



# RESEARCH

## What makes the perfect voice announcement?

The effectiveness of communication depends on a number of factors. For voice communication these are primarily the competence of the announcer, the degree of background noise and the competence and attention of the listener.

**For any announcement to be effective, it must be both clear and understandable.**

A number of studies have been carried out into listeners' and users' reactions to real and synthetic speech and the different perceptions of male and female voices. The most important of these have been performed by the Dialogue Spotlight Research Team at the Centre for Communication Interface Research (CCIR), housed at the University of Edinburgh, UK.

### Some key findings are shown below.

- In “User Attitudes Towards Real and Synthetic Speech” the CCIR team performed a series of experiments which compared methods of generating spoken output in an information service. 100 participants experienced 10 versions of a telephone information service, differing only in the method used to generate the spoken message: concatenated recordings of real speech, text-to-speech synthesis or a combination of both. The researchers found:
  - **a strong preference for versions of the service using real speech throughout, over versions making any use of synthetic speech;**
  - a preference for versions making **Minimal Use of Synthesis** over those where it was used more extensively;
  - a significant preference for **Professional-Standard Recordings** over amateur ones;
  - a preference for a **Single Speaker** rather than a combination of two speakers, particularly in **Real Speech** messages.
- The same piece of research also discovered that **Real Speech** enabled the research subjects **to identify the required information more accurately** and with fewer repetitions than synthetically produced messages.
- Other studies have compared attitudes towards the voice used. They showed that both gender and regional accent have an effect on users' perceptions of service. In particular **female voices are preferred** when information is being imparted because the pitch of the voice carries better over background noise. On the other hand **male voices are perceived to be more authoritative** and can therefore be more effective when instructions rather than information are being communicated.



### Report from the Institute of Acoustics

Research has also discovered that real speech enabled listeners **to identify the required information more accurately** and with **fewer repetitions** than synthetically produced messages.

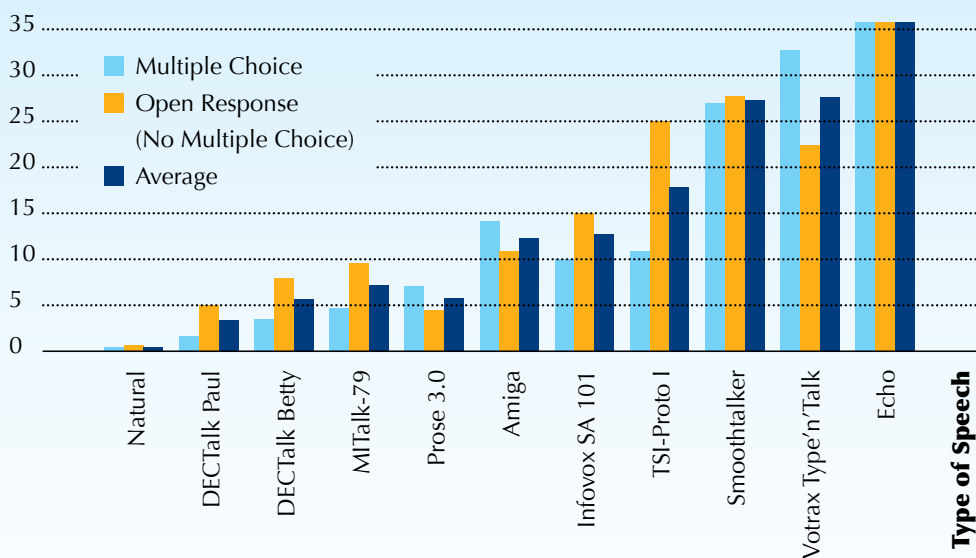
Tests consisting of over 300 words were played to listeners, starting with natural (real) voice and progressing through forms of varying levels of synthesised voice.

Listeners were asked to mark the words they thought they heard on multiple choice answer sheets.

Logan et al. (1989) have presented this test for nine synthesisers and natural speech. They also performed an open response version of the test and found out that the **intelligibility** decreased significantly when the multiple choice answer sheet is excluded.

The test and the results are also summarised in Santen et al. (1997).

#### % of Errors



**The results are clear – real voice is the perfect voice for passenger communications**