SPECIALIST READING

A **Find the answers to these questions in the following text.**

1   What developments are driving the development of completely new interfaces?
2   What has inspired a whole cottage industry to develop to improve today's graphical user interface?
3   In what way have XML-based formats changed the user interface?
4   What type of computers are certain to benefit from speech technology?
5   Name a process where a mouse is particularly useful and a process where it is not so useful.
6   What facilities are multimodal interfaces likely to offer in the future?
7   What type of input device will be used to give vision to the user interface?
8   What development has led to an interest in intelligent agents?
9   List ways in which intelligent agents can be used.

USER INTERFACES

Cheaper and more powerful personal computers are making it possible to perform processor-intensive tasks on the desktop. Break-throughs in technology, such as speech recognition, are enabling new ways of interacting with computers. And the convergence of personal computers and consumer electronics devices is broadening the base of computer users and placing a new emphasis on ease of use. Together, these developments will drive the industry in the next few years to build the first completely new interfaces since SRI International and Xerox's Palo Alto Research Center did their pioneering research into graphical user interfaces (GUIs) in the 1970s.

True, it's unlikely that you'll be ready to toss out the keyboard and mouse any time soon. Indeed, a whole cottage industry - inspired by the hyperlinked design of the World Wide Web - has sprung up to improve today's graphical user interface. Companies are developing products that organize information graphically in more intuitive ways. XML-based formats enable users to view content, including local and network files, within a single browser interface. But it is the more dramatic innovations such as speech recognition that are poised to shake up interface design.

Speech will become a major component of user interfaces, and applications will be completely redesigned to incorporate speech input. Palm-size and handheld PCs, with their cramped keyboards and basic handwriting recognition, will benefit from speech technology.

Though speech recognition may never be a complete replacement for other input devices, future interfaces will offer a combination of input types, a concept known as multimodal input. A mouse is a very efficient device for desktop navigation, for example, but not for

changing the style of a paragraph. By using both a mouse and speech input, a user can first point to the appropriate paragraph and then say to the computer, 'Make that bold.' Of course, multimodal interfaces will involve more than just traditional input devices and speech recognition. Eventually, most PCs will also have handwriting recognition, text to speech (TTS), the ability to recognize faces or gestures, and even the ability to observe their surroundings.

At The Intelligent Room, a project of Massachusetts Institute of Technology's Artificial Intelligence Lab, researchers have given sight to PCs running Microsoft Windows through the use of video cameras. 'Up to now, the PC hasn't cared about the world around it,' said Rodney A. Brooks, the Director of MIT's Artificial Intelligence Lab. 'When you combine computer vision with speech understanding, it liberates the user from having to sit in front of a keyboard and screen.'

It's no secret that the amount of information - both on the Internet and within intranets - at the fingertips of computer users has been expanding rapidly. This information onslaught has led to an interest in intelligent agents, software assistants that perform tasks such as retrieving and delivering information and automating repetitive tasks. Agents will make computing significantly easier. They can be used as Web browsers, help-desks, and shopping assistants. Combined with the ability to look and listen, intelligent agents will bring personal computers one step closer to behaving more like humans. This is not an accident. Researchers have long noted that users have a tendency to treat their personal computers as though they were human. By making computers more 'social,' they hope to also make them easier to use.

As these technologies enter mainstream applications, they will have a marked impact on the way we work with personal computers. Soon, the question will be not 'what does software look like' but 'how does it behave?'

B Re-read the text to find the answers to these questions.

1 Match the terms in Table A with the statements in Table B.

Table A

a GUI

b Multimodal interface

c Intelligent agent

d TTS

e The Intelligent Room

Table B

i Software assistant that performs tasks such as retrieving and delivering information and automating repetitive tasks

ii Text to speech

iii Graphical user interface

iv A project of the Massachusetts Institute of Technology's Artificial Intelligence Lab

v A system that allows a user to interact with a computer using a combination of inputs such as speech recognition, hand-writing recognition, text to speech, etc.

2 Mark the following statements as True or False:

a Fewer people are using computers because computer functions are becoming integrated into other electronic devices.

b Keyboards and mice will soon not be required for using personal computers.

c There have been no improvements in interface design since the development of the GUI.

d Speech recognition is likely to completely replace other input devices.

e Computer speech and vision will free the user from having to sit in front of a keyboard and screen.

f Intelligent agents will make computers seem more like humans.