Voice Recognition Software: An Introduction

Who benefits?

Voice recognition software helps users from a number of groups:

- *People with physical disabilities will often find typing difficult, painful or impossible –* voice recognition software provides an alternative.

- *People with spelling difficulties*: recognised words are always correctly spelled – this can relieve some of the burden of writing for dyslexic users.

What, Why and Where?

What is it?	An alternative to typing on a keyboard. You talk to the computer and your words appear on the screen.
Why does it exist?	Most computer users cannot type as quickly as trained typists. The software has been developed to provide a fast method of writing onto a computer.
Where can it be used?	Several programs are available that provide voice recognition. Most require Windows 98 or above. Microsoft Word has voice recognition built-in to it.

How Does It Work?

Voice recognition software programs analyse sounds and convert them to text. They also use knowledge of how English is usually spoken to decide what the speaker most probably said. Once correctly set up, the systems should recognise around 95% of what is said if you speak clearly.

How Is It Used?

There are a number of voice recognition programs that can be used with Windows including a basic one that is supplied with Microsoft Office XP and 2003. Most specialist voice applications include a software CD, a microphone headset, a manual and a quick reference card.

You connect the microphone to the computer, either into the soundcard (sockets on the back of a computer) or via a USB connection. Then you can begin talking using the following steps.

Enrolment

Everybody sounds slightly different, so the first step in using a voice recognition system involves reading an article displayed on the screen. This process, called enrolment, takes less than 10 minutes and results in a set of files being created which tell the software how you speak.

The enrolment only has to be done once, after which the software can be started as needed.

Dictating and correcting

When talking, people often hesitate, mumble or slur their words. One of the key skills in using voice recognition software is learning how to talk clearly so that the computer can recognise what you are saying. This means planning what to say and then delivering speech in complete phrases or sentences.

The voice recognition software will misunderstand some of the words spoken and it is necessary to proof-read and then correct your mistakes. Corrections can be made by using the mouse and keyboard or by using your voice.

When corrections are made the voice recognition software will adapt and learn, so that (hopefully) the same mistake will not occur again. Accuracy should improve with careful dictation and correction.

In the example "typing" has been recognised as "20". To make the correction you say "correct-20" followed by "choose-2"
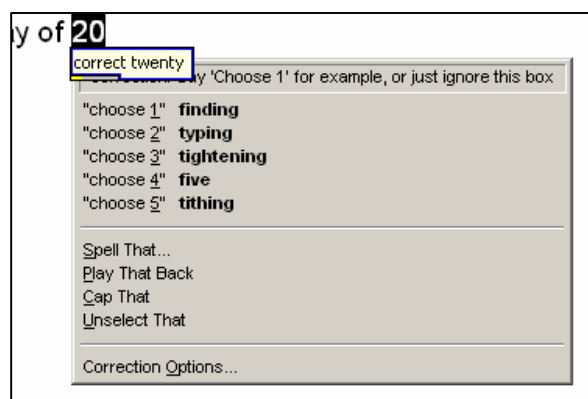
Editing and formatting text

Text can be changed (edited) very easily. The text to be changed can be selected (highlighted) by using commands like "select line", "select paragraph" and then the changes can be spoken into the computer. These will then replace the selected text.

Applying formatting is just as straightforward. For example, if a document has the phrase "introductory thoughts" then this phrase can be underlined by saying "Select-introductory-thoughts" and then saying "underline that".

Controlling the computer

Many voice recognition programs offer the ability to start and control programs through spoken commands. The commands vary between voice recognition programs.

- *For example*, with the program Dragon NaturallySpeaking you could say "Start Microsoft Word", then "Open letter to John".

- *Menus:* Menus can be selected simply by pausing and then saying the menu item. "File" would open the file menu

- *On the Internet,* web addresses can be dictated and web sites can be browsed simply by saying the text in the link.

- *For tasks that require a mouse:* (e.g. drawing) there are spoken commands to enable the mouse to be moved, dragged and clicked.

Some Example Programs

There are several main voice recognition programs available:

- **Dragon NaturallySpeaking:** this program is distributed by Scansoft www.scansoft.co.uk/naturallyspeaking. NaturallySpeaking is recognised as the market leader and is the alternative most frequently recommended by AbilityNet.

- **IBM ViaVoice:** This is also distributed by Scansoft. It offers good accuracy, but is not as easy to use as NaturallySpeaking. Further details at www.scansoft.co.uk/viavoice

- **Qpointer:** Qpointer provides good command and control facilities, but is not so good for writing tasks as is makes more recognition errors. Qpointer is distributed in the UK by Keytools www.keytools.com. It operates differently to NaturallySpeaking and ViaVoice and is reviewed separately

The programs most commonly recommended by AbilityNet are:

	Dragon NaturallySpeaking Preferred (approx £130)	Dragon Naturally Speaking Professional (approx £450)
Overview	A good choice for people with physical difficulties and dyslexia. - A comprehensive set of commands to allow voice control of the computer - Speech output facilities to help with corrections - It can be used with portable recorders	A more advanced version for business users and for people who need to work completely hands-free: - Voice commands for Lotus Notes and Microsoft Outlook. - The ability to write new voice commands to assist easy hands-free use of the computer
Alternative suppliers	www.scansoft.co.uk/naturallyspeaking/locator gives suppliers from around the country	
Web link	www.scansoft.co.uk/naturallyspeaking	

Training and Support

People who are new to voice recognition software often need to arrange a number of one-to-one training to get the most out of the software. There are a number of specialist suppliers of voice recognition solutions who can provide you with training suggest suitable computer systems and assist with installation.

Frequently Asked Questions

- *How is it affected by background noise*? The headset microphones supplied with the products are fairly good at filtering out background noise. If background noise is a particular issue then a higher specification microphone will be needed.

- *What about technical jargon*? Modern voice recognition systems already "know" thousands of words including much specialist language from the legal and medical fields. New words and phrases can be added and trained easily.

- *Is "voice strain" a risk?* When working with speech recognition systems, steps should be taken to minimise strain: sit comfortably; speak at a normal pitch/volume; take breaks and drink regularly.

- *What about catching colds?* Some people's voices change when they have a cold and this may result in slightly worse recognition.

- *How many people can use the software on one computer*? There is no limit on the number of users. Each one will require 20-30MB of space on the hard disk of the machine. Each person needs to load their own voice settings before they start to dictate.

- *Can the software be used to transcribe meetings*? No - they only work with one speaker at a time.

- *Can recording devices be used with speech recognition systems*? Yes – speech recorded onto pocket sized recorders can be transferred onto a PC and then "transcribed" to text. (See the AbilityNet factsheet "Voice Recognition: Advanced Features)

Troubleshooting

Voice recognition software may raise issues where users have certain difficulties or ways of working. Contact us to discuss these issues further.

- *The software runs too slowly:* voice recognition systems need relatively new computers with a lot of memory. We would suggest a minimum of a PIII 700Mhz processor with 512MB RAM.

- *Poor recognition*: this can be a problem if the computer is not getting a clear signal from the microphone or if the user is not speaking clearly.

- *Difficulty spotting mistakes in work*: this can be an issue particularly for dyslexic users. Choose a package that includes text-to-speech so that text can be spoken by the computer and reading avoided – then you can listen out for mistakes. For further information see the AbilityNet factsheets on "Text to Speech" and also "Voice Recognition and Dyslexia".

- *Difficulty using a headset microphone*: there are a number of alternative designs of microphone that can be used including: stand microphones; collar microphones; array microphones; hand-held microphones – one of these should work.

- *Impaired speech:* voice recognition software can adapt to non-standard speech. Some systems are better than others – seek advice.

Useful Factsheets

This sheet gives an overview of voice recognition software. The following information sheets are available to cover more advanced topics:

- Voice Recognition – Advanced Features and Concepts
- Dyslexia and Voice Recognition Software

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