**Introduction**

At Prologix they endeavour to research and develop new ways of voice enabling computer applications. Their interest in voice interfaces, speech production, analysis and transport has caused us to work with technologies such as broadband, real time media over IP, telephony and NGN that hold the promise of delivering a variety of communication services that were beyond our imagination till very recently.

**Name of Local Language Applications/Products Developed**: Vaachak

**Major Features**

- Text to Speech Framework for Indian Languages; Concatanative Synthesis; High Level of clarity of phonemes with ability to control speech properties like pitch and rate; Unicode compliant, no limitation of fonts; Supports both male and female voices; Available for both Windows and Linux platforms (platform independent); Can work as a plug-in for MS-Office applications to read hindu text; Ideal for telecom environments.

**Applications:**

- Communications - email reader, notifications, email/ news over telephone, Hindi messaging, Hindi paging for mobile telephony users.
- Education and Literacy.
- Services - information like election/examination results, teleservices, health updates, travel information over telephone.
- E-Governance - Land Records information over telephone, election services such as polling center information, access to text information over telephone, Complaint tracking/monitoring for government.

**Availability:**

- Desktop version: to run applications like email/document reading off a personal computer.
- Vaachak™ TTS ServerLite edition: For low usage applications in which the TTS server may be run in conjunction with the Application host.

- Currently supports Devanagiri supported languages - Hindi, Sanskrit, Marathi, Konkani.
- Natural and Pleasant sounding synthesized speech.
- Large custom dictionary implementation to handle abbreviations, special pronunciations.
- Multiple Male/ Female voices.
- Supports both Unicode and ISCII input.
- Available in Client Server and Desktop editions.
- Ability to control pitch/ tempo of speech.
- Rule based approach helps control:
- Option to speak numbers as individual digits (phone numbers, etc.)
- Indian Currency (Rupees, Paise), Arabic Number System (Crore, Lakh, etc.), Decimal digits.
Features:

- The **first, high quality Indian Language Text to Speech Software** for Indian Languages.
- Cutting edge technology used to create life-like, natural sounding speech.
- Currently supports **Hindi** – ongoing work for Indian English and 7 other major Indian languages.
- Domain independence – no restrictions on vocabulary/ domain of text.
- Multiple Male/ Female voices for different kinds of applications.
- Large custom dictionary implementation to handle abbreviations, special pronunciations.
- Can be customised to create specialised, custom voices or ‘voice brands’ for large organisations.
- Windows XP/ Me/ 2000/ NT/ 98/ 95, Linux compliant.
- **Text Input:**
  - Supports **Romanised Hindi** (Transliteration) input.
  - Supports both Unicode and ISClI Devanagiri input.
  - Support for **Third party fonts and font families** e.g. Akshar, APS, Akshara, ISM, Leap, Chanakya, Shusha, Shivaji, Kruti Series & popular fonts such as Agra, Krishna and Chandni.
  - Rule based approach helps control:
    - Option to speak numbers as individual digits (phone numbers, etc.)
    - Indian Currency (Rupees, Paise), Indian Number System (Crore, Lakh, etc.), Decimal digits.
- **Applications:**
  a) **Communications** – Email/ Document reader, Automatic voice overs to Hindi presentations, Readout of Hindi websites, Notification alerts, Email/ News over telephone, Hindi messaging, etc.
  b) **Education and Literacy** – Readout text from Hindi e-books, teaching aids, electronic blackboards, talking toys, slates; Aid Hindi learning/ propagation of Hindi; Disseminating adult education to farmers, rural population over Info-Thelas/ Cyber Kiosks/ Community Information Centres, etc.
  c) **Services** – Election/ examination results, Health updates, Travel information, Traffic updates over telephone; Directory enquiry services, Voice portals, Hindi SMS to speech, Telematics, Location locators, Name readout of Indian names in Roman, etc.
  d) **E-Governance** – Land Records information over telephone, Election services such as polling center information, Mandi prices, Govt. policy information, Application tracking/monitoring, Information dispersal through digital mandi’s, kiosks, etc.
- **Availability:**
  a) **Desktop:**
    - As a SAPI compliant library for developers, ISVs, System Integrators – for desktops/ kiosks.
    - As a Plug-in for MS Office on PCs – enables read out of documents, spreadsheets, presentations, websites, etc.
    - *Microsoft Office 2003, Office XP, Office 2000, Office 97 compliant*
  b) **Vaachak™ TTS Server edition:** For high performance IVR/ enterprise environments – as a SAPI compliant SDK.
c) Low resource platforms such as PocketPC: Successfully integrated with PocketPC/WinCE. Can be easily integrated with Handheld platforms such as Simputer, Symbian, PalmOS and other embedded platforms.

Features:
- Incorporates advanced Artificial Intelligence techniques to be able to easily translate documents from English to Hindi.
- Developed using ‘AnglaBharati’ technology developed at IIT Kanpur.
- Provides multiple meanings, phrase options Enables:
  - Faster Translations.
  - Machine aided, accurate translation with low human involvement.
  - High degree of accuracy even for untrained version for generic translation.
- Allows users to select from multiple options in translated text.
- Flexibility to include new words in user lexicon
- Can be trained to provide higher accuracy in specific domains like scientific, medicine, agriculture, etc.
- Has the capability to differentiate between the contexts and translate the sentences correctly.
- Intelligently detects proper names/abbreviations, etc. in English and can decide to transliterate such text into Devanagiri instead of translation of the same.
- High degree of User configurability and control.
- Successfully clubbed with technologies like Optical Character Recognition for translating printed text automatically.
- Intuitive editor provided for editing translated text in desktop applications.
- Supports custom user dictionaries.
- Has been successfully integrated with advanced Hindi Text to Speech software: VaachakTM – to provide English text to Hindi speech translation capability.
- Windows 2000/ Linux 9.0 compatible.

Applications:
- a) Translating agendas, minutes of meeting, office communication, project documentation, etc.
- b) Translating system and support documents.
- c) Increase understanding of content by making it available in target audience’s language of comfort i.e. Hindi.
- d) Translating results of web searches, converting existing websites into Hindi.

Availability:
- a) Desktop: As a desktop based translation engine for simple translation requirements.
  - As an independent application that can allow for text to be easily translated from English to Hindi.
  - As an Office plug-in for instant translation of documents in MS Office.
- b) Server: As a Translation server for online translation over the organization’s intranet or over the Internet.

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