

Coming to Terms: Comparing and Combining the Results of Multiple Evaluators Performing Heuristic Evaluation

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Agenda

- I'm going to tell you about the method we developed <http://doi.acm.org/10.1145/1240866.1240918>
- You're going to try it out
- We'll regroup to talk about how it went

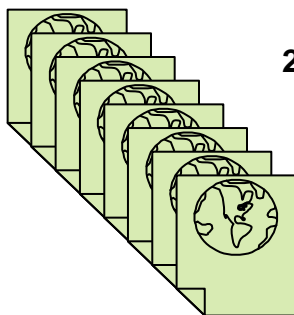
Summary



3 Evaluators



25 Features



8 Websites



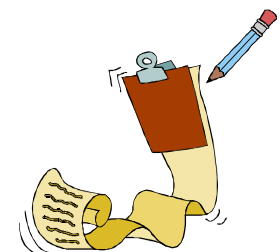
New Heuristic
Evaluation Method



Single Voice to the Client



Ranking of the Client Site
Against the Other 7 Sites



Prioritized List of Improvements

Overview

- Challenges that we faced
- Method that we developed to address those challenges
- Benefits that the method provided as we reported out our findings to the client

Challenges

- Client asked for an expert review to compare his site to 7 others
- 41 features to compare (narrowed to 25)
- No literature on how to prioritize a problem uncovered by heuristic evaluation
- Very little literature on how combine the results of multiple evaluators performing heuristic evaluation

The Method We Developed

1. Evaluators met and agreed on the 10 heuristics
2. Decided on the rating scale: 5 stars ★★★★★
3. Final 25 features identified & prioritized by the client
4. Each evaluator defined a set of expectations for each feature, based on the 10 heuristics
5. Evaluators met as a group and combined the set of expectations for each feature into one set
6. Evaluators agreed on the weighting of each expectation across all of the features
7. Each evaluator independently rated each feature across the 8 sites based on the agreed set of expectations
8. Evaluators met as a group and agreed on a single rating for each expectation, and an overall rating for the feature.

10 Heuristics






1. Evaluators met and agreed on the 10 heuristics*:

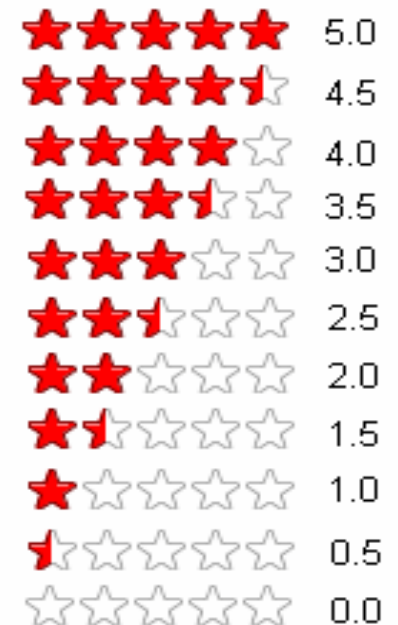
1	Clear text and font
2	Clear and easy to navigate
3	Consistency
4	Important features are easy to find
5	Search and find fast and easy to use
6	Prevent errors
7	Expected information in one place
8	Short navigation to the information we seek for
9	Provide supportive feedback
10	User's terminology

* Most of these heuristics were discussed in the study by Molich & Nielsen (1990).

5-Star Rating Scale

2. Decided on the rating scale: 5 stars

Rating	Definition
	Awful - Not a desired solution, has almost no advantages.
	Poor - Has a few advantages, but not recommended to use as is.
	Average - Some parts of it can be considered as a solution. Has around 60% of the attributes that can be used as a model.
	Good - Most of it can be considered as a solution. Has around 80% of the attributes that can be used as a model.
	Excellent - The whole design can be considered as a solution for this feature; should be used as is.



Usability Expectations

4. Each evaluator defined a set of expectations for each feature, based on the 10 heuristics

Feature: Customer Feedback

- Can find quickly and easily on home page
- Require only minimal contact information
- Available in HTML only (doesn't require a plugin)
- Provide feedback to the user that the message was sent & tell the user when to expect a response
- Ability to attach a document
- Forms should be quick and easy to complete

Expectations with Ratings

6. Evaluators agreed on the weighting of each expectation across all of the features

Feature: Customer Feedback

(1.0) Can find quickly and easily on home page

(1.0) Require only minimal contact information

(0.5) Available in HTML only (doesn't require a plugin)

(1.0) Provide feedback to the user that the message was sent & tell the user when to expect a response

(0.5) Ability to attach a document

(1.0) Forms should be quick and easy to complete

Combined Ratings in Report

Features/ Usability Expectations

Comparative Ratings of Feature Based on Expectations

	Client Site	Site2	Site3	Site4	Site5	Site6	Site7	Site8
Customer Feedback Form	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★☆☆☆	★★☆☆☆	☆☆☆☆☆
1. (1.0) <u>Accessible from "contact us" page</u> (and "contact us" should be accessible from every page)	0.5	1 (BEST)	1	1	1	0	1	0
2. (1.0) <u>Require only minimal contact information</u>	1 (BEST)	0.5	0.5	1	0	0.5	0	0
3. (0.5) <u>Available in HTML only</u> (doesn't require plug-ins)	0.5	0.5	0.5	0.5	0.5	0.5	0	0
4. (1.0) <u>Provide feedback</u> that the message was sent & tell the user when to expect a response	0.5	0.5	1 (BEST)	0.5	1	0.5	0.5	0
5. (0.5) <u>Ability to attach a document</u>	0.5 (BEST)	0	0	0	0	0	0	0
6. (1.0) <u>Form should be quick</u> & easy to complete	0.5	1 (BEST)	0.5	0.5	0.5	0.5	0.5	0
								11

Example of Detailed Feedback

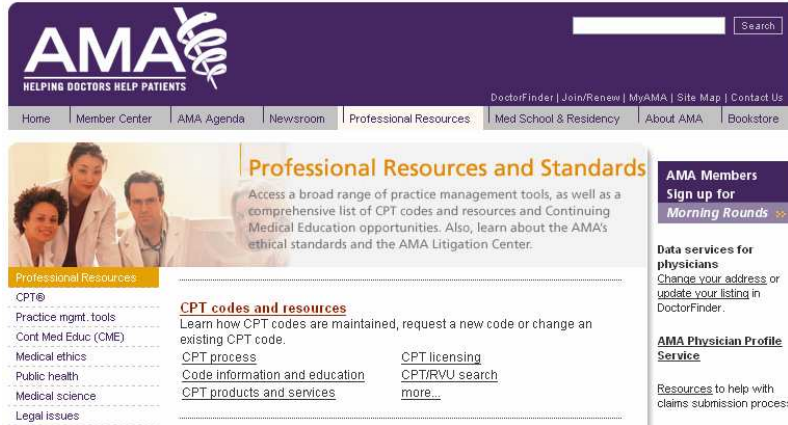
Search: Client Site ★★☆☆☆

- 1. (0.5)** The Client's search was not easily found on the home page, as it is in very small text at the bottom of the home page and requires scrolling below the fold. On lower level pages, it is at the top right of the page, but still requires the user to click the link before entering search criteria. Site A, Site D and Site C all had larger search input boxes to allow input of search data without any prior clicking. Site A and Site D had a more standard UI with placement at top right and an input box with an identifiable button to begin search. Moving the input fields and search icon to a consistent location on each page will help to better find and use search.
- 2. (0.5)** The Client's search results were not as easy to read due to the very small font. Many entries had the name "untitled", which did not help the user to judge the context and relevance, and there were no details or dates for the entries to help the user understand the differences in duplicate-titled entries.
- 3. (0.5)** The Client's search had good performance.
- 4. (0.5)** The Client's search did not provide helpful hints if no hits returned. The message was returned as "Sorry, your search yielded zero results. Please go back and refine your search" rather than suggesting alternatives for misspellings or suggesting that the user check their criteria.
- 5. (0.0)** The Client's site requires user to click search link prior to entering search criteria, and does not offer logical operators +, OR, quotes, or other advanced search features. No Search Tips.

Search: Site A ★★★★★

- 1. (1.0)** Site A had easy to find, consistent placement of Search on every page. Site D also had good placement and consistent accessibility, as did Site C, although it had a link rather than an icon to begin search.
- 2. (1.0)** Site A and Site D had clear presentation of results, by relevance or rank. They included details about each entry to help the user judge the context of the search hit and the relevance to their needs.
- 3. (0.5)** Site A's search had good performance.
- 4. (1.0)** Site A and Site D provided helpful messages if the search entries did not match and were possibly misspelled. They also had comments to remind the user to check their entries and try again.
- 5. (1.5)** Site A and Site D provided search input text field, a search icon or button, and listed results as ordered by relevance, with details for each entry. Site A provided more standard search features.

Example Screen Shots & Callouts



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Search is easily found and accessible from every page



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nurse practitioner

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Search

Tip: You can refine your last query by searching only the results by clicking on the tab above the search box. [More Search Help](#)

Results for: nurse practitioner Document count: nurse (500) practitioner (482) nurse practitioner (66)

844 results found, top 500 sorted by relevance Sort results by date 1-25

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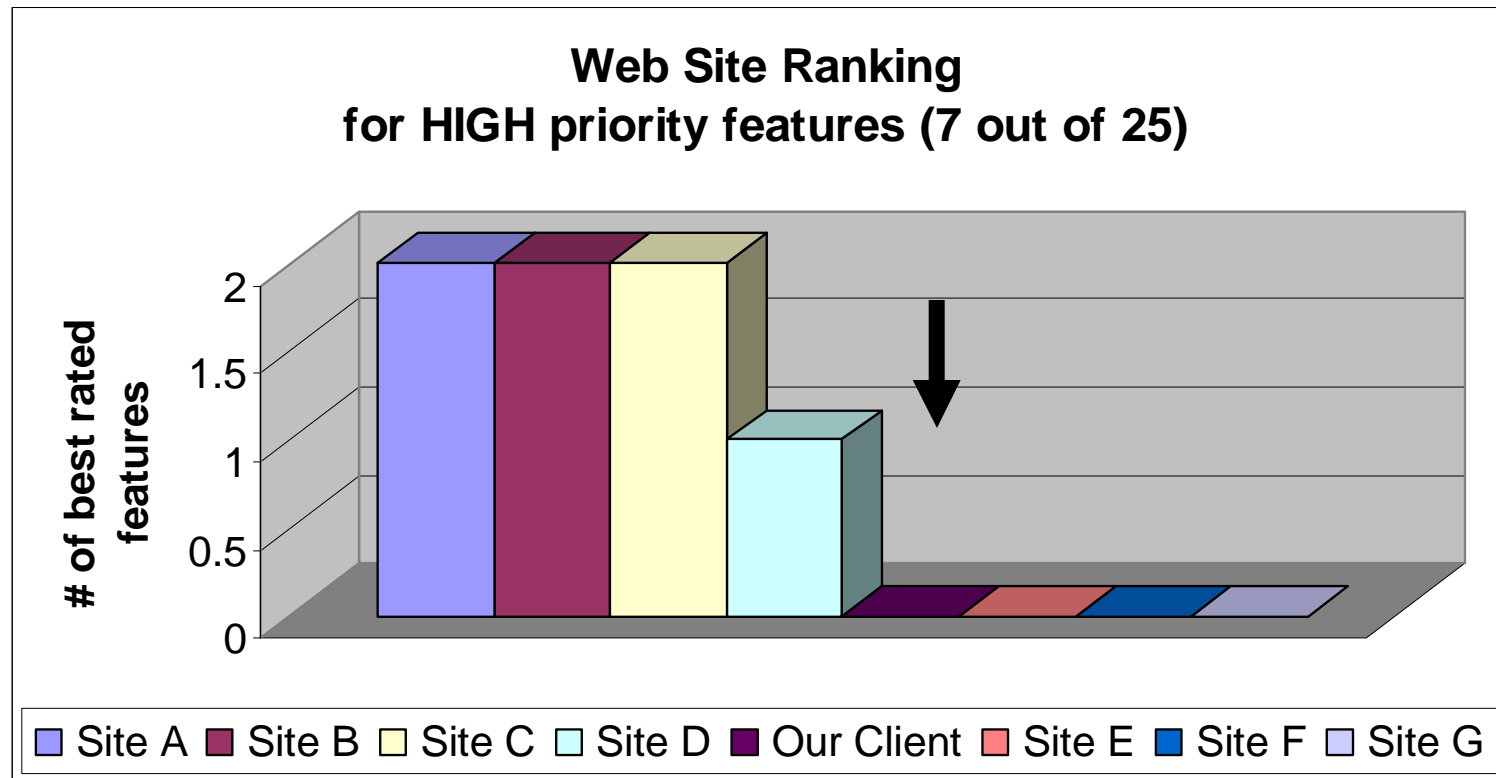
Benefits of This Method

- We could easily compare the client's site to the other 7 sites, on a feature by feature basis
- We could determine which changes should be made first, based on usability priorities and client priorities (high-, medium-, and low-priority)
- We could predict & measure the impact of making improvements

Overall Comparisons

After all the features were evaluated,
how did the client site compare
to the other market sites?

Ratings: Combined High-Priority Features



Based on HIGH priority features: Site A, Site B, and Site C have the most features (2 out of 7) ranked as the best designed features compared to the other Web sites.

Prioritize the Suggested Changes

What changes
should the client make first?

The Mark Hurst/Creative Good Method

1. Listen to the business (Business priorities)
2. Listen to the customers (Usability priorities)
3. Synthesize the two inputs
4. Suggest improvements

Top 10 Features to Invest In (Fix)

<i>Investment Priority</i>	<i>Feature</i>	<i>Usability Priority</i>	<i>Business Priority</i>	<i>Rating in Stars</i>
1	Search Function	H	H	2
2	Service Updates	H	H	2.5
3	Maps	H	H	3
4	Parking	H	H	3
5	Trip Planner	H	H	3.5
6	Schedules	H	H	4
7	Tourism Info	H	M	3
8	How to ...	H	M	3
9	Customer Page for Feedback	M	H	3.5
10	E-Commerce	H	M	3.5

Measure the Improvement

What will be the impact
of implementing our suggestions?

If the Fonts Were Larger ...

<i>Feature</i>	<i>Usability priority</i>	<i>Client priority</i>	<i>Stars</i>	<i>Effect</i>
News / Press Releases	5	5	4.5	Would have tied for best
Site Map	5	3	4.5	Would have tied for best
Employment	3	1	4.5	Would have tied for best
Fare Info	5	1	4.5	Would have won
Projects Underway	3	5	4	Would have won
Contact Us	5	3	4	
Tourist Info	5	3	3	
How to ...	5	3	3	
Safety Info	5	1	3	
Meeting Schedules & Minutes	3	1	3	
Maps	5	5	3	
Service Advisories	5	5	2.5	
Search	5	5	2	

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The Result

- The client got what he wanted: a competitive usability analysis of his site as compared to sister sites in seven other markets
- We could explain and justify every score
- We could prioritize recommended improvements
- We could predict how improvements would impact the client site as compared to the other sites

Now, It's Your Turn ...

- Get into groups of 3 – 5 people
- I'll give you a feature, and you all independently brainstorm the usability expectations, using the 10 heuristics as inspiration (~5 minutes)
- Come together, to determine the final list of expectations and to weight them (~5 minutes)
- Evaluate the websites' feature against your expectations (~5 minutes)
- Come together to negotiate your ratings (~5 minutes)
- Let us all know how it went 😊

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Coming to Terms

What did our team negotiate? ... nearly everything

- The 10 heuristics
- The rating scale & it's granularity
- The usability expectations for each feature
- The weighting for each expectation
- The usability priority (high-medium-low) for each feature
- The final score for each expectation & feature
- What kind of meta-data we could extract from the results

Combining the Business and UX Priorities

<i>Effect of Combining the Usability and Business Priorities</i>		<i>Business Value</i>	<i>Combined Value</i>
↑	Parking	M	H
↓	Customer Feedback Form	H	M
↓	Projects Underway	H	M
↑	Safety Info	L	M
↑	Fare Info	L	M
↑	Multi-language	L	M
↓	Procurement Info	M	L
↓	Email Subscriptions	M	L