

# The Customer Speaks: Assessing the User's View

**By Barbara P. Silcox  
and Paula Deutsch**

*Barbara P. Silcox (barbara.silcox@nist.gov) is group leader of the Research Library and Information Group at NIST.*

*Paula Deutsch (paula.deutsch@nist.gov) is a technical information specialist at the NIST Research Library.*

## ••• NIST Survey—Process and Results

**THIS ARTICLE DESCRIBES ASSESSMENT ACTIVITIES AT THE NATIONAL INSTITUTE of Standards and Technology (NIST) Research Library and their role in decisionmaking and strategic planning. Future articles will address the library's benchmarking activities and how the results of the customer survey and benchmark study were incorporated into the library's operational and strategic planning.**

### A Need for Assessment

The challenges facing libraries over the past decade have been great: decreasing or static budgets, costs increasing at a faster pace than inflation, exponential growth in information content and technologies, and rising customer expectations. Today more than ever, libraries in all sectors are being asked to be accountable, responsive, and innovative, and to demonstrate their value in the face of competing priorities. Like other types of organizations, libraries are expected to document that assessment data are gathered, analyzed, and used to inform planning that results in improvements to products and services as well as better stewardship of resources.

There is growing recognition within the field of the need for librarians to make systematic data collection and analysis an integral part of their tactical and strategic planning. Since 1999, the Association of Research Libraries (ARL), through its New Measures Initiative, has been addressing its membership's interest in identifying best practices and developing new tools for assessing library performance. At a February 2001 Forum on Performance Measures and Statistics for Libraries sponsored by the National Information Standards Organization (NISO), discussions confirmed that libraries need concrete ways to demonstrate their value to the communities they serve. The SLA, in its June 2001 research statement "Putting Our Knowledge to Work," recommended that special librarians adopt "evidence-based practice" to make professional decisions and advance the knowledge base in information and library science. Evidence-based practice refers to the systematic use of data, measures, and research results to support planning and decisionmaking.

Managerial decisions made by librarians are often arrived at by "knowing what's best for the customer," based on professional judgment and personal experience. Furthermore, they are frequently constrained by the need for making them quickly, the availability of sufficient resources, and stakeholders' views and

misperceptions about library services. To remain viable, special libraries must routinely and systematically use methods for listening to their customers, measuring performance, and demonstrating impacts to both customers and stakeholders. Furthermore, they need to undertake and use the results from assessment activities on an ongoing basis to make short- and long-term organizational improvements and respond to the ever-changing landscape of new technologies and customer needs.

The idea of evidence-based practice, or data-driven decisionmaking, raises many questions. How do I collect meaningful data? How can I make sense of it? What do I do with it? This article describes how the Research Library at the National Institute of Standards and Technology (NIST) attempted to answer these questions.

In fall 2001, the NIST Research Library embarked on a multipart assessment project to learn more about customer needs and satisfaction and how the library compared with peer institutions. The results of these activities were used to guide strategic planning, decisionmaking, and operational improvements. The assessment activities themselves enabled the library staff to develop new competencies and laid the groundwork for embedding a new paradigm of thinking, attitudes, and support for assessment and evaluation as an integral part of the library's everyday work. All members of the library staff understand the importance of being customer-focused, and they all contribute in some way to data collection and analysis.

This article discusses the first of the two major assessment activities—a customer survey to determine researcher use and satisfaction with the NIST Research Library's collection and the impact of journal cancellations on the NIST research environment. It addresses the challenges the library faced in developing a survey instrument to collect meaningful data, the strategies it used to develop and conduct the survey, and the actions it took based on what the survey revealed.

## NIST and the NIST Research Library

NIST is a nonregulatory federal agency within the U.S. Department of Commerce. Its mission is "to develop and promote measurement, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life." Its work is focused on advancing the nation's technology infrastructure and supporting industry. NIST operates in two locations: Gaithersburg, Maryland, and Boulder, Colorado. It employs about 3,000 scientists, engineers, technicians, and support and administrative personnel. About 1,600 guest researchers complement the staff.

The NIST Research Library's primary customers are the researchers in the NIST laboratory programs at the Gaithersburg location. The laboratories conduct research in a variety of physical and engineering sciences, including biotechnology, building and fire research, chemistry, electronics, information technology, manufacturing, materials science, mathematics, metrology, and physics. The Advanced Technology Program, which co-funds research and development partnerships with the private sector, is also a significant customer group.

The NIST Research Library is one of three work units within the Information Services Division. The library has a staff of 17 and maintains a collection of about 300,000 volumes and 1,150 journal subscriptions. Over most of the past five years, its collections budget has remained static. As a result, the annual purchase of monographs has decreased by 52 percent. In 1999, the Research Library cut its journal subscriptions by 31 percent to stay within its budget. An additional 13 percent in cuts in journal subscriptions were made in 2000.

### Voicing Concerns

In April 2001, the Research Advisory Committee (RAC), an internal advisory group that makes recommendations to management on scientific issues and research activities at NIST, voiced concerns about the declining state of the NIST Research Library's collections in its annual report to the NIST director: "RAC considers the NIST Research Library to be one of the most important components of the critical infrastructure that supports diverse and often very specialized research needs of NIST scientists.... Regardless of near unanimity about the importance of maintaining the NIST Library at the highest possible standard, RAC believes that their function and service are being adversely affected by inadequate and stagnant funding.... At this current rate of decline, RAC is convinced that the NIST Research Library will not be able to meet the needs of the scientific and technical staff in the very near future."

In response to RAC recommendations, the acting director of NIST requested that the Research Library undertake several assessment activities to determine whether addi-

tional funding for the collections was warranted. These activities included (1) developing mechanisms for gauging the overall impact of recent journal cancellations on the NIST research environment; (2) conducting a survey of NIST scientists and management to assess research needs; and (3) benchmarking itself against scientific and technical libraries in other government agencies and the private sector. While management agreed with RAC that the Research Library is indeed a vital NIST resource, determining spending priorities to fund all vital NIST overhead activities involved making difficult choices, given the limited overhead dollars.

It was clear that the Research Library had a critical need to demonstrate concretely the value it brings to the NIST community. Furthermore, it had to demonstrate that it was being responsive to customer needs and was making wise, well-informed purchasing decisions.

### Collecting Meaningful Data

In summer 2001, the NIST Research Library contracted with two consultants from the University of Maryland College of Information Studies to develop a survey instrument, conduct focus group sessions, and analyze the survey results. The consultants had experience conducting library user studies and customer surveys as well as experience with the NIST research community. They worked closely with the library staff during each step of the process.

Library staff met with the consultants to discuss the survey's purpose and focus, data collection methods, the survey time period, and reporting requirements. While the broad mandate to the Research Library was "to conduct an electronic survey of NIST scientists and management every few years to better assess and coordinate library and research needs," the group decided to limit the scope of the survey to assessing customer needs and satisfaction with respect to the library's collection. This decision was based on the specific concern expressed by RAC and other members of the NIST research community that the library's collection lacked many information resources deemed critical to supporting their research.

The consultants and library staff looked at a number of options for assessing the impact of journal cancellations on the NIST research environment. They considered conducting individual and small group interviews, adding exploratory questions (one closed question and one open-ended question) to the customer survey, conducting a separate survey focusing solely on impacts, analyzing interlibrary loan records before and after journal cancellations, and conducting a citation analysis study of NIST researchers' citing behaviors before and after cancellations. Because of time and budgetary constraints, the group decided to defer the analysis of interlibrary loan

records and citation behaviors. The impact of declining collections would be addressed by the inclusion of additional questions on a single survey.

The group reviewed the 1998 customer survey to determine whether any questions from that survey could be used in the 2001 survey. Using the same questions across survey years would enable the library to track trends. The 1998 survey sought information from library customers on a broad spectrum of library services and resources. Questions on that survey relating to the library's collection were modified slightly and incorporated into the new survey.

The consultants conducted a focus group session with eight members of RAC to discuss ways in which NIST researchers have been or could be affected by journal cancellations. Focus group participants were asked for input on how to measure these impacts. Discussions with the focus group yielded 12 possible impact factors, such as damage to personal or institution's reputation, decrease in the quality of work, loss of time trying to find information from another source, failure to meet a deadline, and costs incurred by the researchers' operating units to purchase journal subscriptions on their own.

There was much discussion of the best way to phrase the impact questions and how the library could gauge the level of intensity of the impacts from the results, if at all. In the end, the results of the survey provided baseline data for further study, and intensity was measured by the percentage of respondents who said they had experienced an impact factor. For each impact factor, respondents were asked to indicate the degree of impact they had experienced: no impact, minor impact, moderate impact, or major impact. On eight impact factors, respondents were asked to quantify the impact; for example, number of deadlines missed in the past 12 months or dollars spent on subscriptions purchased by the operating unit.

A paper version of the survey instrument was pretested with nine members of RAC, and questions were refined based on their feedback. A key challenge in developing the survey instrument was determining the right number of questions to get sufficient information to address the concerns of RAC and the NIST acting director while not overburdening participants with a time-consuming survey. The Web-based survey consisted of 11 questions and took 15 to 20 minutes to complete. Two questions sought demographic information: length of service at NIST and the division (department) in which the respondent worked. The remaining nine questions focused on use of and satisfaction with information resources from the NIST Research Library (by type of resource, subject area, and age of journal); use of and familiarity with scientific and technical databases (those to which the library subscribes

as well as those that NIST researchers may have used elsewhere); the value (importance) of information resources to researchers; and the impacts of journal cancellations on their work. On the questions relating to satisfaction, respondents were asked to choose from three levels of satisfaction: very satisfied, somewhat satisfied, and not satisfied. Respondents were asked to indicate a reason for nonuse of resources: not knowing enough about them, not needing them, library doesn't have what's needed, or other. Each question on the survey was followed by an open-ended question seeking additional comments. These comments made the survey results particularly robust and helped to illuminate and interpret the responses to the more quantitative questions.

The survey was administered over a two-week period in October 2001. To increase the likelihood of participation, the library staff selected (with the help of RAC) only those NIST divisions known to be the library's primary customers. An e-mail inviting NIST researchers to participate in the survey was sent to 55 of the 80 NIST divisions. The message explained the purpose of the survey and gave the URL link to the Web-based questionnaire. Two reminder messages encouraging staff to take the time to complete the survey were sent midway through the survey period, one from the library and one from RAC chair.

### **Making Sense of Results**

With 528 respondents from 48 divisions, the survey results represent the perspectives of a wide variety of NIST researchers. Approximately 20 percent of the target audience responded to the survey. There were 584 comments submitted by 254 respondents on the open-ended questions. The high response rate and large number of comments clearly indicate a high level of interest in the NIST Research Library.

The scale for use of information resources was based on the percentage of respondents who reported that they used the resource: very high use information resources are those used by 75 percent or more of the respondents; high use information resources are those used by 50 percent to 74 percent of the respondents; and moderate to low use information resources are those used by 49 percent or less of respondents. Survey responses indicated that electronic and print journals, technical books, textbooks, and conference proceedings were all highly used items. This was particularly useful information, because the library had been shifting its limited resources away from technical books and textbooks to continue its support of the journal collection.

The satisfaction level of respondents was used to establish three groupings of information resources: those with a higher level of satisfaction (70 percent or more of the respondents were very satisfied); those with a moderate

level of satisfaction (50 percent to 70 percent of respondents were very satisfied); and those with a lower level of satisfaction (less than 50 percent of respondents were very satisfied).

Respondents' satisfaction was compared with their use of the library's information resources. This analysis revealed that among the very high use resources there were moderate to higher levels of satisfaction with electronic and print journals and lower levels of satisfaction with technical books, textbooks, and conference proceedings. In general, the satisfaction rates were not as high as desirable (80 percent). On high and very high use information resources, the percentages of respondents indicating that they were very satisfied with these resources ranged from 33 percent for conference proceedings to 63 percent for print journals.

Important themes that emerged from the survey results included the following:

- A need for more electronic journals and a preference for electronic resources over print;
- Subject areas in need of improvement to support new and ongoing areas of NIST research;
- Dissatisfaction with certain types of information resources (technical books, textbooks, and conference proceedings);
- Lack of awareness of many of the library's information resources, particularly databases, specific journal titles, older journals, and materials in the NIST Archives collection;
- Misperceptions about how the library selects information resources for the collections and how past journal cancellations had been handled.

A comparison of the results of this survey with the results of the 1998 customer survey revealed some important similarities and differences. Usage patterns across survey years remained essentially the same: the journal collection, technical books, and conference proceedings continued to be highly used resources. Satisfaction rates increased for electronic journals but decreased for print journals. The rise in satisfaction with electronic journals may be a result of the increasing availability of electronic journals since the first survey had been conducted. The decrease in satisfaction levels for print journals from 1998 to 2001 may be a consequence of the journal cancellations, but there is no way to be certain.

Regarding the impacts of the journal cancellations on NIST researchers, loss of time and loss of productivity while trying to obtain information from another source were the major impacts cited. More than half of the survey respondents said that these two factors had some effect on their work; however, about one-third of the respondents said that this impact was minor.

Over 40 percent of the respondents said that journal cancellations had resulted in damage to the institution's reputation due to lack of the best or most current information, decrease in the quality of work, and loss of scientific competitiveness by not being on the cutting edge. However, about 25 percent of the respondents said that the impact was only minor.

Less than 10 percent of the respondents reported a major impact on any of the impact factors, with percentages ranging from 1.3 percent on failure to meet a deadline to 6.6 percent on loss of time trying to find information from another source. NIST researchers seem to be experiencing some impact of the journal cancellations, but for many this impact is minor.

Respondents had difficulty quantifying the impact of journal cancellations. The number of respondents to the quantification question was relatively small; comments submitted to the open-ended question about impacts support this conclusion. Approximately 20 percent of the respondents provided an estimate of the total number of hours spent finding information when the information was not in the NIST Research Library. There were lower response rates for quantification of costs, number of missed deadlines, and number of decisions made with incomplete information. There were also huge ranges in the responses. The low response rate and the large variance in the quantification numbers make it difficult to draw any conclusions with regard to quantification of impacts.

Survey comments revealed the difficulty in assessing the level of impact of journal cancellations and isolating the role of the library's journal collection. They also provided useful feedback with regard to the library's interlibrary loan and document delivery services and communication between the library and the NIST research community.

### Transforming Results into Action

The results of the customer survey provided the framework for the library's activities for the remaining part of fiscal year 2002 and beyond. Despite the deliberately narrow scope of the survey, the library received useful feedback on a variety of broader issues. In deciding where to devote time and energy, the library opted to focus on making improvements that would have the "biggest bang for the buck."

It was clear from the survey results that the library needed to address marketing and communications issues. Two months after the survey was conducted, the library began a communications campaign about what had been learned from the survey and what actions it planned to take. The primary vehicles for this campaign were the Information Services Division newsletter and the NIST Virtual Library (NVL).

Communications with RAC have been ongoing since the committee's initial involvement in the development of the survey. RAC members have been briefed on the results of the survey and the library's proposed actions and on the library's continuing funding issues.

Library staff created and implemented a marketing plan to increase awareness of the library's many information resources, particularly the databases that are available through the NVL. Successful marketing will help manage customer expectations and increase awareness and use of the library's resources and services.

While there were apparent misperceptions about how journal cancellations were handled, survey comments indicated that NIST researchers preferred being consulted about what journals the library should have rather than what titles should be cut. In response, the library launched a core journal project to identify core titles for each NIST laboratory. This project laid the foundation for establishing closer working relationships with NIST divisions that evolved into the library's Laboratory Liaison Program in fiscal year 2003.

The library has not waited for additional funding to address some of the identified deficiencies in its collection. Resources were reallocated to purchase additional technical books in subject areas where survey respondents had identified critical needs. The library also reinstated a small number of cancelled journal titles and one highly needed database through consortial (discounted) purchase arrangements.

Despite the strong service orientation of the library's interlibrary loan (ILL) staff, the survey results indicated that a number of improvements to the ILL/document delivery service were warranted. Concerns expressed about this service included a lack of a mechanism for

The OPTICAL SOCIETY OF AMERICA... *Advancing the Science of Light*



**OPTICS  
INFOBASE™**  
*— delivers a research library to your desktop*

**You are in the middle of writing a paper, preparing a presentation, looking for a solution or just curious about a particular topic....**

**Wouldn't it be great if you could access the wealth of OSA peer-reviewed publications from your personal computer?**

**Optics InfoBase features:**

- ▶ **Email Alerting Service** — customize by author, journal, title or abstract keyword and OCIS
- ▶ **Reference Linking** — instantly access OSA citations
- ▶ **Power Searches** — search an individual journal or all journals on a variety of fields
- ▶ **Personal Library Collections** — build and instantly access your personal archive of InfoBase materials
- ▶ **Full-text article repository** expanding daily with current and back issues to include eight journals, one magazine and a variety of meetings proceedings
- ▶ **Bibliographic information** for all OSA articles dating back to 1916
- ▶ **A variety of subscription models** to fit your needs

**[www.OpticsInfoBase.org](http://www.OpticsInfoBase.org)**

The Customer Speaks

checking on the status of requests and the length of turnaround time for filling requests. ILL/document delivery processes were analyzed during the summer 2002. New processes and systems, including an automated interlibrary loan management system, were implemented in fall 2002. Customer satisfaction will be assessed in fall 2003.

In undertaking this assessment, the library forged new and stronger relationships with its customers and stakeholders. The knowledge gained about customer needs and satisfaction enabled the library to implement changes to improve the way it does business. The customer spoke...and we responded. ☺