

## A Wolf at the door of Google?

By Shaun Morgan, PDMS



After 10 plus years of extraordinary growth and innovation Google has become an unstoppable Internet juggernaut. So it's a brave person that dares to predict the potential demise of Google's dominance of all things related to Internet search.

And yet, this month, experts in the field reckon we might soon witness a paradigm shift in the way we search the web. Of course, such talk may be wishful thinking. Those who lead the market have always been a target for the chasing pack, but any attempt to dislodge Google from its dominant position warrants investigation. So what's causing the fuss?

The wolf, in this case, is one Dr Stephen Wolfram – a British-born physicist and chief architect behind a new 'computational knowledge engine' called Wolfram Alpha ([www.wolframalpha.com](http://www.wolframalpha.com)). Okay, it sounds complicated and I strongly suspect that the science 'under the bonnet' is well beyond the comprehension of mere mortals like myself. However, bear with me because the basic principles are simple enough. According to The Independent newspaper we can think of Wolfram Alpha as; 'a global store of information that understands and responds to ordinary language in the same way a person does'. In other words, the site (which had not yet launched at time of writing) will return results from questions asked in everyday language.

If we are to believe the pre-launch hype, we might be witnessing a significant step forward in the pursuit of artificial intelligence. The real innovation is its ability to cross-reference disparate data sources and compute answers 'on the fly'. This isn't a search and match process involving questions and the related answers, nor is it an electronic document retrieval system. Instead Wolfram Alpha understands the nature of a question asked (even if it's a question never before asked) and computes the answer by drawing on a vast archive of vetted, factual, knowledge. This means new combinations, new connections and new insights can be gained from the system – the potential is limited only by our imagination.

Now, this kind of interaction with technology has been the holy grail for computer scientists for many years – and, indeed, many similar services exist (e.g. Start Project). What makes Wolfram Alpha different is the sheer scale, complexity and effectiveness of the underpinning technology.

Impressive though Wolfram Alpha is, there are some significant limitations to this technology. For a start, the system is designed to answer questions where the answer is unambiguous: 'How tall is the Eiffel Tower?', 'What year did Henry VIII become king of England?', 'How many different blood groups are there?'. Don't expect definitive answers to such questions as: 'What is the meaning of life?' or 'How can I get rich before Christmas?'. Furthermore, although a vast amount of information is available from various sources, much of it is technical and scientific and not therefore related to popular culture. Questions regarding your favourite soap opera, hip-hop band, celebrity challenge show, and the like, could possibly go unanswered. One might predict that such a gap will be quickly filled and, in fairness, results returned by the site carry links to external sources such as Wikipedia.

There are some fairly significant philosophical issues to consider too. For example, who will ensure that the answers aren't biased? Who will adjudicate on issues of contention (e.g. such as global warming)? And, what of the logistical challenge of keeping the knowledge up to date?

Regardless of these issues, if Wolfram Alpha lives up to the pre-launch hype we can expect a new dawn in the way we interact with the Internet and computers in general. But for all its ingenious technology, it isn't, as Nova Spivack from Twine.com points out, a simulation of the human brain – it doesn't have feelings or opinions and it certainly isn't self-aware. It is, rather, a very powerful calculator. It is a tool, a piece of technology, that cleverly combines linguistic and mathematical analysis with vast archives of factual information. It will be invaluable for teachers and students, engineers of all flavours, medical practitioners, financiers, civil servants and the many others who might be in pursuit of such factual knowledge.

Wolfram Alpha is different, but talk of displacing Google may perhaps be a little premature, as Stephen Wolfram himself acknowledges. The general consensus from those writing in the blogosphere is that Google will be just fine because Wolfram Alpha is just different. But these things have a habit of taking on a life of their own and who knows where things might lead – collaboration with technology partners, potential competitors even, is certainly a possibility for the future. Wolfram Alpha is a 20 year project at the very least and a lot can obviously happen in that timeframe.

So yes, I've contributed to the hype surrounding the launch of Wolfram Alpha. It might be the most exciting web related development since the emergence of the social networking phenomenon. Then again, it might get swallowed up by a rival, or lose momentum and fizzle out. Having watched Stephen Wolfram demonstrate the site's capabilities on YouTube, I wonder why the project hasn't had a higher public profile before now. Nevertheless, I'm amazed by Wolfram Alpha's apparent power and flexibility.

One thing is for sure, anticipation is running high amongst web-watchers and Dr Stephen Wolfram is a very ambitious man with an outstanding track record. It's certainly a website to watch out for, and remember, you heard about it here first!