The Future of Forensic Engineering

The demands of more complex loss scenarios

>> BY CHRIS GIFFIN

In Canada, the profession of forensic engineering is relatively undeveloped but burgeoning. Successful forensic engineering in the future must consider the following seven factors:

Societal Complexity: The *Harvard Business Review* dedicated its September 2011 issue to the complexity of modern society and the challenges and opportunities this complexity presents. As a result of climate change and the exponential growth of technical information, our world has become unpredictable, difficult to define and hyper-connected.

As a result of these changes, the insurance industry has had to deal with exponentially more complex losses. Forensic engineering must mirror that complexity. Gone are the days of the "jack of all trades" expert. What is required today is evermore specialized expertise, often working in teams to ensure that the hyper-connections associated with a loss are understood. It becomes obvious that the best-co-ordinated and interconnected teams can be developed only out of ever-larger firms.

Many embedded investigative or analytical tools of the past are simply not suitable for complex systems. One such tool is the assumption that a phenomenon is truly independent. This is often not the case in complex systems with their highly interconnected parts. (Think of the well-known "butterfly effect," when a small occurrence in a chain of events can cause disproportionate consequences at a later point in time.)

The Importance of Forensic vs. Generic Expertise: The insurance and legal industries are beginning to realize that generic, non-forensic expertise requires augmentation with independent, specialized forensic expertise. This is because only Forensic Engineers are experts in the science and history of what happens when things go wrong. In addition, forensic engineers understand the real-world context in which claim events occur and the requirements that result; this includes aspects such as evidence continuity, independence, providing reporting that will be of use to a trier of fact, and strong communication skills. Due to the lack of availability of such specialized forensic expertise in the past, the insurance and legal communities have had to rely on generic or non-forensic experts with varying degrees of success.

Cost: By their very nature, complex losses are more costly to investigate and indemnify. While the expenses associated with conducting an investigation must always be cost-effective, these expenses will increase as the loss complexity increases.

No Advocacy: There is heightened awareness of the inappropriateness of expert witness advocacy and issues of conflicts of interest. The New Rules of Civil Procedure in Ontario have codified the expectation that experts are to be unbiased and free of conflict of interest such that the courts can rely upon their evidence. Historically the forensic industry has been tarnished by experts who will tailor their opinion evidence in order to aid their client's interests, even when such efforts were not solicited. The insurance industry and courts have become very sensitive to this and are thus rejecting such experts. Because biased experts will likely continue to exist—despite the courts' and clients' best efforts—vigilance will be required.

Loss Mitigation and Remediation: At an ever-increasing rate, the driving factor of the cost of a loss is business interruption. A forensic investigation can no longer be undertaken in isolation of loss mitigation efforts. As a result, the forensic firm of the future must be able to co-ordinate the forensic investigation and loss mitigation and its associated remediation.

Catastrophic Losses: The frequency of large and catastrophic losses is increasing. For a forensic engineering firm to have the capacity to respond to such losses, it must be large enough to absorb such a demand.

Project Management: Larger response teams and more complex losses require excellent co-ordination and project management. The forensic firm of the future must recognize this need and staff appropriately. Good project management is a skill unto its own which is becoming more critical to the success of forensic investigations.

The forensic engineering firm that successfully addresses the needs of the future faces many challenges. The forensic engineering industry must respond to the factors outlined above. Clients must also become aware of such demands so that they can support the development of such firms. If done correctly, the future of forensic engineering is full of opportunities. TB

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