Implicit Queries (IQ) for Contextualized Search

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ABSTRACT

The *Implicit Query (IQ)* prototype is a system which automatically generates context-sensitive searches based on a user's current computing activities. In the demo, we show IQ running when users are reading or composing email. Queries are automatically generated by analyzing the email message, and results are presented in a small pane adjacent to the current window to provide peripheral awareness of related information.

Categories and Subject Descriptions

H.3.3 [Information Storage and Retrieval]

General Terms

Algorithms, experimentation, human factors.

Keywords

Personal information management, interactive information retrieval, user interfaces, implicit queries.

INTRODUCTION AND RELATED WORK

Most information retrieval systems are designed as stand-alone applications that require users to pause work on their primary activity in order to search. In contrast, the Implicit Query (IQ) prototype automatically generates queries based on user activity, and presents results in the context of ongoing work.

The idea of generating background queries to retrieve task-relevant information has been explored by others (*e.g.,* Budzik et al. [1], Czerwinski et al. [2], Henzinger et al. [3] and Rhodes & Maes [5]). IQ is similar to these efforts, but we focus on supporting users in tasks like email where the context is rapidly changing. In addition, we investigate both retrieval algorithms and user interface techniques for unobtrusively presenting results. Finally, we match against personal content (*e.g.,* Stuff I've Seen [3]), which we find to be important.

IMPLICIT QUERY (IQ) DESIGN AND USER INTERFACE

The version of IQ that we demonstrate is an email plug-in that analyzes what a user is reading or composing, automatically identifies important words to use in a query (using a *tf*idf* algorithm), and finds related items in an index of personal information which includes mail, calendar, web pages, files, IM messages, etc. New wrappers can be written to analyze context from other applications and to retrieve information from other data sources. Search results are shown in a sidebar attached to the current email, which allows users to maintain their task focus but also take advantage of peripherally-presented suggestions (Figure 1).

In addition to the basic search results, IQ displays quick links to related people and topics. Users can also control presentation parameters (*e.g.,* window size and placement, refresh delay, transparency), matching algorithms, and provide feedback about the quality of the results. IQ has been available within our organization for several months and we will report on preliminary usage experiences.
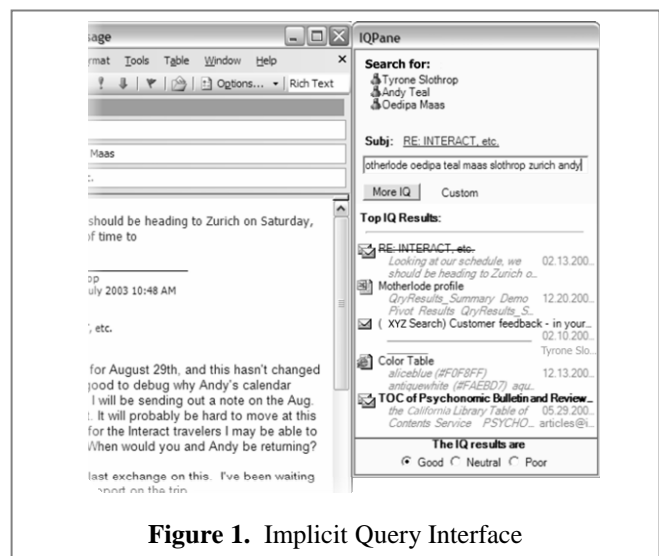

Figure 1. Implicit Query Interface

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