



Vern Version

With companies such as HP, Microsoft, Red Hat, NIIT, and Reliance putting serious money into it, the vernacular computing market in India looks set to bloom in 2003.

As revolutions go, this is a quiet one. It has its beginnings in hundreds of villages such as Madantusi in Uttar Pradesh, where children exposed to computers and the net have their own unique lexicon, dumroo (drum in Hindi) for the hourglass icon and sui (needle) for the cursor. Sify and Rediff, portals with local language sites and Hindi-site Webdunia (its user base has almost trebled from 426,310 to 12,44,493 since 2000) are card-carrying members. And converts to the cause include the likes of hp, Microsoft, Red Hat, Reliance, C-DAC, and Mumbai-based start-up Netcore Solutions. Welcome to the great Indian language computing offensive.

Efforts to take computing to the masses are as old as computing itself but it is the internet-and the hundreds of web-based applications following in its wake-that has endowed them with a sense of relevance and purpose. The most visible manifestation of this is content (See Why Language Makes Sense). "The internet is a self-organising system," says Sugata Mitra, the Chief Scientist at computer education firm NIIT-Madantusi is one of the 100-odd villages covered under its Minimally Invasive Education initiative. "As content providers see enough people to cater to, they begin to cater to them; what we are seeing now is the beginning of the movement." And with the net breaking the ice with a hitherto computer-shy audience, companies are queued up in the wings with their own vern versions.

The Engine Inside

Software is an obvious gambit. By 2003-end Microsoft will launch Hindi versions of Windows XP and Office 11. Around the same time, if not earlier, Red Hat will be out with a Hindi-enabled version 9.1 (built around Linux). Both are priced offerings but Red Hat's software can, unlike Microsoft's, be copied on to several machines. After all, Red Hat is an advocate of the Free Software, or Open Source Software movement. Several hundred developers who swear by Open Source are working towards making the layers that go over the operating system support local languages. Part of the umbrella gnu (a recursive acronym that stands for gnu's Not Unix) system this includes the gnome layer (gnu Network Object Model Environment), a sort of Windows-like desktop system for non-Windows environments and the Graphical User Interface (GUI).

Linux is one kernel around which gnu systems are built-the Free Software Foundation has its own kernel of choice, HURD-and most local language experiments use it. "We see a definite demand for localisation and from a Linux standpoint a lot of work is happening since anyone can take on this work," says Javed Tapia, Director, Red Hat India, referring to the fact that any developer is free to participate in the movement to provide local language support on the gnu/Linux system. The result is a rash of activity among developer communities (and companies) across the country (See Languages R Us). "gnu systems are becoming very popular at both at the



government and enterprise level-it's not just about cost, the technology helps us to share, distribute and improve; that these systems are economical is incidental" says Nagarjuna G., Director, Free Software Foundation of India and a scientist at the Tata Institute of Fundamental Research, Mumbai.

Several governments (and arms of governments), non-governmental organisations and educational institutions are currently working on Open Source support for languages. Microsoft's reaction to a body of work that could change the face of the market is predictable. "Drill down a little on the Open Source work and you will find a reinvention of the wheel," says Raveesh Gupta, Program Manager, Localisation, Microsoft India. "Why replicate all the work on another platform?"

The real issue, according to Gupta, isn't about who is doing what, but about adopting a common standard for application development. The man isn't far off the mark-this is the refrain of anyone involved in creating language software. The problem is that developers of Indian language software have been following proprietary standards. That means data stored in one software cannot be transferred to another, at least not without expending time and money. That goes against the cross-platform philosophy that resides at the heart of computing today and has raised the hackles of anyone involved with local language computing development. "It is a big issue. Without some agreed-upon standard, even simple things we have come to expect from most applications, like cut-and-paste are not possible" says San Francisco-based Tapan Parikh, the founder of EkGaon a company that develops Indian language websites and applications.

There is a solution-the adoption of the Unicode standard for all Indian languages. For those who came in late, Unicode is a standard that represents characters as integers. The widely used ASCII (American Standard Code for Information Exchange) code uses 7 bits for each character; Unicode does 16. Ergo, it can represent some 65,000 unique characters, making it just the thing for a multi-language pan-Indian software.

The problem is that developer groups working on some Indian languages feel Unicode does not support some fundamental characters. The government has now stepped in and is trying to resolve the issue. "We are in the midst of a trial or suggested version of Unicode. There is no controversy, but some southern languages need more number of letters and combinations, they need more space. Also there are more samyuktaksharas (combined letters) in these languages," says P.K. Chaturvedi, Director, Ministry of Information Technology. Still, Unicode won't solve a bigger problem threatening the spread of language computing-access.

Where's The Chassis?

Access has long been a hurdle to the spread of computing in India. Some analysts reckon PCs will have to cost a seventh what they do now before computing can reach the masses. That's where Mumbai-based Netcore Solutions comes in. The company, promoted by Rajesh Jain-the same lucky man who sold Indiaworld to Satyam for close to Rs 500 crore-has an altogether different game plan to take access to the



masses. "We are at the topmost layer of the pyramid as far as pc and Net penetration go with just about 10 million net users and 2 million pc owners," says Jain. "The next three years will be about reaching the 100 million mark for net users and how are we going to do it? The approach has to be bottom up-it's about making technology accessible to people and language is a big component of that." Jain is currently in the process of taking his desktop pc, branded Emergic Freedom to the market. One model of the pc that will be enabled in Hindi (right from the os to the Graphical User Interface) will be priced as low as Rs 5,000. How does Netcore plan to do it? For starters, the pc will run totally on Open Source software-that cuts out licence fees. Then, based on Jain's belief that most users do not really want hard disks, but simple access devices that can connect to a network, Emergic Freedom will be a network pc of sorts (Netcore is in discussions with cable operators and other possible partners to create a server centric computing environment). And finally, the company will cannibalise old boxes or discarded PCs to really drive down the price.

Only time will tell whether Jain's gamble works but the urgent need to drive down pc prices dramatically to catch the next wave of users is indisputable. In fact hp Labs India has internalised the need enough to actually call one of its language systems divisions "Affordable Access Devices". hp Labs India is currently working on developing an access device called Scriptmail where mail can actually be written by hand and then, through a simple interface, carried on the Internet. Another interesting project at hp Labs India is the Directed Dialogue System whereby users can actually call out questions into phones and have answers called out to them from existing databases, thanks to an online voice-enabled Indian language system. "There are five times as many telephone users in India as net users and this is a system which will make use of that existing base" explains Srinivasan Ramani, Research Director, hp Labs India.

Government-run C-DAC is also trying its hand at manufacturing and selling a language-enabled device on a commercial scale. The Pocket Translator, originally developed for tourists, is now being Internet-enabled and the organisation is approaching manufacturers with a view to launching the product this year, says R.K. Arora, Executive Director, C-DAC.

From the myriad efforts underway to kick-start language computing, it is evident that India is at the threshold of a vern wave. One trigger could be all it takes to create a commercially significant user base. That could be Netcore's pc, a new access device, or anything else. This is a revolution waiting to happen.