REAL WORLD APPLICATIONS OF ROBUST DIALOGUE

Fact Sheet

Project Information

REWARD

Grant agreement ID: LE12632

Project website

Project closed

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1 November 1995

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31 October 1997

Funded under
Specific programme of research and technological development and demonstration in the area of telematic applications of common interest, 1994-1998

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EU contribution
€ 1 217 790,00

Coordinated by
Vocalis Ltd
United Kingdom

Objective

REWARD is developing a tool for the design and implementation of automatic dialogue-based telephone services for applications such as call-centre automation and telesurveying. The tool is intended to help non-technical staff design and operate automated teleservices without specialist intervention. The system comes with a library of reusable dialogue components allowing dialogues to be flexibly constructed. It will be designed to support activities like continuous speech, and word or phrase spotting as well as speech output. Within the project, it will be used to build and field-test several different teleservices.

http://cswww.essex.ac.uk/EIP/vocalis.html
Two major phases of work have been completed: User Requirements Study and Specification and Technical Preparation. Market analysis data has also been compiled for each of the industries represented in the project. Work on Technical Specification was well under way by the end of the first year.

Market Analysis

Although growth of the telecommunications market has been evident in the well established business areas of telephony and fax communications, growth in mobile services (phones and pagers) has been the most dramatic. The number of mobile phones in Europe is estimated to have grown by over 57% in the last year whereas average growth in service revenues for all telecommunications sectors for the top 15 public telephone operators was 11.2% for the year 1994-95.

There is an increasing trend towards augmenting or replacing human telephone service agents with automatic voice processing systems which use touch tone or speech recognition as the main medium of human-computer communication. The global market for voice processing in 1996 was estimated to be around $2.1 billion, rising to $5.8 billion by 2001 (source: Ovum). Within the sector, the market for speech recognition is growing at a rate of 18% per year (source: Tern).

Each of the business sectors represented in the project is also undergoing rapid changes related to telecommunications. For example, in the last five years, the number of market research interviews carried out over the telephone has risen from a quarter to a third of all interviews. The UK telemarketing industry has risen as a steady rate of 30% per year over recent years. Growth does not automatically result in increased revenues: while airline sales rose during the year by 2% and train sales by 3%, travel agents' turnover increased by only one percent. As competition intensifies in each of these areas, the need to cut costs and improve service levels becomes ever clearer. This is where REWARD stands to make its most important contributions.

User Requirements and Functional Specification

The scope of user participation in the REWARD project is very wide and, as a result, the aims of the project are ambitious. Bringing together the needs of such diverse types of business has taken longer than originally expected. It has been necessary to embark on a programme of mutual education in order to appreciate the business goals of the respective partners and the contribution which can be made by the different technology areas. A set of functionality have been specified for the demonstration tele-services and a Functional Specification has also been prepared for the Service Creation Tool which will be used to generate the dialogues for the demonstrators. High-level performance targets for the project's technical outputs have also been specified.

Technical Preparation

The two technology suppliers in the consortium have completed an investigation into the feasibility of converging their existing approaches to dialogue management and dialogue system design. They have agreed a single integrated solution which combines the best aspects of both previous systems. The two partners agreed a

broadly comparable modular decomposition of each system and then ranked each module according to a set of agreed criteria. The new design embodies the highest-scoring modules from each system, subject to some minor adjustments to retain functional coherence.

The Way ahead

The project has now completed most of its preparatory work. Looking forward, the consortium expects to develop spoken dialogue system demonstrations in each of the industry sectors represented in the consortium, and that these demonstrations should have been created by user staff with the help of the REWARD Service Creation Environment. This will mark an important step towards the project's goal of making spoken dialogue technology accessible and useful to a growing community of corporate users.

During 1997, partners expect to complete a number of system demonstrations, showing non-trivial spoken dialogue systems being designed and implemented by staff who are specialists in other areas, such as business travel, telemarketing, market research or hardware repair. At the technical level, consolidation of the service delivery platform and the service creation environment will take place.

The project includes five user organisations: Telia TeleRespons (a public telephone operator), DanTransport Rejsebureau (a business travel agency), Taylor Nelson (a market research and telemarketing organisation), NIPO (another market research organisation and MADE (PC repair). There is also a larger User Group of organisations representing a wide range of states, languages and vertical market sectors.

The outcomes of the project will have relevance for organisations which develop and deploy telephone services such as help-desk, information, reservation, and transaction processing services.

REWARD will develop and demonstrate a service creation tool to enable non-technologists to rapidly develop automatic teleservices based on spoken language dialogue technology. The platform for delivering these services will also be refined.

The project will build on advanced spoken language understanding, dialogue management and dialogue design technology developed by Vocalis and CPK.

Each user partner will develop at least one new automatic teleservice addressing the requirements of their own business.

Progress and results

The project will result in the integration and demonstration of a graphical workstation-based service creation tool for developing automatic teleservices using advanced spoken language dialogue technology. Large-scale demonstrations of the services created will also be staged. Evaluations of the effectiveness of the technologies form

an important part of the project's outcome.

Exploitation

Demonstrations will be of two types: service creation and service use. For service creation, nominated staff members from each of Telia, DanTransport, Taylor Nelson, NIPO and MADE will develop new teleservices with versions of the service creation tool localised for, respectively, Swedish, Danish, English, Dutch and Spanish. The services developed will be demonstrated in the same languages, and they will be used by large numbers of people, selected to reflect the likely end-user populations.

There is good potential for exploitation of the results of REWARD. For example, the service creation tool should ultimately be packaged as a tool for general use. The novel teleservices developed in the project can be expected to form the basis of products to be offered by the partners in the relevant market sectors.

Fields of science (EuroSciVoc)

social sciences > sociology > industrial relations > **automation**

engineering and technology > electrical engineering, electronic engineering, information engineering > information engineering > telecommunications > **mobile phones**

Programme(s)

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Call for proposal

Data not available

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Coordinator

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