

Terminology

A major problem in voice response systems

Yu Centrik has worked on several projects assessing and improving Interactive Voice Response (IVR) systems. While conducting an evaluation of four different automated touch-tone telephone systems for various departments of the Canadian government, we have extracted general recommendations through the analysis of all 74 participants together.

According to our observations, 43% of all usability problems with these systems linked to terminology: vocabulary used, syntax, style and the level of language used.



CONTEXT

Mandates : We were mandated to work on four touchtone telephone systems (DTMF) for different government departments. The mandates concerned the complete redesign and/or usability testing of systems linked to diverse domains.

Solution : Three methods were judged essential for optimizing the word choice with respect to the application:

1. A field analysis of real telephone sessions coupled with word-for-word transcriptions of caller's reasons for accessing the system is critical in guiding the design process. Most notably, this information helped select appropriate terminology and also assured that the system responded to both the caller and organization's needs.

2. Designing "out-loud", which involves the reading of instructions and messages to users in the evaluation or creation of vocal interfaces, is equally fundamental in measuring the cognitive impact of message length, phrases used, option labels, information density and acoustic confusions; visual depictions of the interface don't simulate realistic cognitive load requirements (auditory effort, memory and attention) and the step-by-step progression of the application.

3. Finally, a review of best practices and standards in the design of IVR interfaces is essential to evaluate alternatives, understand callers' mental models and identify which terminology is problematic and which is essential to user comprehension.

Introduction

Vocal interfaces involve different cognitive processes and technical constraints from standard graphical interfaces (i.e. a web site). They are linear, unidirectional, invisible and non-persistent, whereas the web is two-dimensional, visual, interactive and flexible. Clearly terminology should be selected differently based on the medium of the application being used.

Just as there are writing standards for the web, messages on a voice interface must adapt to the auditory medium: they serve as the only decision-making support the user has on the system. Voice interface terminology must therefore follow a number of criteria and standards which focus on the precise choice of words and a syntax which is easy to remember, relevant and guides the user effectively.

...just as there are writing standards for the Web, instructions and messages on a voice interface must adapt to the auditory medium.

Vocal Interface Terminology A major problem in voice response systems

1. WORD CHOICE

In order to understand the appropriate level of terminology, listening and transcribing the exact wording of real phone conversations is a necessary approach. We must be sure to design for real caller situations and structure our dialogue in the way they think, not the way we think.

Example

The option "for a road accident, press 1" would likely be better understood if framed with a user focus: "If you have suffered a road accident, press 1".

2. SIMPLICITY

Overcomplicated terminology directly translates to lost time, frustration and even the impression that users themselves are ineffective. Since IVRs are sequential and not interactive, the key is simplicity. It is critical to emphasize one indicative keyword in each menu option. In creating verbal prompts, it is also critical to pay attention to phrasing and word order; short sentences which avoid acoustically similar and unnecessary words can help enable clear communication.

Example

Consider the following prompt: "to make an appointment with an appliance repairman, to modify or cancel an existing appointment or to learn about repair costs and services, press 1". This menu option is too long and convoluted, discussing two different needs at once. Also, the acoustic similarity between 'appointment' and 'appliance', 'repair' and 'repairman' might also contribute to confusion and mistakes.

A more effective alternative could be "To make, change or cancel an appointment, press 1; for our services and prices, press 2."

3. ACCURACY AND CLARITY

A single bad term can result in an entire menu option being questioned. It is essential to be very explicit and avoid such ambiguity.

Example

In the option "If you're leaving Quebec, press 4", does 'leaving Quebec' mean a permanent or temporary leave? Should the caller select this option if he's going on a holiday? Keeping in mind that even the slightest hesitations can cause errors in the system, this option fails to meet neither the caller nor the client's objectives of connecting the call to the right attendant.

Another Example

Consider the following common practice: "If you have ___, press 1; otherwise, press 2." Participants hesitated between the two options. Replacing the second option with a more explicit statement ("If you haven't ___"), the caller identifies the option easier and makes an appropriate selection. Hearing their explicit situation helps users avoid mistakes.

4. CONSISTENCY

A uniform vocabulary will minimize confusion throughout the application, which enhances the caller's mental model of the system. Some even recommend that such consistency be present through all channels of communication.

Example

Consider the following prompt: "for questions about your installments, press 2; if you did not receive your payment yet, press 3". Confronted with these options, a caller will quickly wonder if installments and payments are the same thing. Again, since decision-making in voice response systems must occur rather quickly, it is essential to avoid creating such uncertainties for the caller.

5. STANDARDIZATION

Unexplained jargon is a common error for IVR system designers, especially when they are used to designing websites where additional explanations can be accessible through a simple 'more' link. In an automated telephone system, it is extremely difficult for a caller to try and access complimentary information. One solution is to combine jargon with concise, in-line explanations.

Example

"For information on the E10411 form, which covers European health costs, press 1".

Callers can identify either the form number or its function. The option fits the caller's experience.

OTHER WEAKNESSES : Following our evaluation of four automated phone systems by 74 different participants, terminology appeared to be the major ergonomic weakness (43% of all problems). Nevertheless, there were other weaknesses which we mustn't neglect in the design of usable IVR systems : guidance and navigation (19%), workload (19%), and adaptability to caller profiles (7% - speed of instructions, caller ages, etc.) A fourth weakness, emotional factors with respect to the aesthetics of the application (prosody, rhythm, volume, etc.), plays an equally large role despite being difficult to measure. We should also note that an additional 12% of problems involved some combination of these other weaknesses.