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Topic (ii): Challenges and opportunities for statistical offices working in a network environment

**DATA DISSEMINATION TO A WEB-BASED AUDIENCE:
MANAGING USABILITY TESTING DURING THE DEVELOPMENT CYCLE**

Submitted by U.S. Bureau of Labor Statistics ¹

INVITED PAPER

SUMMARY

I. INTRODUCTION

1. Perhaps no infrastructure change has had as significant an impact on the day-to-day business of statistical agencies as the growth of the Internet and the accompanying quantum increase in the number of data customers who now expect and demand full access to an almost unlimited selection of statistical information.

¹ Prepared by Michael D. Levi.

2. In addition to the long-standing requirements for accuracy, timeliness, and reliability, there is one more essential requirement for statistical data dissemination: The information presented must be intelligible to the intended audience. This poses a significant challenge to all producers of economic statistics. As the audience has grown larger it has also grown much more diverse. Presenting complex data in a form that can meet the differing needs of a highly varied user population is a non-trivial task. What is at stake here are the human factors, or usability, of a particular screen design or sequence of screens.

3. Usability can be defined as the degree to which a given piece of software – including presentation systems such as a Web site – is an effective and helpful tool for the computer user who is trying to accomplish a task, as opposed to being an additional impediment that must be overcome before the task can be successfully completed.

4. Methodologies for building usable systems have been introduced and refined over the past twenty or so years under the discipline of Human-Computer Interaction (HCI), or usability engineering. HCI principles include an early and consistent focus on end users and their tasks, empirical measurements of system usage, and iterative development.

5. Like other software engineering methodologies, usability engineering includes requirements gathering, design, implementation, and testing phases. Usability testing is the process by which the human-computer interaction characteristics of a system are measured, and weaknesses are identified for correction. Such testing can range from rigorously structured to highly informal, from quite expensive to virtually free, and from time-consuming to quick.

6. The resources required to effectively implement usability engineering into a Web site development effort fall into three main categories: staff, time, and money. There are ways to reduce the required expenditures in each of these areas, and it is quite feasible to start small and add resources over time as the concrete benefits of usability testing emerge through use.

7. For most statistical agencies the World Wide Web has become the major vehicle to disseminate economic data to its customers, and has become the primary points of contact between a given organization and its user base. Ease of learning, ease of use, and general user satisfaction will play a major role in determining the success or failure of the Web site.

8. Ultimately, the only real way to begin usability analysis in an organization is to take a deep breath and simply start, trusting that the details will fall into place over time.