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Evans White Paper: Usability

Evans Incorporated

CONSULTING FOR **EVOLVING** ORGANIZATIONS

Here you'll learn about:

- The Usability Business Challenge
- Practical Tools and Techniques for Improving Usability
- The Rewards from Usability Investment
- Where to Turn for More Help

About Evans Incorporated

Our Mission Statement...

We help organizations consistently achieve greater levels of success through the execution of programs that improve, innovate and evolve the way you work.

Usability: Why is it so important?

Executive Summary

This paper describes the business need and presents business strategies for incorporating good usability into information technology projects. With these tips—and with the suite of usability solutions described here—you will be better equipped to successfully introduce usable software into your user communities.

The Business Challenge

Usability measures the quality of a user's experience when interacting with a computer-based system by evaluating factors that affect the user's experience. Usability analyzes and improves interaction factors such as:

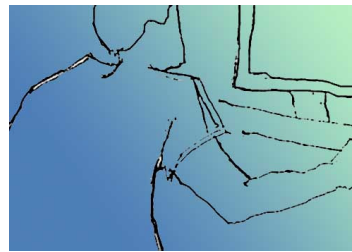
- Ease of learning and memorizing
- Efficiency of use
- Error frequency and severity
- Subjective satisfaction

Understanding the Market Need

Research on software effectiveness shows that users' interaction with software is the weak link in achieving its maximum operational effectiveness. Incorporating usability methods and principles up front in the software design process improves product quality and acceptance, and reduces user errors and lifecycle costs, including help desk and maintenance expenses.

Investing in and introducing new software in the workplace

frequently lead to changes in job design, which then impacts employee motivation and job satisfaction. By considering the human element throughout, whether the design of screens and workflow, changes to work practices and job requirements, or conveying communications, the return on the investment will more likely be realized.



Solution: Tools, Methods, & Techniques

Evans employs a broad suite of tools, methods, and techniques that are based on human factors and human-computer interaction (HCI) guidelines. We've applied these tools at all stages of design: proactively during early phases, during user acceptance testing, or even for post-development assessment.

1 – Questionnaires, Interviews, and Surveys. Interviews and surveys are a great starting point to gather first-hand feedback on user requirements for a technical product or system.

Questionnaires typically ask a large audience focused questions on particular aspects of the new system. Interviews target specific user groups and allow in-depth

probing. Questionnaires or interviews serve as useful methods for eliciting user goals and tasks for using a computer system, and for prioritizing user tasks based on their importance and frequency.

2 – Development of personas. Any computer system typically has many kinds of users, characterized as internal or external to the organization, frequent or infrequent, experienced or novice, etc. Creating profiles of user groups, or personas, helps bring the system users to the forefront of system development plans and helps assure good system design. We develop a persona based on the common user goals and demographics for each user group. Personas help shape the product to match the various needs of the user community.

3 – Focus groups. Focus groups are a common method to obtain user feedback during the design stages of a new software system. Potential users in the focus group discuss ideas on improving the system in an open forum. During this time, users can work with the preliminary design and through the hands-on experience, are encouraged to consider ways to improve the design. This type of interaction allows the users to feel more involved in the design process and leads to greater user acceptance of the delivered system.

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4 – Development of scenarios. Scenarios are used to evaluate the interface design, and emerge from the focus group and one-on-one interviews. Scenarios addressing user functions are mapped to the full set of functional requirements to ensure a complete design.

5 – Prototype development and evaluation. Since the goal is to create a usable application, usability testing illuminates problems with an interface and evaluates prototypes of new designs prior to implementation. Applying usability testing iteratively throughout the design and development lifecycle reveals problems early when the cost of change is lower.

6 – Application of checklists. Checklists ensure that all aspects of usability have been covered: text readability, comprehension, presentation, visibility, information visualization, forms and commands, animation, navigation, internet issues, and locating the site (for web applications).

7 – Expert usability review. Having a usability expert review the prototype design helps ensure that usability issues are not overlooked. The expert assesses the prototype screens against functional profiles, content, navigation, design and reliability criteria. Software examination by a qualified, experienced

usability expert helps reveal unseen issues when they can be addressed cost effectively.

8 – Heuristic evaluation against best practices. An expert observer conducts the heuristic questionnaire with each individual participant on completion of all the scenarios.

The usability process is applied iteratively, employing all or a subset of the above, until the right people are satisfied that the optimum design has been achieved.

Assessing Impact Reaps Rewards

Web searchers cannot find the information they seek in online searches about 60% of the time¹. The best sites are usable only 42% of the time, and, in government usability studies, none of the studied sites were usable a majority of the time². Cost-benefit analysis research has suggested that an investment in usability can produce a return on investment in the range of 3:1 to 100:1³. Usability assessment has become a requirement for all federal and state web sites and software development and many private sector companies are following suit.

Need Help?

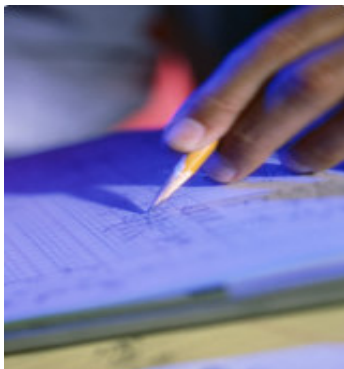
Evans has worked with clients across industries that have

recognized usability as an important part of system and software development. Our experienced usability consultants use our eight-step human-centered process to deliver cost-saving results. Evans provides value-driven services in usability, IT lifecycle management, implementation management, and change management to our clients to address usability needs at the individual and organizational levels.

Implementing for Success

With the variety of approaches to assessing and improving usability, how do you know which approach will be effective for your needs? Determining the right methodology will involve identifying your project goals and assessing your time and budget constraints. Our team of experienced consultants can help you determine the optimal approach given your specific needs and can guide you through implementation – developing the right tools for the right processes, minimizing the risk of re-work and cost overruns that can accompany the absence of usability testing.

Whether you choose Evans, another consultant, or decide to conquer usability alone, keep in mind the tools, methods, and techniques discussed in this paper to successfully introduce usable software into your user communities.



"We believe that achieving optimal performance in your organization requires a conscious consideration of the human factor. It's true whether you're developing your business strategy, executing reengineered business processes, upgrading your technology, or making changes to your human capital. Our consultants are committed to helping your organization reach the next level of performance through our unique human-centered approach to change management and process reengineering. It's how we help you energize your organization." - Susan M. Evans, Ph.D - President

¹ US Department of Health and Human Services. (2002). Usability.gov. <http://www.usability.gov/basics/howusa.html> (September 6 2007).

² ibid

³ US Department of Health and Human Services. (2002). Usability.gov. <http://www.usability.gov/basics/usasaves.html#how> (September 6 2007).