



**U.S. Department of Agriculture
eGovernment Program**

Usability Testing Approach
usda.gov

September 2003



Agenda

I. Overview

II. Usability Testing Plan

III. Next Steps

IV. Question and Answers



What is Usability?

Usability is the overall measurement of the satisfaction of interactions a user has with a product or system such as a Web site, software application, mobile technology, or user-operated device

- ❑ **A high level of satisfaction occurs when users find a Web site that is useful and usable; this is termed an “engaging user experience”**
- ❑ **Quality of the user’s experience on a Web site can be measured using the following usability principles, or heuristics:**
 - Use a simple page design
 - Know your users and speak their language
 - Ensure consistency throughout the site
 - Design your site for efficiency and ease of use
 - Provide an engaging experience
 - Support the user and provide feedback
 - Use a clear navigation structure
- ❑ **Usability becomes increasingly important as more and more information, products, and services become available through electronic means**



Why is Usability Important?

An engaging user experience on a particular Web site results in increased usage of that site, improved user productivity, and reduced training, support, and development costs. There is always room for improvement...

- The average usability test results in 70-100 recommendations for improvements.¹**
- Users cannot find the information they seek on Web sites 60% of the time leading to wasted time, reduced productivity, increased frustration and loss of repeat visits and money.²**
- 95% of users will use less than 5% of features of a site; 75% of the features will never be used.³**
- In private industry, 62% of online shoppers gave up at least once while looking for products.⁴**
- For every \$10 spent defining and solving critical usability problems early in development using professional usability research, you will save about \$100 in development costs.⁵**

¹ Mary Harrison, Richard Henneman, and Louis Blatt, "Design of Human Factors Cost Justification Tool"

² Nielsen Norman Group, "Usability Return on Investment"

³ MauroNewMedia, Charles Mauro

⁴ Internet Access in U.S. Public Schools and Classrooms, National Center for Education Statistics

⁵ MauroNewMedia, Charles Mauro



Cost of Usability

Research has shown that the value of implementing well-executed usability testing far outweighs the investment

- ❑ **Current best practices and industry research call for spending around 10% of a project's budget on usability**
- ❑ **The cost of usability does not increase linearly with the size of the project, as there are several reusable and 'fixed' elements in the cost**
 - For a large project, the total percentage of the budget that must be devoted to usability is reduced
- ❑ **The cost of a usability effort is usually attributed to:**
 - Work effort for User Experience team members
 - User Experience Architect
 - Usability Specialist/ Assistant
 - Expenses for Usability Testing
 - Facilities and equipment
 - Participant recruiting
- ❑ **Because the gains from user experience improvement are so much larger than the costs, industry analysts believe the allocation of budget to usability will increase in the future to 20% or more.¹**

¹ Nielsen Norman Group, "Usability Return on Investment"



Usability at USDA

Many USDA agencies already include usability as a key component of their Web design and development activities

- ❑ **RMA conducted extensive audience analysis studies as well as usability testing of their Web site and Web-based applications**
 - Created a conclusive usability report that summarizes results of recent usability testing sessions
 - Audience assessment of key user groups is currently underway
- ❑ **ERS studied its audiences and continues to measure usability and customer satisfaction on its Web site**
 - Developed “user personas” for each of the agency's most important user groups
 - Is using Web satisfaction surveys to determine user preferences and areas for improvement
 - Usability testing is planned for future site enhancements
- ❑ **Other relevant audience studies have been completed throughout the Department to better understand our users: ¹**
 - eGovernment Readiness Assessment (OCIO)
 - eGovernment Marketing and Grower Relations Assessment (OCIO)
 - Commodity Market Information Portal Customer Analysis (OCE)
 - and more...

¹ These materials are available on USDA's eGovernment site at: <http://www.egov.usda.gov/intranet/usabilitystudies.htm>



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I. **Overview**

II. **Methodology**

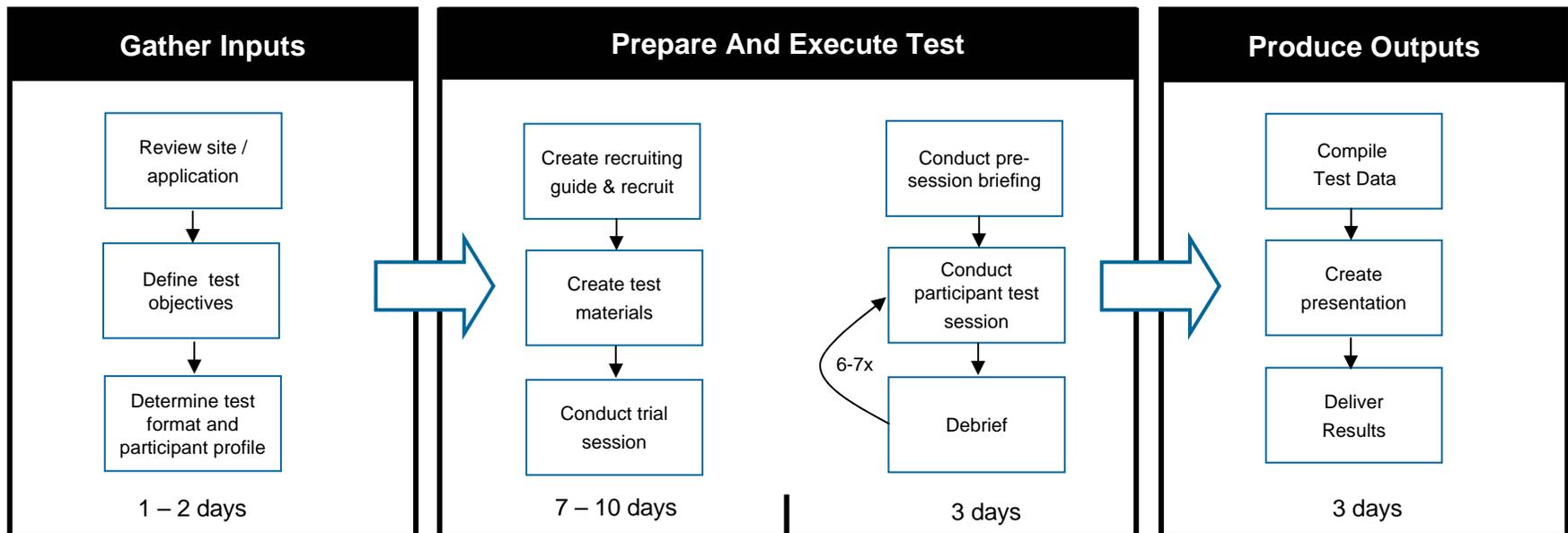
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Methodology

The usda.gov design team will conduct usability testing to ensure the design is effective in meeting the needs of our users. We will follow a consistent methodology that is based on best practices





Gather Inputs

Test planning will be conducted in accordance with the usability objectives outlined by project stakeholders

- Define the scope of usability testing and document test objectives**
 - Focus on the most important functionality/scenarios
- Determine participant profiles**
 - Consider USDA's broad and diverse user audience
 - Select user types to participate in the tests, from the following:
 - Producers
 - Agribusiness and Cooperatives
 - Educators and Students
 - Rural Community Members
 - Families
 - Conservationists and Landowners
 - Researchers
 - Members of the Media
 - USDA employees
- Determine test format**
 - One-on-one interview sessions led by a test facilitator
 - Test results documented during each test, and compiled following all test sessions



Prepare Test

Testing materials will be prepared in advance by the usability team. The test should be structured in a way that allows participants to assess the site's ease of use, look and feel, and content structure

Create recruiting guide and recruit users

- Screening criteria are documented for test participants
- Participants are recruited by an independent market-research agency

Create test materials

- High-level test scenarios are selected based on user intentions and content/service needs
- Test scripts show a user's path through the system
- Consistent standards are set to facilitate test sessions for all participants
 - Consistency results in higher-quality results
- Includes instructions, test scripts, and anticipated questions and answers

Conduct trial session

- It is recommended that the facilitator conduct one or two trial sessions to ensure proper flow of test scenarios
- Updates, if necessary, are made to the final scripts



Execute Test

Usability test sessions will be conducted in Accenture's Interactive Design Group (IDG) testing facility, located in Reston, VA

☐ Tests are scheduled for the week of October 20, 2003

- Testing will occur over a span of three days
- Approximately 18 participants will be tested

☐ A typical day of testing includes:

- Introduction and welcome (30 minutes)
- Pre-session briefing (5 min)
- 6 test sessions (1 hour each)
- Debrief following each test session (10 minutes)
- Final summary and prioritization of usability issues (30 minutes)



A test facilitator leads each participant through a series of predefined scenarios

☐ Test participants are monitored throughout each session

- The participants' actions are observed by the test facilitator and members of the design team
- Comments from the participant and usability issues are documented by the test observers
- All team members and stakeholders are welcome to attend and observe test sessions



Produce Outputs

Following usability testing, usability issues and associated design recommendations will be documented, prioritized, and presented to stakeholders

Compile test data

- All usability issues are documented and categorized in a spreadsheet
- Design recommendations are proposed for each usability issue
- Usability issues are assigned a level of priority

Create presentation

- A presentation is created to deliver usability results and recommendations
- This presentation focuses on high-priority usability issues, and provides visual depictions of proposed design changes

Deliver results

- Results and recommendations are presented to project stakeholders
- Design team makes necessary updates to the design templates and the UI style guidelines document
 - Possible changes could include color scheme, navigation elements, site structure, or language.



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Next Steps

- Obtain stakeholder approval on usability test approach by September 24th
- Finalize participant profile by September 26th
- Initiate recruitment of usability test participants by October 1st
- Prepare test scripts and other materials
- Attend sessions scheduled for the week of October 20th



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Question and Answer

