Risk Management Information Systems:
The Contractor's Aid to a Successful Bid

by Paul Steinman

Insurance costs, or more accurately the "Cost of Risk," can easily add up to hundreds of thousands or even millions of dollars.

It has therefore become essential for contractors to understand these costs and be able not only to track, but also to predict them.

A risk management information system (RMIS) can help to do this and at the same time provide a contractor with a distinct competitive advantage. By capturing the information necessary to establish its own insurance cost rates, a contractor can use his or her own individual rates for bidding and charging insurance costs in lieu of industry standards.

For a contractor who relies on the bid process to obtain work, the method of pricing insurance costs in a contract may be the difference between winning or losing a bid. Since insurance costs can run as much as 15 to 20 percent of payroll costs, the ability to develop accurate insurance cost rates is critical to the success of a contractor's business.

Unfortunately, for most contractors, the information needed to develop accurately their own insurance rates has not been readily available. In order to take more control, several contracting firms are implementing the latest in RMIS technology. A RMIS is a computer program designed to collect and correlate information pertaining to a company's insurance or risk management program.

To be effective, the RMIS must have the capability to capture all historical claims data including prior valuations (changes in payments and reserves over time for an individual claim or group of claims) and exposure information, such as payroll, number of employees and number of vehicles. Each of these components is essential to the calculation of insurance rates.

One of the difficulties often confronting a contractor's risk manager is the collection of the needed information for rate calculations. Frequently, the essential information is scattered among several different sources: loss information may be on one or more insurance company's or third party administrator's systems; payroll and other exposure information may be located on an internal accounting system; insurance premium data may be gathered in yet another manner.

Illustration by John D. White

This presents obstacles in the risk management process, since each system maintains information in a different format. Fortunately, a few RMIS vendors provide data collection as a service. Vendors such as Corporate Systems, Johnson & Higgins, and Risk Sciences Group can consolidate information obtained from other systems into a single database. These vendors can even maintain historical valuations when they are not provided by the contractors' service provider(s). The formation of a single database and the maintenance of prior valuations form the foundation for the contractor s development of its own insurance cost rates.

Once the necessary information is collected, the RMIS serves as a tool in the calculation of insurance cost rates. Stages in the rate calculation process are:

- Computation of loss development factors,
- Calculation of trend factors, and
- Actuarial review.

Loss development factors represent an analysis of the way incurred losses actually develop over time. They are intended to correct for mistakes in approximating the ultimate reserves for known but unsettled claims and to make allowances for incurred but not yet reported claims. Since they are based on historical information, their use assumes incurred losses will continue to develop in the same manner.

Loss development factors are derived by looking at losses from each policy year at several different points in time (a process known as loss triangulation). Once historical information is accumulated on the RMIS, this type of analysis can be performed.

Development factors alone do not allow for accurate projection of future losses, since they fail to take into account inflation or other factors subsequent to the time past losses were incurred. Trend factors are used to account for such changes. When coupled with the derived development factors, they create a sound method to calculate insurance cost rates.

Although calculation of development and trend factors may seem straightforward, several judgments need to be made in evaluating which development and trend factors to apply. Examples would include how to deal with shifts in the mix of work being undertaken or in the demographic make-up of the contractor's work force.

Therefore, it is recommended that the rate calculation process be addressed in conjunction with an actuary. Only an actuary is qualified to make the judgments that go into effective rate calculation.

Once losses are trended and developed to ultimate costs (the final incurred amount for a given policy year), rates can be calculated per unit of exposure through simple division. Since insurance is governed separately in each state, it is not enough to develop a single rate if a contractor has multi-state operations. Instead, rates need to be developed by state to reflect each state's own insurance nuances. While this type of manipulation is not a problem for most risk management information systems, it too needs to be done in conjunction with an actuary in order to make sure that enough data are available to perform a valid calculation.

As a case in point, let us look at the experience of one particular contractor - The Davey Tree Expert Company. The risk manager for Davey Tree, Ronald Cole, uses a variety of methods to develop insurance cost rates based on his company's own experience.

One year ago, Davey Tree implemented a PC-based risk management information system. Davey Tree used this RMIS to capture all historical loss information from their previous and current insurance companies and the third party administrator's.

The system was then used to calculate expected loss rates per unit of payroll and by workers' compensation class code. Expenses were then added to the loss rate to determine the so-called insurance cost rate. This information was then reviewed by an actuary to determine whether enough data existed to validate the cost projection.

When the actuary had approved the process, Davey Tree could use their own rates and be confident that those rates constituted an accurate reflection of their expected costs. This eliminated much of the uncertainty of pricing insurance in their bids.

Implementation of a RMIS involves both time and capital investment. However, by affording the ability to price insurance based on actual experience, such a system provides a contractor with a distinct advantage over its competitors.

Also, the cost for implementing a PC-based system is substantially less than the mainframe systems of old. Annual costs in the range of $25,000 to $30,000 are not uncommon. In today's business climate, even the smallest advantages can translate into huge returns for a contractor who makes the investment to implement an effective risk management information system. CBR

Paul Steinman is a Vice President and Manager of Client Systems Development at Johnson & Higgins' corporate office in New York.