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Discussion

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One of the major branding features for any producer of official statistics is the trust users can put in the quality of the statistics and information produced by the national statistical office (NSO). To that end NSOs as well as international coordinating bodies such as the European Statistical System, Eurostat, the International Monetary Fund and the United Nations Statistics Division have made management and statistical strategies to achieve high quality or fitness for intended use of their products a preoccupation for many years. A wide variety of useful reference documents have been produced by these organizations. In my references, I note a few that are particularly relevant to the current article. The United Nations Statistics Division Internet site is particularly useful since it in turn provides links to numerous other relevant sites and documents.

With their development of ASPIRE (A System for Product Improvement, Review and Evaluation) the authors have made a valuable contribution to the set of quality maintenance and improvement strategies available to producers of statistical information. The approach is well thought out, thorough and can be applied to great benefit within any statistics producing organization. Congratulations!

In this discussion I will highlight some of the major characteristics of the ASPIRE methodology and follow that by briefly describing a comparable program of Quality Reviews conducted at Statistics Canada. I will conclude by contrasting the two strategies with respect to their emphases, advantages and disadvantages.

1. ASPIRE

The ASPIRE framework and process are well described in the article; I include a very brief summary here for easy reference by readers of this discussion. ASPIRE emphasizes the accuracy dimension of quality and provides a systematic framework for addressing quality improvement in statistical programs and their products. Its main objectives are to identify important risks to product quality and areas where investment is needed to reduce risk and improve quality. This is done by application of a very structured and comprehensive rating of program efforts to reduce or manage risks. It leverages on total survey error principles and decomposes total error into its major components or sources and for each assesses risk to data quality using five evaluation criteria. After an extensive review of background material and meetings with the product team an evaluation team of independent external expert reviewers assign a rating on each evaluation criterion for each error source. The inherent risk for each error source is also assessed. A product's error source scores as

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well as an overall score are derived. This then provides the basis for managers both to take decisions on where it is most important to invest effort into risk reduction (and, if successful, thus improving data quality) and, with repeat evaluations, to assess progress over time.

2. Quality Reviews

At Statistics Canada an organization unit called the Quality Secretariat was created in 2000 with a mandate to promote and support the use of sound quality management practices across the Agency. Starting in 2007 one of its major initiatives has been a program of Quality Reviews whose goals are broadly similar to those of the ASPIRE framework. However, the manner in which it is undertaken is somewhat different.

Each year a set of statistical programs is subjected to an independent internal assessment in which their practices to prevent erroneous data from being released are reviewed. In a first objective, risks are identified and assessed in terms of their likelihood of occurring and of their impact for the program and Statistics Canada if they materialize. While these risks and impacts are rated in a typical risk management framework there is no ASPIRE-like use of formal evaluation criteria and product error scores. Secondly, best practices that should be shared with other program areas are identified and recommendations are developed to address important residual risks to quality.

Programs for review are proposed by members of Statistics Canada's senior-most management committee. While some attempt is put to selecting programs across a range of areas, programs are also selected when it is strategically useful to do so. Good candidates for review include programs: about to undergo redesign; that have experienced quality issues or which have known vulnerabilities. Each year three to six reviews are conducted concurrently, all being coordinated by the Quality Secretariat. A separate review team, usually two people, is put together for each program to be reviewed. Reviewers are Statistics Canada employees at the middle management level and are assigned to review programs outside their current area of responsibility.

Reviewers conduct their review in a fashion much like that of the ASPIRE reviews. A summary of their findings is presented to the senior management committee and a more detailed report is delivered to the managers of the reviewed program. Copies are retained by the Quality Secretariat and are made available to other managers upon request. As well, information on the identified quality assurance risks and practices has been assembled together and made available to all employees.

In addition to obvious benefits to the reviewed programs, there are valuable benefits to the organization as a whole arising from the notion of sharing. The expertise of the various middle managers involved is shared to other programs and to the other participants in the reviews. In selection of programs and in initial kickoff meetings a strong emphasis is put on the positive nature of the undertaking and on improving quality by identifying and sharing of best practices, whether it be those of the reviewed program that may help in other areas or those of other areas that may help the reviewed program.

3. ASPIRE and Quality Reviews

These two strategies share similar goals – quality improvement in the products of statistical organizations. Either can constitute an additional element in an integrated

enterprise wide quality management program. Both achieve this via the integration of risk management and quality management concepts and strategies using small independent (more on this in a moment) review teams which consider the program/products under review, identifying strengths and areas of possible concern where action could or should be taken. Both primarily consider the accuracy dimension of quality. ASPIRE does this within a framework considering all quality dimensions while the Quality Reviews have the flexibility to be applied for other aspects of quality.

There are also some important distinctions.

ASPIRE provides a degree of rigour through its structure and comprehensiveness including formal evaluation criteria. This rigour helps ensure its robustness for use and consistent interpretation of findings across different products and in differing statistical organizations. Independent reviewers would be motivated to do so anyway but the ASPIRE rigour further helps ensure that reviewers are thorough and forthright in their evaluations. Although rigorous and clear in their governance and deliverables, the Quality Reviews proceed more from a best practices perspective and do not have the same extent of formal structure. The superior rigour and independent expertise of the reviewers in ASPIRE provides benefits externally for accountability and credibility that the Quality Review process cannot.

A very important element in these frameworks is the independence of the reviewers, both actual and perceived. Associated with this is the stature and expertise of the reviewers. ASPIRE achieves this by hiring external reviewers who are highly regarded experts in the domains of total survey error and quality management for statistical organizations. This conveys significant benefits. Their independence cannot be disputed and their authoritative standing can readily be influential and add value to the organization through the influence of high level expertise not currently available at the statistical office. However, such experts are not common and may not be readily available as needed by the statistical organization. Statistics Sweden has had the same reviewers for its first few ASPIRE rounds; this has helped ensure consistency in application of the process and in scoring. Now, ASPIRE has designed into it a robustness for inter-rater reliability but still I wonder about the challenges that may arise in the future when the review team changes or for an organization that cannot achieve the same degree of constancy in the reviewers.

The Quality Reviews differ. Reviewers are selected internally and different review teams are put together for each program. Clearly they cannot be as explicitly independent as the ASPIRE reviewers. Independence of these reviewers is addressed by ensuring they come from different organizational areas than the programs under review. Also very important in this regard is the Quality Secretariat's coordination and initial communications to reviewers concerning their role, their independence and expectations for forthright, honest and constructive evaluation. Over several years of Quality Reviews the Quality Secretariat has been very pleased with the degree to which these expectations have been fulfilled.

In selecting external experts, ASPIRE is potentially able to bring to bear new expertise and a degree thereof not available within the statistical organization. The internal reviewers used in the Quality Reviews provide knowledge and skills that are perhaps more fine tuned to the culture and business practices of the office. An important ancillary benefit of using internal reviewers is the training opportunity for the reviewers and the potential indirect improvements for the programs for which the reviewers are responsible.

Although ASPIRE can be applied more generally, it will perform to greatest advantage for recurring products that can be reviewed on repeat occasions. When done this way, as was the case for several products at Statistics Sweden, it will perform very well to assess progress against past findings and recommendations as well as to identify further opportunities for quality improvement. To date, Quality Reviews have not been used in this way but it would not be complicated to do so by implementing either repeat reviews or a process for reporting on progress on past review recommendations.

To conclude I would like to again congratulate the authors on their development and implementation of a great framework and process for quality improvement in the products of statistical organizations. Like the authors I also look forward to the experiences of other NSOs who implement ASPIRE or some other similar approach.

4. References

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