COSIMA – Your Smart, Speaking E-Salesperson

Werner Kießling, Stefan Holland, Stefan Fischer, Thorsten Ehlm
Institute of Computer Science
University of Augsburg
D-86135 Augsburg, Germany
{kiessling, holland, fischer, ehm}@informatik.uni-augsburg.de

ABSTRACT
We present a new cooperative user interface for e-shopping. COSIMA is an intelligent Internet avatar with dynamic voice output that assists customers through their e-shopping tours and advises them like a real salesperson. COSIMA uses a meta search engine based on Preference SQL, computing best matching results to the customer's wishes. COSIMA can qualify these results and generates proper voice output. Our presentation shows COSIMA in action for comparison shopping.

HIGHLIGHTS OF COSIMA
The current generation of e-shopping systems often suffers from inadequate search engines, but definitely from the lack of smart sales advice. When searching for items every Internet user has encountered the infamous "empty result - sorry, please try again" situations as one extreme - or a flooding with irrelevant results as the other. This is aggravated by the fact that search results are not explained in the context of the customer's preferences. Such a behavior would be unheard-of in a real department store of the old economy. With the event of COSIMA things can improve dramatically. A user interface like COSIMA can put an end to search hassles and can bring sales comfort and advice also to the new economy.

COSIMA is the first avatar acting like a smart, speaking e-salesperson. Customer requests are seriously interpreted as preferences. Neither does COSIMA interpret the user's input as hard conditions like many search engines do, nor is it required to enter boolean queries what so-called advanced query modes often ask for. Instead, COSIMA accepts customer wishes in a purely declarative manner. In any case best matching results are returned, which in particular means that:

- If no perfect match can be found, then best possible alternatives are offered automatically (which avoids the embarrassing empty result effect).
- No results are returned which are subsumed by better offers (which avoids the flooding effect).

Of course, any e-salesperson like COSIMA relies on the quality of the underlying search engine. The Preference SQL search engine is very well suited, since it supports a variety of preferences under a partial order semantics. It also employs the principle of Pareto-optimality as a proper choice for multi-attribute optimization. Due to this intuitive query semantics COSIMA can figure out the qualitative degree of mismatch between the customer's wishes and the query result, which enables her to add sales psychology to her product explanations. These advantages are enhanced by COSIMA's ability to speak any dynamically generated sales text by using an off-the-shelf text-to-speech engine.

The COSIMA demonstration offers comparison shopping with parallel online search agents among a choice of connected e-shops (Amazon, BOL, ... ) offering books, audio CDs and PC hardware. Since the COSIMA software can be downloaded from our homepage (http://www.myCOSIMA.com) a growing user community enjoys already the new e-shopping feeling with COSIMA.

The vision of COSIMA is to create a real interactive shopping feeling, relying on advanced database search technology, an attractive e-shopping interface including voice input/output and user-adaptive behavior including preference mining. Since COSIMA is an entire technological framework, it can be adjusted to other e-shopping environments by customizing the search engine, the avatar animations and speech contexts. Certainly COSIMA will never replace a smart and charming real salesperson, but we believe she will make e-shopping much more exciting than it is today.