DISCUSSION

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The papers in this session encompass a variety of relevant topics for conducting business surveys. The topics include new data collection technologies and their use, cognitive methods in survey design, reinterview studies, and quality assurance. The focus on methodology specifically for economic and agricultural surveys represents a direction in the survey field whose time has finally come. The papers are insightful and well written, and provide a good starting point for further discussion.

The Perron, Berthelot, and Blakeney paper on "New Technologies in Data Collection for Business Surveys" presents a broadbased review of the impact and assimilation of state-of-the-art survey technologies with particular applications to business surveys. Many of the technologies addressed are very new and their uses are in the process of being explored in the survey environment. They encompass technologies that facilitate either self-reporting of data or the interviewer's job including touchtone recognition, voice recognition, use of facsimile machines, electronic mail, touch-screen portables, hand-held devices, portable microcomputers, etc.

The use of a multidisciplinary team to keep current on the development and potential use of data collection/capture technologies is a good strategy for a statistical system to use to ensure that it stays current and continually evaluates potential use of such technologies. This is particularly effective as such technologies require us to rethink current methodology. An established multidisciplinary team ensures that a more extensive review of possibilities and limitations is considered.

The Perron et al. paper broadly discussed the impact of new technologies--on the interviewer, on the respondents, visàvis confidentiality and security issues, on survey management, and on methodology. One of the potential implications of new technology development touched on is its impact on survey data collected using different modes of collection. However, it would appear that automatization of the data collection and capture would provide more opportunities for consistency and uniformity between modes. Because of the potential impact across many aspects of the survey, Statistics Canada has developed a strategy for evaluating new technologies that might well be adopted by other survey organizations. Several of the technologies being evaluated are at the forefront of survey procedures--in particular, alphabetic and touchtone data collection, pen point computers, and data imaging.

This paper presents an in-depth discussion of an evaluation conducted on the use of the numeric hand-held microcomputer for price data collected for the Consumer Price Index. The evaluation determined that it was feasible to integrate data collection and data capture for this survey into a single operation with a hand-held computer. The testing provided additional suggestions for improvements in the instrument design and the data collection procedures increasing the effectiveness of the technology in the survey process. I'd like to complement Statistics Canada on developing this systematic approach to evaluating and implementing technological improvements particularly relevant for the business survey environment.

The Bureau paper on "Experience with the Use of Cognitive Methods in Designing

Business Survey Questionnaires" discusses techniques of cognitive evaluation and testing of business survey questionnaires first used with success in household data collections. Many of these techniques were developed by Naomi Rothwell at the U.S. Census Bureau for the 1980 Census of Population and Housing. A few applications of these techniques to the business survey environment have occurred recently in the United States to improve the design of questionnaires for the 1987 Census of Agriculture and, recently, for the 1992 Census of Construction. The references for this paper need to be extended to include some of these earlier research efforts.

The Bureau paper focuses on methods used to address the cognitive aspects of design of two business survey questionnaires. These studies provide a basis for further application of cognitive methods to economic and agricultural surveys. The identification of specific issues related to the understanding and completion of the economic questionnaires was particularly valuable in guiding research. The studies used recognized cognitive methods -- one-on-one observations and debriefing interviews, think-aloud interviews, probing interviews, and focus group sessions. The use of a donation incentive for response was creative. I wondered whether any evaluation of this motivational tool was conducted.

The results of the study validated the use of these techniques in the Canadian economic survey environment, but identified challenges unique to business surveys for these methods. Most heartening, these methods were accomplished much quicker with less costly results than a large scale field test of questionnaire issues. The substance of this paper could be improved by presenting a discussion of each survey separately rather than integrating each topic by survey. The organization of the formal presentation and the focus on specific aspects of the cognitive procedures provided a much more illuminating approach from the study results.

The Hanuschak, Atkinson, Iwig, and Tolomeo paper on "History of Reinterview Studies at the National Agricultural Statistics Service (NASS)" provides a good historical overview of the status of questionnaire reinterview studies at NASS and specific results of studies conducted during the past 3 years. Reinterview studies are designed to quantify response variance and response bias as well as permit evaluation of field data collection. The primary interest from the NASS perspective for these studies was in the quantification of response bias and its use in providing additional insight for the estimation process. Reinterview studies have been used at NASS since the mid-70's to determine the extent of nonsampling errors in the survey data collection.

The recent studies at NASS provided measures of the percent bias in the corn and soybean stock estimates, in storage capacity, and in the estimate of total hogs for the December Agricultural Survey program on a tight time schedule. Additionally, the December 1990 reinterview survey using a more detailed acreage question than in the base survey, determined that the reinterview acreage expansions were below those from the original survey. A change in the acreage question was made for subsequent surveys based on this evaluation. This is a good illustration of the varied uses that can be made of reinterview studies.

The NASS reinterview program has come under recent criticism because of the response burden caused by the sample and survey design. The most valuable aspect of this paper from the NASS perspective is the insight that was given to identifying the costs and benefits of the reinterview survey program and options for program implementation and future research. These

ideas provide a starting point for agency discussion of the issues and direction of the program.

The Colledge and March paper on "Quality Management Framework for an Economic Statistics Program" presents an excellent analysis of quality management in the context of a statistical agency and their standard programs and operations. The analysis is based on principles proposed by Deming, Juran, and Crosby. The paper provides a good description of the elements of quality management and then applies them to the activities of national statistical agencies, explicitly identifying differences in the elements of quality management attributable to government and statistical agency processes and products.

The paper then thoroughly describes quality improvement activities occurring in U.S. statistical agencies and at Statistics Canada. I liked the approach of grouping efforts by the quality characteristic that each addresses. I was thoroughly impressed with the extent of efforts at Statistics Canada without a coordinated formal quality management program. I reflected on how much improvement could be achieved if Statistics Canada were to provide the overall quality management focus that has occurred at organizations recently recognized with total quality management awards such as the W. Edwards Deming or Malcolm Baldridge awards. The conclusion of the paper raised important questions and issues relating to quality improvement that would provide a good beginning for a discussion of where and how to begin this total quality management approach at Statistics Canada.