

# Quality Of Telephone-Based Spoken Dialogue Systems

XIV International PhD Workshop  
OWD 2012, 20–23 October 2012

## Survey on Spoken Dialogue Systems: User Expectations Regarding Style and Usability

Markus Berg, University of Wismar, Germany

### Abstract

Most people already came into contact with Spoken Dialogue Systems, mostly in form of automated call centres. Our aim is the improvement of these systems. In this paper, we focus on the users' preferred style of interaction. We conduct a survey and evaluate the results, which will be the basis for our future work in the context of modelling natural language dialogue systems.

### 1. Introduction

In this paper we evaluate the results of a survey about the user expectations regarding the style of a dialogue system. We first give a short introduction into the area of dialogue systems and consequently place this work into the right context.

#### 1.1. Dialogue Systems

„A spoken dialogue system enables a human user to access information and services that are available on a computer or over the Internet using spoken language as the medium of interaction“ [1]. Apart from spoken language, also text-based input, as in chatbots, is possible. A spoken dialogue system (SDS) consists of five components: The speech recogniser transforms spoken language into text. It is then interpreted by a language understanding component. The dialogue manager interacts with the back-end and decides how to react on the user's request. Depending on this request and the result from the back-end, the system generates a question or an answer. The specific formulation is then created by the language generator and is eventually synthesised.

The first text-based dialogue system was Weizenbaum's *ELIZA* [2] – a simulated psychologist. Later, in Winograd's *SHERLOCK* [3], you could move blocks in a simulated world by natural language commands. Today, most dialogue systems are used in the context of automated call centres and speech based information systems. These systems offer telephone-based, automated services like pre-qualification (determine the correct department for the customer's problem), bus timetable information, or topping up your pay-as-you-go phone. While

some of these systems still only use a key-based navigation (DTMF), others also support speech recognition. Because only few systems are able to understand full sentences, many produce long and tedious dialogues. At the same time, most systems always use the same formulations and a telegraphic and non-human-like style.

#### 1.2. Goal and Context of the Survey

Our aim is the improvement of spoken dialogue systems. So we need to know what users think of current dialogue systems and what they wish for the future. Despite some authors claim, that we don't need natural and human-like dialogue systems, we think this will be the future. It may be the case that today, human-like systems create many difficulties, because the analysis of natural language utterances is a complex task. It is easier to process restricted commands like in simple command-and-control systems. Users also adapt to this limited interaction style and are able to use it efficiently, but we don't believe that they wouldn't be happy with more human-like systems, if they existed.

We want to find out, which type of dialogue system users like most. Our assumption is that, in general, users prefer systems with human-like capabilities and a natural style. We also imagine that there are no clear relations between preferred style and age or background. We believe that every user is different and that we need systems that adapt to the users with regard to style and formulation.

### 2. Previous and Related Work

Berg et al. [5] conducted a Wizard of Oz experiment to find out whether and how people want to talk to computers in terms of solving everyday tasks like writing an email with only having a speech interface at hand. It has been shown that most people – independent from age, gender, experience or profession – stick to the Graphical User Interface (GUI), i.e. they use commands that they remember from the GUI. Moreover, we have learned that most of the participants categorise natural language (full sentences) as „helpful. In case of uncase or in the

This document is a revised version (some errors/typos corrected). This paper received a 'Distinguished Paper Award'.

Quality of Telephone-Based Spoken Dialogue Systems is a systematic overview of assessment, evaluation, and prediction methods for the quality of services. Quality of Telephone-Based Spoken Dialogue Systems is a systematic overview of assessment, evaluation, and prediction methods for the. Thank you for downloading Quality of Telephone-Based Spoken Dialogue Systems. As you may know, people have look hundreds times for vincenzopiso.com: Quality of Telephone-Based Spoken Dialogue Systems ( ) by Sebastian Moller and a great selection of similar New, Used and. Quality prediction models for telephone-based spoken dialogue systems. Sebastian Moller. IKA, Ruhr-Universität, D Bochum, Germany, Email. This theory forms a basis for the detailed analysis of quality aspects governing the interaction with telephone-based spoken dialogue systems which was. We follow the definition of the term quality as introduced by Jekosch ( ) and now accepted for telephone-based spoken dialog services by the. International. Spoken dialogue system, quality, usability, prediction model, optimization. . different types of systems, namely a telephone-based system for. Number, Title, Status. P (11/03), Subjective quality evaluation of telephone services based on spoken dialogue systems, In force. Spoken Dialog Systems (SDS) became popular in the past years for telephone- based services such as database queries (e.g., bus information), banking. This paper addresses the quality of telephone services which rely on spoken dialogue systems, enabling the spoken interaction between a human user and a . A New Taxonomy for the Quality of Telephone Services. Based on Spoken Dialogue Systems. Sebastian Moller. Institute of Communication Acoustics. Assessment of Spoken Dialogue System Usability - What are We really based on a taxonomy for the quality of service for SDS, proposed by Love et al ) specifically for evaluation of telephone-based speech serv-. Spoken dialogue systems, i.e. computer systems which enable a more-or-less natural human-machine interaction via the quality of an SDS-based service can be defined as . conference, and encompassed telephone-based systems in . Quality of Telephone-Based Spoken Dialogue Systems ph?n 2 potx. 26 access the service in a usual way (doing his/her usual transactions), this might b e. A new Taxonomy for the Quality of Telephone Services Based on Spoken Dialogue Systems. Anthology: W; Volume: Proceedings of the Third SIGdial. 1. an evaluation experiment on a telephone-based spoken dialogue system for restaurant information (see [2]. [7][9]), which lead to the standardisation of a new. with Spoken Dialogue Telephone Services telephone-based spoken dialogue services. As an initial system developers to get rough estimates of quality dur-.

[\[PDF\] Sharpes Honour: Richard Sharpe And The Vitoria Campaign, February To June, 1813](#)

[\[PDF\] Heroes Of Conservation](#)

[\[PDF\] Education Vouchers](#)

[\[PDF\] How Murray Saved Christmas](#)

[\[PDF\] Many Ways, Middle Way, No Way: A Guide To Meditation, Spiritual Awakening And Fun](#)

[\[PDF\] Meditating As A Christian: Waiting Upon God](#)

[\[PDF\] Extrait Du Livre De Renvoi Officiel De La Paroisse De Montraeal: Comprenant Les Villages Incorporaes](#)