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Industry Watch

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"Powerset Hype to Boiling Point", said a February headline on *TechCrunch*.[1] In the last installment of this column, I asked whether 2007 would be the year of question-answering. My query was occasioned by a number of new attempts at natural language question-answering that were being promoted in the marketplace as the next advance upon search, and particularly by the buzz around the stealth-mode natural language search company Powerset. That buzz continued with a major news item in the first quarter of this year: in February, Xerox PARC and PowerSet struck a much-anticipated deal whereby PowerSet won exclusive rights to use PARC's natural language technology, as announced in a VentureBeat posting.[2] Following the scoop, other news sources drew the battle lines with titles like "Can natural language search bring down Google?", "Xerox vs. Google?", and "Powerset and Xerox PARC team up to beat Google". An April posting on Barron's Online noted that an analyst at Global Equities Research had cited Powerset in his downgrading of Google from Buy to Neutral.[3] And, all this on the basis of a product which, at the time of writing, very few people have actually seen. Indications are that the search engine is expected to go live by the end of the year, so we have a few more months to wait to see whether this really is a Google-killer. Meanwhile, another question remaining unanswered is what happened to the Powerset engineer who seemed less sure about the technology's capabilities: see the segment at the end of D7TV's PartyCrasher video from the Powerset launch party.[4] For a more confident appraisal of natural language search, check out the podcast of Barney Pell, CEO of Powerset, giving a lecture at the University of California–Berkeley.[5]

The other big news item in the first quarter of the year was Microsoft's acquisition of TellMe (`www.tellme.com`) in March for somewhere around $800 million[6] – that's Microsoft's biggest acquisition since 2002, when it acquired Danish software vendor

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Industry Watch is a semi-regular column that looks at commercial applications of natural language technology. The author can be contacted at `rdale@acm.org`.

[1] `www.techcrunch.com/2007/02/09/powerset-hype-to-boiling-point/`
[2] `http://venturebeat.com/2007/02/08/powersets-search-technology-scoop-may-scare-google/`
[3] `http://blogs.barrons.com/techtraderdaily/2007/04/03/heres-a-novelty-a-downgrade-for-google/`
[4] `http://venturebeat.com/2007/02/12/powerset-raising-more-money/`
[5] `http://groups.sims.berkeley.edu/podcast/?p=12`
[6] `www.techcrunch.com/2007/03/14/microsoft-acquires-tellme/`

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Navision for US$1.45 billion.[7] TellMe is one of a small number of companies that provide hosted voice recognition services built around the VoiceXML standard: as a developer, you create your dialogue application in VoiceXML, and TellMe ties your VoiceXML pages to a telephone number through which you gain access to TellMe's VoiceXML interpreter and speech recognition and synthesis engines, giving you an easy entry point into the world of building real working voice applications.

So why did Microsoft buy TellMe? Well, in late February, BeVocal – TellMe's closest rival – announced its agreement to be acquired by Nuance in a deal valued at about $140 million,[8] so maybe it was just fashionable to buy a voice-systems hosting service. But a much more important reason for Microsoft would be to get a leg up in voice-activated search, which is becoming a very hot area. In April 2006, Google was awarded a patent for a voice interface for a search engine, described as "a system [which] provides search results from a voice search query". The company has been playing around with this technology for a while; and at the beginning of April, just as this piece was being written, Google launched a free 411 service (that's the North American directory assistance number) that uses voice recognition to return search results over the phone.[9] You tell the system your city and state, and then ask for a specific business or business category. Mobile phone users can get listings sent to their phone via SMS, including the telephone number and full address. About 2.6 billion 411 calls – worth $7 billion – are made in the United States each year, so Google's free offering will cause a few concerns.

There are, of course, a number of smaller companies in the voice-activated search area too. Just before Google's announcement, V-Enable (www.v-enable.com) launched a voice-driven 411 service supported by advertising[10]; but as one comment on a blog discussing Google's offering put it, "Google kills another segment. bang, dead."[11]

In the December 2006 installment of this column, I pointed to ClearForest's SWS mashup contest, which encouraged the development of Web apps that use the named entity recognition technology they had made available as a Web service. The winners of that competition have now been announced.[12] First prize went to an application called News Tracker,[13] which allows you to navigate news content by person, place, organization, company and a range of other elements. The application loads RSS news feeds from MSNBC.com, and then uses the ClearForest Web services to extract named entities and meaningful terms. Six Degrees of Separation[14] is another

[7] www.microsoft.com/presspass/press/2002/jul02/07-11navisionacquisitionpr.mspx
[8] www.bevocal.com/corporateweb/press-releases/pr_0222200701.html
[9] http://labs.google.com/goog411/
[10] www.v-enable.com/pr/Mobile411_pr.pdf
[11] http://digg.com/tech_news/Google_Launches_Free_411_Service
[12] See http://sws.clearforest.com/Blog/?p=37
[13] www.optevi.net/newstracker
[14] www.francisshanahan.com/sixdegrees

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interesting mashup that shows connections between named entities by following chains of co-occurrences in news stories.

In the December column, I also pointed to named entity recognition on the desktop in the form of Inxight's Search Extender; now ClearForest has gone one better by releasing Gnosis, a plug-in for the Firefox Web browser that will, on request, run named entity recognition on the Web page you are reading. Very neat; check it out at `http://gnosis.clearforest.com`.

I can't resist clever and fun uses of speech technology. The SmartShopper uses Nuance voice recognition technology to help you with your shopping lists.[15] You press a button on the slightly-larger-than-hand-held device, say the item you need, and it's added to your shopping list. When you're ready to hit the supermarket, you press the print button, and out pops a full list created by the device's internal thermal printer. You can also add errands like 'bank' and 'car wash', and these get printed out at the top of the grocery list. Yours for US$149.99.

Or, if you are looking for a slightly cheaper present for the one you love, check out Hammacher Schlemmer's Voice Interactive Alarm Clock.[16] The clock responds to voice commands, prompted by the trigger phrase 'Alarm Clock'; you can then access various functions via commands like 'What time is it,' 'Play Memo,' and 'Night Light'. Don't want to get up yet? Just say 'Snooze' to get ten more minutes of sleep. A dream at US$59.95.

The two items above fall into the category of boxes-with-buttons devices that look like a large PDA or TV remote control. But an interesting trend is the appearance of devices where the speech recognition capability is paired with a more (well, *slightly* more) humanoid form. Tired of typing your blog? NEC has developed a 'blogbot', based on their PaPeRo robot[17]: you tell PaPeRo about your day, and the robot records and analyses what you have said; it then searches for relevant multimedia content on the Internet, including images and music, and uploads these along with the video recording to your blog (Figure 1).

Or, you might wait for the Chapit, a toy-like robot from Fuji Housing company in Japan. The robot has voice-recognition capabilities and can apparently understand 'up to 10,000 different commands'; the idea is that you just hook the robot up to your home automation system and it's ready to take your instructions. Developed by Japanese firm RayTron, the device is already on view in a showroom at a high-tech model housing development called Napia in Osaka, but will not be available commercially until next year; the price is expected to be 200k yen, or about US$1,700.[18]

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[15] `www.smartshopperusa.com`
[16] `www.newlaunches.com/archives/the_voice_interactive_alarm_clock_.php`
[17] `www.e4engineering.com/Articles/298504/Introducing+the+blogbot.htm`
[18] `www.trendhunter.com/trends/toy-like-robot-the-chapit`

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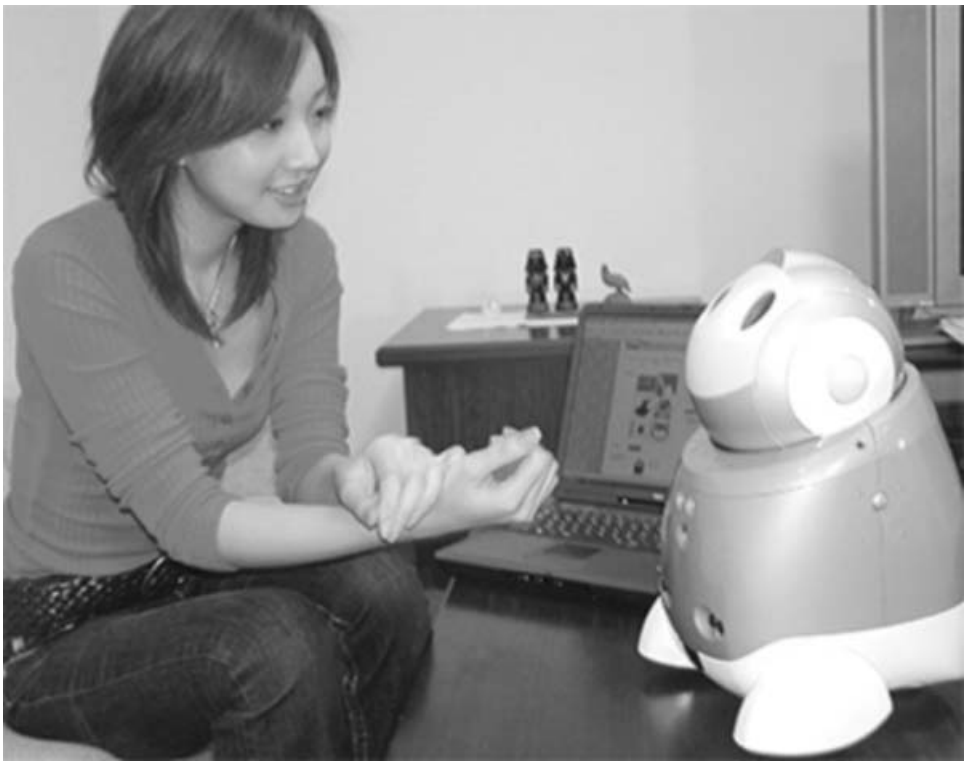


Fig. 1. Image courtesy of NEC Corporation. Unauthorized use not permitted.

Finally, a random selection of interesting language technology applications that have appeared in the last few months.

In late January, BooRah (www.boorah.com) launched an online personalized restaurant review guide; the system uses 'patent-pending Natural Language Processing technology to find, summarize and present information from across the web'; and Midomi (www.midomi.com) launched a 'Music Social Network', incorporating a facility that allows you to search for music by singing or humming part of a song. In February, SimulScribe announced that its voice-mail-to-text service is now available for Skype users: the technology converts voice messages to text that it then sends via either SMS or e-mail.[19] In March, WordChamp (www.wordchamp.com) launched its Language Toolbar, a Firefox plug-in that allows you to see translations for difficult words and to hear words pronounced by native speakers, simply by pointing at words on foreign language Web sites: point your mouse at any word on the page and a small box will pop up, containing translations for that word, along with a click-to-hear icon.

But my favourite of all the new things this quarter is Teragram's late-March launch of MyGADs.com, an online service that allows users to create, share and search personalized collections of information, known as GADs, using text messaging, IM

[19] http://press-releases.techwhack.com/8492/simulscribe/

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and the Web. Once a GAD is created, users can initiate a simple dialogue to retrieve or add information using text messages, instant messages or the Web. This is another neat idea, summed up well in Teragram's own press release[20]:

> Storing information on a GAD is easy. Once a user is enrolled, they can add a statement, such as 'Jill birthday is 6/4/83.' MyGADs.com acknowledges the added information by responding, 'Statement Added.' Now, the user can access this information on a mobile phone by texting queries, such as 'What is Jill's birthday?' MyGADs.com responds, '6/4/83.'

GADs are also prepopulated with local information like weather and encyclopedic information gleaned from Wikipedia. There's lots of scope for convergence here with the voice-activated services mentioned earlier. Voice mashups, anyone?

[20] www.teragram.com/news/pr20070327mygads.html

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