

## HP Labs Working On Indian Language Acoustic Model

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**Mumbai:** HP Labs India plans to develop an Indian language acoustic model and an Indian language text-to-speech system which will allow for speech interfaces with a computer. The lab is also actively looking at collaborating with academic institutions in India for the project.

The research will also augment HP's e-Inclusion efforts - a business initiative with a social mission to bridge the digital divide and broaden access to social and economic opportunities in traditionally underserved markets, HP Labs India director Dr Srinivasan Ramani told eFE on the sidelines of the ongoing IIC 2002 seminar in Mumbai.

The lab has developed a prototype speech interface in Hindi and Telegu which was demonstrated at the seminar. While this prototype uses the English acoustic model, Dr Ramani explained that once an Indian acoustic model is developed, a computer will be able to identify the spoken word in the two languages more accurately.

Dr Ramani said the first Indian language acoustic model will most probably be in Hindi. The advantage with developing an acoustic model in Devnagiri is that it will be easier to develop speech interface for a number of Indian languages like Gujarati or Bengali, which use derivatives of the Devnagiri script.

Dr Ramani explained that speech communication provides an alternative to the keyboard and mouse interface for a number of computer applications.

While there are 5000 languages in the world, the Internet is predominantly in English while the Indian population of about 1050 million including a rural population of about 750 million speak 18 national languages.

"Our job is to cater to those who cannot avail of the English language service on the Net. The usage of the telephone is vast when compared to access to the Internet. The access device is a simple phone and one does not have to have one at home," he said.

"We visualise information content being carried essentially over the Internet, but visualise the large-scale use of the phone and cellular phone networks for increasing access to this information. Basically, a

person should be able to call on a given telephone number and the computer should be able to provide the information he is seeking," he says.

Dwelling on how this technology would be different from the Interactive Voice Response (IVR) system, he said that in IVR, a person dials a number and keeps indicating his preferences thereon by pushing buttons. In the speech interface, however, one talks to the device and uses words to indicate the choice. The other technology the lab plans on developing is the text-to-speech system. This system will allow for dynamic information in written form in a text format to be made available in spoken form. While the prototype demonstrated at the event did not have this capability, Dr Ramani explained that the lab has already collaborated with institutions like IIT Madras and IISc.