

Usability Study

Rosetta Biosoftware's

Target and Gene Information (TGI) System 2.1

Final Report

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Executive Summary

This report presents the design, findings, and recommendations from a usability study of Rosetta Biosoftware's Target and Gene Information (TGI) System 2.1. TGI is a Web-based gene search-and-report application and is built on an Internet Explorer platform. It is a propriety program of the Merck Corporation which is used internally by Merck researchers. We studied two users who were Rosetta employees on-site at Rosetta Biosoftware, a subsidiary of Merck, in Seattle, WA. The test administrators were Joel Dahms and Kirsten Gantenbein.

Purpose

Rosetta's goal for the study was to have us examine how easy or difficult the TGI user interface (UI) is to learn and use. Based on our cognitive walkthrough of the program, we decided as usability consultants to address the following issues:

- Design and layout of the program interface
- Task performance of the commonly used search functions
- Content analysis of the terms used
- Learnability of the program's commonly used features

The audience definition was developed to most closely represent users who could be using TGI but are not currently doing so. Since Rosetta was particularly interested in the UI, we limited our audience to Merck biologists, excluding bioinformaticists who commonly bypass the UI to accomplish their goals. The other participant characteristics were:

- 25 to 55 years old
- Master's degree or beyond in a biological science
- Have not attended a TGI tutorial in last six months
- Have experience with biological and genome research
- Hold a research or technician staff position at Rosetta
- Web based gene searches are important or critical for their research.
- Are proficient with Internet Explorer
- Have not used TGI more than 5 times on their own

Methodology

The two users tested were a Research Biologist and a Scientific Designer who were both Rosetta employees. The test format for each user included the following components: screening questionnaire, pre-test questionnaire, a consent form, scenarios and tasks, post-scenario questionnaires and interviews, a post-test questionnaire, and a debriefing interview (See Appendix B for test components). Joel Dahms was the facilitator and provided the questionnaire and scenarios to the user. He followed a facilitator script to

ensure the consistency of the test administration for each user. Kirsten Gantenbein was the data collector and camera operator.

Important Findings

We found that users:

- had difficulty with hidden information
- did not take advantage of most navigation tools
- did not fully utilize information
- found some terminology unclear
- did not use the help menu
- needed feedback about probes that did not have any Body Atlas data
- could not recover from errors when the wrong transcript choice was cached

Recommendations

The following are the recommendations that we think would have the largest impact on the TGI's usability:

- **Provide a tutorial** pointing out key features, where they are, and how to use them. This could be interactive or multimedia or just a series of instructional screens.
- **Provide terminology definitions** and place them in close physical proximity to the actual terms where they appear. Also, hyperlink the term to its definition in the Help menu glossary.
- **Hyperlink “identifiers”** (e.g. Resolver IDs, Locus Link) to their definitions and examples of each in the Help menu glossary.
- **Highlight key words** in the definitions of TGI components (search modules and input fields) on the right hand side of the page using colors or bolding. Remove dense information to the Help section and retain only immediately helpful information on the right of the page.
- **Supply a “Clear Cache Button”** so the user does not have to close the program if they wish to choose a different transcript from the identifier resolution dialog.
- **Make transcripts with no data red.** Following the convention used in the *Body Atlas* tissue selection dialog, if there is no data available for a transcript in the identifier resolution dialog, it should appear in red.