



SOCIETY OF ACTUARIES

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Data Quality — Whose Job Is It?

by Janice Bricker

Of course, we would all agree that data quality is important. The concept is akin to world peace. Who could make a good case against it? At the same time, this issue may not be a high priority in our day-to-day actuarial worlds. Although the quality of data impacts the results of any actuarial exercise, and actuaries can attest to their frustration with bad data, it is not a hot button. Often the responsibility of data quality is delegated to other third parties such as pension plan sponsors, with some editing or scrubbing occurring in the actuarial consultant's shop. Of course, qualifiers and disclaimers also accompany any actuarial report. But is that enough?

The specific type of calculation we are performing very often drives our level of interest in the quality of the underlying data. For instance, calculating a final pension benefit for a retiree demands a level of attention to the accuracy of the census data that perhaps an actuarial valuation does not. At the same time, actuaries are continuing to explore traditionally nonactuarial fields, such as benefits outsourcing, where data quality takes on an entirely new meaning.

In the benefits outsourcing industry, data quality is a critical component. The outsourcing vendor's highly automated systems environment relies upon it. These systems receive regular (often daily) feeds from a variety of sources, including client Human Resource Information System (HRIS) and payroll systems. The vendor is charged with delivering accurate and timely information to plan participants about benefits eligibility and amount. In the absence of high-quality data, manual validation is often the outcome, and this can be a very expensive proposition.

Obviously the business challenge is making sure the data is of the highest quality. That implies that data elements

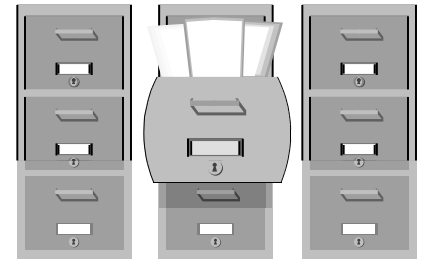
are internally consistent with each other and do not violate the application-driven business logic. As companies migrate to the Internet (intranet or extranet) to deliver benefit information "real time," it becomes critical that the systems environment incorporate an efficient mechanism for diagnosing and correcting data problems quickly. Otherwise, these errors spread like a virus, infecting multiple systems down the line and posing the risk of employee miscommunication.

What Does Actuarial Standard of Practice No. 23 Say?

ASOP No. 23, effective December 31, 1993, provides guidance on selecting, reviewing, and making proper disclosures with respect to any data that is the basis for an actuarial work product. It defines data as "numerical, census, or classification information and not... general or qualitative information." It continues, "assumptions are not data *per se* but data are commonly used in the development of actuarial assumptions."

Although the Standard suggests that "data which are completely accurate, appropriate, and comprehensive are seldom, if ever, available," it recommends that actuaries comment on "material data limitations" despite the fact that "a review of data may not always reveal imperfections." In particular, the Standard requires that the actuarial report include the following disclosures:

- Sources of data
- Material biases due to imperfect data
- Adjustments made to correct for imperfect data
- Extent of reliance on the data supplied by others
- Impact upon the work product of insufficient review of the data
- Unresolved data quality concerns, which materially impact the work product



Of course, any deviation from the Standard must be justified. Although ASOP No. 23 suggests that actuaries need not audit the quality of the data they receive, the process of creating such a standard validates the importance of this issue for the profession.

How My Firm Ensures Data Quality

At my firm, we believe that the lack of data quality significantly impacts the business community. In the pension area alone, billions of dollars are wasted annually by U.S. corporations due to poor quality employee benefits data. We also understand that without the proper tools to allow indepth analysis, it is virtually impossible to make a data quality assessment. To address that need, we offer a comprehensive solution for information integration and information quality assurance.

Our methodology is based upon the premise that the majority of data errors are caused by a systematic process, such as a new program written to extract data from a system, and not by some random event, such as keypunch errors.

Therefore, the process is one of analyzing the data to discover clues to these error patterns and developing algorithms for automating the error correction process.

In our work with benefits outsourcing vendors we collect all pertinent data from source systems (HRIS, payroll, outsourcing vendor, data warehouse), consolidate and cleanse the historic benefits data and migrate all required data elements in the vendor's specified format to the destination system. Our solution:

- Supports interfaces with multiple disparate data sources
- Facilitates data analysis to address consistency with complex, application-driven business rules
- Includes a powerful, proactive mechanism for correcting bad data and auditing all changes made to any data element for future reference
- Allows retroactive corrections to erroneous data that has entered the destination system

In our experience in the benefits industry, data is in error about 50% of

the time. This means that every second pension calculation is based upon faulty data. With our solution, we are able to reduce that error rate to under 5%, which outsourcing vendors consider very manageable in a highly automated environment.

Why Is Data Quality Important for Actuaries to Address?

The number one reason is ASOP No. 23. Let's consider another. In an effort to expand its horizons, the actuarial community is trying "pitch a big tent." In fact, this is the theme of the May/June issue of *Contingencies* magazine published by the American Academy of Actuaries. I believe this initiative is very important for the continued growth of our profession and, of course, deserves our undivided attention. Keep in mind that a key component to our ultimate success in

pursuing alternative career paths is the discipline that has sustained the profession over time. This same actuarial discipline requires that we re-examine our current standards in light of these new environments.

ASOP No. 23 may not have been on everyone's radar screen, but it deserves a second look. Individually as practitioners and collectively as a profession, our credibility relies upon attention to actuarial standards. And, our clients deserve the best work product we can generate.

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HELP WANTED

Speakers are needed for the retirement systems sessions at the year 2000 annual meeting. The meeting is scheduled in Chicago on October 15-18.

The retirement systems sessions are:

Monday, October 16

- 10:30-12:00 Session 12IF, The Latest on Mortality Projection
- 2:00-3:30 Session 29PD, Lump Sum Topics

Tuesday, October 17

- 8:30-10:00 Session 56IF, Recent Trends in Retirement Benefits Design
- 10:30-12:00 Session 74TS, Communicating Retirement Plan Concepts
- 2:30-4:00 Session 84PD, New Developments in Cash Balance Plans

Wednesday, October 18

- 8:00-9:30 Session 131PD, Testimony - Is That Your Final Answer?
- 10:00-11:30 Session 122TS, Current Issues in Social Security
- 10:00-11:30 Session 140TS, Soft Computing Applications in Insurance
- 12:00-1:30 Session 149IF, Retirement Systems Research and Education Activities

Please volunteer to speak at a session by sending an email to: ParmenterN@aol.com

Thanks much for your consideration.