Testing Users through the Internet: A Method for Assessing Web Design


Studying Web users in natural settings—working from their PCs at home—requires remote testing through Web sites that seamlessly present design variations, track user behavior, and deliver surveys that collect data on user experiences and demographics.

Delivering an experiment via the Web has many potential benefits. It offers a unique challenge in order to ensure internal validity and test reliability, capture user behavior unobtrusively, extract meaningful information from server logs, and collect valid survey data.

**Issues in Testing Users through the Internet**

**Providing a Natural Experience**
- Use server-side instrumentation to invisibly assign users to study conditions.
- Limit indications that participants are in a study to:
  - Study instructions (if needed)
  - Consent information (as required)
  - Surveys

**Identifying Back Button Use**
- Infer Back button use when logs indicate a mismatch between originating page and last known page request.
- Control browser caching by inserting no-cache directives in study pages.

**Pilot Testing**
- Perform a usability test before launching the study to ensure that remote participants will understand the study materials.
- Test the study materials on different browsers and platforms.

**Attracting Target Users**
- Provide instructions on the study home page that state who should participate.
- Use a demographics survey to identify target vs. non-target users.
- Advertise the study on:
  - Web pages that might be visited by target users
  - Flyers that are strategically distributed.

**Handling Study Dropouts**
- Perform the study with fast-loading Web pages.
- Limit length of survey instruments.
- Offer incentives to those who complete the study (note: this may increase the chance of recruiting non-target users).

**Controlling the Study Entry Point**
- Create a study home page.
- Redirect users to the study start page if they enter other pages in the site being studied.
- Use a robot.txt file on the Web server to limit the chance of search engines finding study pages.

**Tracking Individual Users**
- Avoid depending on IP addresses (they are unreliable because of proxy servers and dynamically assigned IPs).
- Track individual users by combining customized logging capabilities, server-side assignment of unique participant IDs, and instrumented links within the Web pages.

**Meeting IRB Requirements**
- Describe the study risks and eligibility criteria on introductory pages.
- State that participants can leave by closing their browser.
- Save study data logs in a secure database or a password-restricted location.