair specialist and they would be the one providing and installing it—you would never be directly involved. In the same way, “federated search” will become a significant but very “behind-the-scenes” part of how we interact every day with the digital world of 2018. 



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