VERITA INSIGHTS

History, evolution and innovation of insurance risk control

By Victor J Sordillo PE, CSP, MBA

Verita.

The early days

I started my career in safety 40 years ago as an underwriting surveyor. Underwriters would call underwriting surveyors the "eyes and ears of underwriting." Our role was to verify the information on the application from prospective clients. For example, we would check construction and fire protection, e.g., fire sprinklers. We used to take pictures with a black and white Polaroid camera and cover it with a clear protective liquid coating that when dry, would protect the surface. The pungent odor is hard to forget.

Our reports were written on colored paper forms. The forms had check boxes to identify the characteristics of the property and a few spots for a short narrative. Most of us kept a carton of forms in our car trunk and selected the proper ones for the coverages provided. When we needed a narrative, we either hand wrote it or dictated it on a first-generation portable Dictaphone using a magnetic cartridge or band. We turned in our reports to a secretary who typed out the forms and the narrative for underwriting. If copies were needed, carbon paper was inserted between papers. If you needed more than one copy, they got lighter and lighter. The fourth copy was hardly readable.

In this role, I learned a valuable lesson in risk management. I once had seven reports on one 30-minute mini-cassette. As often happened the tape jammed while rewinding. I lost all seven reports. It may have only been a 30-minute recording, but it took three hours to dictate. It was very frustrating to have to redo my work.

We would receive a list of our assignments by locations to visit, including the contact's address and telephone number. Most often, we "cold called" the client, showing up unannounced. This led to many wasted trips. The reason was to catch the client in a normal state without giving them time to clean up for our visit.

Our navigation system was a stack of map books or fold-out maps that required a kitchen table or hood of the car to spread out. We would plot out our routes by town, streets and highways to get to our client. The maps were updated every few years but were not always accurate. When we could not find a location, our recourse was to ask strangers or stop at a gas station. Traveling in those days certainly required a good memory and planning skills.

We would visit the office on Monday to get our assignments and turn in the completed work from the past week. Travel started on Tuesday, and we were often on the road until Friday. Since we could not always accurately plan our trip, we would stay in motels that displayed a flashing vacancy sign. The best ones usually had tractor trailers in the lot.

To contact the office or family, we had to find a public pay phone. I remember keeping a box of dimes and quarters in the cars to feed the pay phone. Soon we had "the brick" or DynaTAC. I got one in the mid-80s. It was Motorola's first available portable phone. If you get frustrated when you lose a signal on your iPhone, you don't know what it was like using "the brick." It was a simple phone as opposed to the smart phones of today.

My territory was Maine and New Hampshire. I will never forget visiting a site in Bangor, Maine and finding out the location was really Bangor, Michigan. The MI for Michigan looked like an ME, and the request found me in Boston. I thought it was strange that the location was a suburban home, but I knocked on the door and to my surprise a woman and three children answered. The procedures certainly had flaws and lacked the efficiencies of modern technology.

The impact of federal regulations

Prior to 1970, there was little legislation enforcing or guiding a company to protect employees from hazardous exposures or even training them on safe procedures. The Occupational Safety and Health Administration Act of 1970 (OSHA) was adopted by Congress to hold employers responsible for providing a safe environment. Standard 1910 for general industry and 1926 for construction were developed, as required by OSHA, to provide consensus standards and regulations for the audit and enforcement of safety in the workplace. The standards cover everything from fire protection, electrical safety, noise, hazardous material, personal protective equipment, material handling, equipment guarding, and more.

OSHA gave our role a significant boost in value. Not only did we have regulations to support our recommendations, but we had clients asking for our help in identifying hazards and correcting conditions in anticipation of an OSHA inspection which could lead to possible fines.

What is in a name?

The role of risk control evolved over the years. Our importance grew in the property and casualty insurance industry. This was reflected in our name changes. Although the title varied from company to company, the most common department name was Loss Control. The title became widely adopted in the early 90s. The shift in title was in recognition that our activities had an impact on the reduction of losses and the profitability of our employer as well as insureds.

Initially loss control focused on code compliance and observation of conditions. We looked at loss history as a predictor of future losses. Our attention was on proper protection, unsafe conditions and prevention of a reoccurrence of a loss, such as a fire, burglary or injury. This is still a part of our evaluation, but we now focus on behavior and the prediction of losses as opposed to primarily the history.

It has been almost 100 years since Herbert Heinrich published his study of insurance-reported accidents proving that about one in 330 accidents resulted in major injury and 29 minor injuries, and that 95% of accidents were from unsafe acts as opposed to conditions.

Early in my career I was assigned a business software company. I helped them build the manufacturing plant in Cambridge, MA. On one of my monthly visits, I observed a young man jumping over a conveyor belt in a warehouse. I recommended that company supervisors explain to the employee the danger of this practice and require that he walk around the equipment. The older workers who were not as athletic walked around. When I looked closely at the operations, it was clear that the set up was wrong. The employees had to pass through this point to access the boxes brought in from the loading dock to put them on the belt leading to the warehouse. In the end, we built a gate into the conveyor system to allow for crossing. The gate was interlocked from the power belt to the roller system. The belt shut off when the gate was raised. It not only prevented future accidents but increased production.

Based on Heinrich, if the young man jumped over the conveyor 330 times, it is likely that he would have had an accident and be severely injured. Why was he taking the risk? The older workers would not take the risk. Was it just the physical attributes and confidence of the younger man or was it more?

At the edge of a cliff

In my experience, there are two major factors that determine risky behavior:

The first is the understanding of the risk. Does the painter know not to place a ladder near electrical lines? Does he or she know of the potential injury of electrical shock?

An interesting observation, although not based on any statistical data that I could find, is that younger people generally tend to take more risks than an older person. Is it knowledge of risk? The 25-year-old has more to lose from a physical injury as he may have 60 more years to live, and an injury could land him in a wheelchair or worse. A 65-year-old might have 20 years left to live, so less to lose. On the other hand, the 25-year-old can take more financial risk as she or he has a greater chance of financial recovery. Even though the 65-year-old may have greater assets, there is less chance of recovery from a market downturn.

The second major factor in determining risky behavior is risk tolerance. An example is the person who is afraid to fly and another who will jump out of an airplane and hope that the parachute opens. Risk tolerance is defined as the level of risk an individual or organization is comfortable taking.

It is easier to measure risk knowledge than risk tolerance. It is also easier to educate on the dangers than to regulate behavior. When I was a child, I lived near a mountain (Mountain Avenue in Malden, MA) which at that time looked huge. As children we would play there. I avoided the cliff, but there was always one child who would go closest to the edge of the cliff. Why? Shouldn't we keep the one who will get too close to the edge away from the cliff?

There have been methodologies analyzed to try to determine risk tolerance. One that I have used was the confidence level that a person has on answers to what one might consider common knowledge. For example, if we asked someone how confident they are with their answers and they are mostly confident on wrong answers, they have a greater risk tolerance.

So, if we can accurately measure knowledge and tolerance for risk, how do we use this to prevent accidents? First, we can educate the person; and second, we can place the person in a role where their level of risk tolerance is beneficial. If you are a young person who wants to invest for the future, you want a financial advisor who is very knowledgeable and has a high risk tolerance. The same young person, who needs surgery, wants a very knowledge doctor who has low risk tolerance.

The future

This new generation of risk analysis has led to rebranding the occupation from loss control to risk control. Instead of focusing on the losses of the past, we focused on the risk and how to mitigate the potential for future losses. As an industry, we looked at frequency reduction and severity elimination. As we know, in the evolution of any industry, the early adaptors are typically the most successful. I like to think that I had a role in my career of being in the lead of beneficial change.

Those of us who think ahead are looking at technology to provide better opportunities to predict and prevent accidents and losses in the future. This focus on innovation through technology led to a rebranding and title change of Verita's risk control function to Risk Advisory Services. We advise our clients on the use of technologies coupled with human behavior and data analysis, which can help us predict and prevent losses.

Some applications of technologies in various forms of usage and implementation include:

Building management system platforms
Smart building systems provide for use of technologies that have an artificial intelligence base for monitoring the health of a building. This can be similar to having a person watching every potential loss-producing condition 24/7. Smart building systems include water detectors to sense the presence of fluids where they should not be, flow prediction of piping networks to monitor abnormal flow patterns that can detect a pipe rupture, facial recognition to supplement a security system to monitor unauthorized entry into a property or portions of a property, air sampling systems to detect sick building system or presence of mold; flame, temperature, and smoke detection to not only detect fire but to monitor HVAC and health of equipment, exterior impact of the building envelope such as wind and rainfall. A central risk management portal is designed to monitor conditions and send warning when something is out of the normal range.

Human behavior monitoring
Camera systems and software are advancing to help detect unsafe actions in the workplace and even predict criminal behavior in and around the property. For example, a camera monitoring the loading dock can determine if the staff are lifting properly or if the truck arrives on time and the cargo is as expected. These systems can help determine if a vehicle in the parking lot should be there and if the behavior of the driver is suspicious.

Driver safety
Many systems are in use and being developed that can assist in determining the safe behavior of the driver. They monitor speed, stop-go-patterns, drowsiness, hours of operation, accident details, overloading, routes, etc.

Big data
The use of data is driving advancements in just about every industry. It leads to improvements in AI. For example, I recently wrote a formular for predicting fire PML. It is based on my years of experience as a registered fire protection engineer. The formular should get us within one standard deviation of the accurate amount of a fire loss. Data such as actual reported fires, advances in fire detection and control, new materials used in future construction, etc. can refine the estimates through AI and get us closer to an accurate prediction.

At Verita, one of our primary objectives is to provide innovative solutions to managing risk. Identifying risk and predicting losses will contribute to a sustainable world. We help keep people safe and prevent damage to property. We are People Protecting People.

About the author

Victor J Sordillo, Verita Director of Risk Advisory Services, has spent his career leading loss control and risk consulting at multinational companies. He joined Verita in January of 2024.

Mr. Sordillo is a Tufts University graduate where he studied structural engineering. He is a registered professional civil and fire protection engineer as well as a certified safety professional (CSP).

He has been a guest speaker at many different venues including AICPA CFO's annual meeting, the annual meeting of the American Society of Civil Engineers and the American Society of Safety Professionals seminar program. His topics cover innovative approaches in safety and security. Recent publications include the cover story, "What are the Odds" for Risk Management Insights, "Continuity Planning" for the National Safety Council and a "Supply Chain Risks" white paper.

He has held board level positions on charitable organizations such as United Way and the Red Cross. He is currently on the advisory board of the fire science program at Worcester Polytechnic Institute and is a trustee of the New Jersey Manufacturing Extension Program. He is also on the board of directors of Tevogen Bio Holdings (a publicly traded company on Nasdaq) and the advisory board of Power Edison of New Jersey.

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