

Discount or Disservice? Discount Usability Analysis--Evaluation at a bargain price or simply damaged merchandise?

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ABSTRACT

The panel will focus on Jakob Nielsen's *Discount Usability* approach and guidelines. Nielsen has single handily restored guidelines to CHI. After being discredited because of the sheer impracticality of using 1000+ guidelines, Nielsen has been working hard to convince practitioners that all they need to know about usability can be summarized in 10 guidelines. This may be a real disservice. While using 10 guidelines may be better than using none, do people who have learned Nielsen's 10 think that they now know all they need to know about usability? The panel proposes a wide-ranging, public discussion of these issues.

KEYWORDS: Discount Usability, guidelines, analysis and evaluation techniques.

INTRODUCTION

While starting with Nielsen's writings, the panel is expected to quickly move beyond such scholarly activities to focus more upon the interpretation and use of Nielsen's ideas by practitioners. For example, many in the CHI community believe that different techniques and methodologies are appropriate at different points in the design and development life-cycle. Does adoption of Discount Usability displace the use of other, more knowledge and labor intensive, techniques? One reading of Discount Usability is that empirical techniques are superfluous. A more fundamental concern is that interface design may not be as easy as the Discount Usability guidelines suggest. Perhaps design teams really need to include a professional who is trained in empirical evaluation, cognitive task analysis (such as GOMS or TAG), cognitive modeling, design rationale, or claims analysis.

MODERATOR STATEMENT

Michael E. Atwood, NYNEX Science & Technology

Our science progresses largely because we learn from our mistakes. Problems observed with the application of the current methods of science lead to conjectures about new

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CHI' Companion 95, Denver, Colorado, USA
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methods that alleviate these problems. These new methods, in turn, will be rejected either because they do not alleviate observed problems or because they introduce new problems that lead to additional conjectures about methods. Whether we view "discount usability analysis" as "evaluation at a bargain price" or as "damaged merchandise" depends, in large part, on what we view as the problem we are trying to solve and what we view as a mistake.

"Evaluation at a bargain price." The problem is that laboratory usability studies cost too much and take too long. As a result, they are rarely done. Relying on the 80-20 rule, we can find 80% of the problems with only 20% of the effort, by simplifying the communication, skill, and equipment requirements. It is a mistake to require a high skill level that few possess and that few will pay for. Would you want to pay \$100 per hour for an artist to paint your house when a \$20 per hour painter would do a job you find acceptable?

"Damaged merchandise." The problem is that conducting usability studies is not viewed as requiring specialized skills and knowledge. As a result, they are rarely done well. Finding ways to package these skills and knowledge in tools that others can use makes apparent that specialized skills and knowledge are required and should effectively raise the skill level of less expert evaluators. It is a mistake to try to downplay the skills needed for expert performance. Would you trust a bridge built by a "heuristic civil engineer" or be comfortable visiting a "heuristic brain surgeon"?

PANELISTS STATEMENTS

Jacob Nielsen, SunSoft

A Bird in Hand. As the saying goes, two birds in the bush will not provide you with much for dinner. Similarly, perfectly polished usability techniques will not improve your interface much unless they are in fact applied in your project.

Discount usability engineering aims at placing a bird in your hand by providing methods that are so easy and cheap to use that people will in fact use them on almost every project. The methods have acknowledged weaknesses and are not guaranteed to give perfect answers every time. However, they do provide reasonable answers most of the

time, and these reasonable answers are much better than the guesswork that would result if designs were shipped with zero usability involvement. Consider the issue of statistical significance. If a result has a p-value of .2, it means that there is 20% probability that it does not hold. However, in the remaining 80% of the cases, the result would be correct, so acting on it would be much better than the 50% chance of success that would follow from a random decision (assuming a dichotomous choice).

As organizations reach progressively higher levels of usability maturity, they will start using a larger number of "deluxe" usability methods. For example, many companies eventually build a usability laboratory, and a small number of companies even start doing formal modeling of critical dialogues. Discount usability engineering plays two roles in the path toward higher usability maturity: (1) it smoothes the way by lowering the threshold of getting started, and (2) it can be used on fast-paced or low-budget projects even in organizations that use a more careful approach for their high-priority projects. For example, I recently had to perform four usability evaluations of a World-Wide Web interface within a single week, and some of the last icon iterations were tested with an N of 1. Still, that was better than an N of 0 (the alternative given the deadline to ship the design).

John M. Carroll, Virginia Tech

Flushing out the birds in the bush. The growing diversity of evaluation methods in HCI reflects an emerging understanding that evaluation can serve many goals in system analysis and development, and in building a science of HCI. As researchers, our job is to understand these methods in terms of their various costs, benefits, and conditions of application. As practitioners, our job is to adapt and refine these methods, and to educate our colleagues in their use.

Discount methods serve us as practitioners by providing a bird in hand, as Jakob puts it in his panel statement; they serve us as researchers by expanding the design space of evaluation methods -- pushing on its bounds with respect to lowered cost. If there is a downside to discount methods, it is the blindness that all methods can engender: No method can serve every purpose. For discount methods, as for all methods, we need to enumerate what evaluation goals are served and how, the costs, the benefits, the conditions of application.

A decade ago, when performance efficiency models (like first-generation GOMS) were ascendant in HCI, a lively debate established that much remained to be described about user interaction beyond ideal keypress times. Discount methods will do us a disservice only if we again seek general panaceas, and fail to recognize that the problems we address are diverse, indeed open-ended, and that our methods need to match this diversity.

Wayne D. Gray, George Mason University

Discount Usability appears to be a hodgepodge of techniques and guidelines whose exact interpretation may

vary greatly from practitioner to practitioner. While in the hands of the master the interpretation and use of the guidelines is influenced by years of study and thought on HCI issues, the average practitioner does not have such an extensive background. Herein lies the difficulty. That an inspired designer, such as Nielsen, can use the guidelines to produce a superior interface is not at issue. What is at issue is how these guidelines are used by people who have not made a career of studying interface design. While Discount Usability may produce "bargain" interfaces, we should be careful that we do not simply get what we paid for.

The leading alternatives to Discount Usability (including Claims Analysis, GOMS, TAG, Cognitive Walkthroughs, and Participatory Design) all place a heavy emphasis on the careful analysis of the flow of information between people and computers (various of these approaches place varying emphases on the social and organizational dynamics of computer use as well). While such alternatives are by no means "discount" approaches all promise substantial time savings over the traditional usability lab approach. Note that advocates of such methodologies seem to believe that it is the application of the method and not its learning that takes the most time. (N.B. all such techniques have been the subject of well-received, 1 day, CHI tutorials.) The time required to apply these techniques is almost totally a function of the amount, degree, and level of analysis required to understand how the human and the computer must interact to perform the task. Shortcutting the time required to do these analyses may make interface design faster but the result is no bargain.

John Long, University College London

Human-computer interaction (HCI) is an emergent engineering design discipline. As a discipline, it seeks HCI knowledge to support HCI practices of diagnosis and prescription to solve general HCI design problems. The scope of HCI design problems can be informally expressed as specifying human behaviours which interact with computer behaviours to perform work effectively. The potential for its knowledge and practices ranges from 'craft' engineering, like Discount Usability, which uses experience/heuristics to support trial-and-error practice, to 'formal' engineering which is able to specify without iteration and with guarantee. As two old sayings have it: you pay your money and you take your choice. However, you cannot have your cake and eat it (and particularly not discounted cake).

DISCUSSANT

Carolanne Fisher, US West

Carolanne Fisher is a developer who has experience in a large corporate setting (Wang Labs and US West) as well as with a small startup company (Maya Designs). As discussant, Fisher will get first dibs on providing a developer's response to Discount Usability in general and the panel discussion in particular.