

Is Travel Search the Big News for 2005?

As the technology behind search engines becomes yet more sophisticated, a new generation of travel search engines is in the offing, led by the competition between Google, Microsoft and Yahoo. But also in the running are new ventures such as kayak.com - a beta-testing comparison-shopping website created by the co-founders of Orbitz, Travelocity and Expedia - as well as SideStepHotels.com. And more is promised with the development of the Semantic Web.

According to PhoCusWright, online consumers look through an average of 3.6 sites before buying an airline ticket. With that level of traffic in mind, the founders of Kayak.com are introducing a travel-focused search engine that scours over 60 online travel sites, providing prices and itineraries for more than 550 airlines and 85,000 international hotels.

The directors claim that their results page displays more choice of available itinerary/price combinations than any other online travel site. It includes MultiBookT, a technology that lets the consumer choose where to purchase the preferred itinerary. This is also claimed to be the first travel search engine to offer consumers the ability to access user-created reviews and ratings as well as other relevant travel information.

Hotel groups already signed up to the venture include Fairmont Hotels and Resorts, Hyatt Hotels and Resorts, InterContinental Hotels Group, Starwood Hotels and Resorts. America Online has taken a minority shareholding in Kayak that will result in a new AOL travel search engine powered by Kayak technology. Yahoo insist that the new product will not displace online agencies, such as existing AOL partner Travelocity.

The introduction of Kayak follows the decision by Sidestep - the California, US-based travel search engine launched in 2000 and based on a downloadable toolbar - to make its travel search capabilities available via the Web. Starting with the introduction of hotel search (sidestephotels.com) in March this year, the company has added car search and is about to add flight search. Sidestep report that more than two million people turn to their search engine each month to find hotel, car and flight details. Once a selection is made, the consumer is transferred direct to the relevant supplier to book their reservations.

Looking Ahead

While the momentum behind search engine technology has accelerated in recent months, the best is yet to come, if the boffins behind the development of the Next Big Thing - the Semantic Web - are to get their way. The initiative is run under the aegis of the World Wide Web Consortium, based at MIT and whose director is Tim Berners-Lee - the Englishman who invented the World Wide Web.

Introducing the Semantic Web, Berners-Lee comments, "The Web was designed as an information space, with the goal that it should be useful not only for human-human communication, but also that machines would be able to participate and help.

"One of the major obstacles to this has been the fact that most information on the Web is designed for human consumption, and even if it was derived from a database with well defined meanings (in at least some terms) for its columns, that the structure of the data is not evident to a robot browsing the web. Leaving aside the artificial intelligence problem of training machines to behave like people, the Semantic Web approach instead develops languages for expressing information in a machine processable form."

The goal of the Semantic Web initiative is to smoothly interconnect personal information management, enterprise application integration, and the global sharing of commercial, scientific and cultural data. Facilities to put machine-understandable data on the Web are quickly becoming a high priority for many organizations, individuals and communities. The Web can reach its full potential only if it becomes a place where data can be shared and processed by automated tools as well as by people. For the Web to scale, tomorrow's programs must be able to share and process data even when these programs have been designed totally independently. The Semantic Web is an initiative of the World Wide Web Consortium (W3C) designed to provide a leadership role in defining this Web. It develops open specifications for those technologies that are ready for large scale deployment, and identifies, through open source advanced development, the infrastructure components that will be necessary to scale in the Web in the future.

Engines of the Future

Tim Berners-Lee had this to say about the evolution of search engines when he began work on the Semantic Web in 1998: "While search engines which index HTML pages find many answers to searches and cover a huge part of the Web, then return many inappropriate answers. There is no notion of "correctness" to such searches.

"By contrast, logical engines have typically been able to restrict their output to that which is a provably correct answer, but have suffered from the inability to rummage through the mass of intertwined data to construct valid answers. The combinatorial explosion of possibilities to be traced has been quite intractable.

"However, the scale upon which search engines have been successful may force us to re-examine our assumptions here. If an engine of the future combines a reasoning engine with a search engine, it may be able to get the best of both worlds, and actually be able to construct proofs in a certain number of cases of very real impact. It will be able to reach out to indexes which contain very complete lists of all occurrences of a given term, and then use logic to weed out all but those which can be of use in solving the given problem.

"So while nothing will make the combinatorial explosion go away, many real life problems can be solved using just a few (say two) steps of inference out on the wild web, the rest of the reasoning being in a realm in which proofs are given, or there are constraints and well understood computable algorithms. I also expect a strong commercial incentive to develop engines and algorithms which will efficiently tackle specific types of problem. This may involve making caches of intermediate results much analogous to the search engines' indexes of today.

"Though there will still not be a machine which can guarantee to answer arbitrary questions, the power to answer real questions which are the stuff of our daily lives and especially of commerce may be quite remarkable." (w3.org/DesignIssues/Semantic)