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What to Expect with Technical Investigations in Litigation

Scientists and engineers, and lawyers search for truth in different ways. Scientists and engineers follow the scientific method. Lawyers follow an adversarial process. Scientists and engineers have to be independent of the proceedings, unbiased, and objective. Lawyers are expected to be advocates. Scientists and engineers collect information about an issue, draw conclusions, and verify the conclusions. Lawyers know the desired outcome at the outset and advance arguments to support that outcome with the expectation that the arguments by both sides will illuminate the truth. The realities of a case are not under anyone's control, but a technical investigation that brings clarity and enables the parties to make good decisions will involve the following.

Scope of Work

The scope of work is critically important and will bound the range of what the testimony can cover. Initially, the scope will usually be to gather the relevant information and identify the key technical issues. Other expectations for the scope may be to provide a basis for evaluating a party's position and what it will take and cost to prevail.

Investigation Process

In the Supreme Court Daubert decision Justice Blackmun emphasized that science is a process in which an inference or assertion must be derived by the scientific method, which he described as a validation technique. This means a technical investigation should gather insight from inspections, fact witnesses, expert reports, literature searches and analyses, and testing and analyses. This data-driven approach provides a natural validation process.

The information that comes from all of these sources needs to be compiled and woven together to provide an understandable and compelling result. A good expert is both a gate keeper and a domain expert. Gate keepers see the forest. Domain experts see the individual trees. A good expert will utilize the domain expertise of other experts to complement their expertise. A good expert will also communicate the work and results in a way that is confident, clear, and understandable to people regardless of their education. Words used in a technical context can have different or narrower meaning than they have in common usage, and a good expert will make this clear throughout their communications and testimony.

Results

The results of the investigation determine what can and cannot be said in testimony. Scientifically sound is a guiding principle of what can be testified to. Scientifically sound results and opinions come from a properly defined scope of work, objective assessment, and utilization of the scientific method.

Outcome

The outcome of the investigation is determined by the scope of work, the results, and the effective communication of these elements of the investigation. A client's desired outcome is not a factor in determining the outcome of scientifically sound investigations. The best outcome an expert can provide a client is one that is objective, scientifically sound, and that provides clarity and actionable information upon which good decisions can be made, and compelling testimony can be provided.

Experience and Case Study

In addition to conducting technical investigations for litigation, often for complex, multi-disciplinary cases with large losses, Dr. Fildes led a large scientific and engineering firm of over 130 people conducting thousands of litigation investigation projects totaling over $18 million annually, and he established and led another scientific and engineering firm of 25 people conducting hundreds of cases totaling over $6 million annually. Prior to this, Dr. Fildes led a group of 35 people conducting research at Northwestern University, and he originated and conducted over $27.5 million of R&D projects.

Dr. Fildes was involved in a fairly common type of case that involved a building defect issue, but a similar situation happens in most other areas. Investigation of a building defect in a multi-dwelling complex involves inspection of the problem in several units, which then allows definition of a measurement strategy to characterize the nature and extent of the problem. The investigation methodology will ultimately involve sampling a small number of units and making an estimate of how many units have the problem. To do this properly requires careful analysis of the characteristics of the problem and the physical environment of the units to establish that the measurement will be meaningful and immune to interferences.

A sampling plan based on statistics is also needed to provide a reliable basis for estimating the number of units that have the problem, and the error rate of this estimate as is required by the Supreme Court's guidelines for expert testimony. Failure of the other side in this dispute to do this resulted in their expert's testimony being unreliable.

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Dr. John Fildes

John Fildes, Ph.D. is uniquely qualified through experience and training to provide insight on the role of science and engineering in litigation. In addition to conducting highly successful technical investigations for high-stakes litigation involving a wide spectrum of metals and materials, chemical processes, and sensors and controls, he also originated and conducted over $27.5 million in funded projects including research, development, and collaborations involving Government labs, large companies, and leading universities. John was instrumental in establishing and served as co-Director of Northwestern University's federally funded Advanced Materials Intelligent Processing Center, which was a highly successful collaboration involving University staff and professors, McDonnell Douglas (now part of Boeing), the Office of Naval Research, the Naval Air Warfare Center, and the Naval Sea Warfare Center and small companies. John also organized and led a multi-year, multi-million-dollar collaboration of Northern Illinois University, the U.S. Army's TACOOM (Detroit, Michigan), the Army's Armament Research, Development and Engineering Center (ARDEC, Picatinny Arsenal), the Army's Benet Weapons Laboratory, PM Solider Weapon, and the small arms industry. John is a doctoral-level scientist who has 50 published papers, reports and presentations, and has 3 patents. John's credits involve the creation and management of an extensive and impressive list of ventures, which include:

- *CEO, Packer Engineering, an engineering services firm of over 130 staff members and $18 million in revenues.*
- *Start-up a science and engineering consulting firm of over 25 people that served industry, litigators, and insurers, of a model-based product design firm, and of a 501(C)3 not-for-profit research institute.*
- *Leader of a Northwestern University research group with more than 35 staff members.*

Our gatekeeper approach provides:

- ✓ *The quickest and best possible outcome.*
- ✓ *A unique opportunity for early resolution based on knowing 60% to 80% of what might ultimately be uncovered.*
- ✓ *Superior technical insight for even complex and multidisciplinary issues.*
- ✓ *A reliable basis for expert testimony that meets rules for admissibility established by the Supreme Court.*
- ✓ *A strategic advantage with corporate clients since they already appreciate that this approach improves outcomes and lowers costs through use of all existing knowledge and elimination of duplication.*

Our gatekeeper approach uses information research and analytics early in technically related cases and *establishes the* key *MAKE OR BREAK technical issues and everything that is known about them.* This approach requires someone who has the extensive experience with both contemporary R&D methods and litigation-related expert witness investigations so as to adapt the corporate R&D technical investigation process to the unique aspects of litigation expert witness investigations. Our experience to do this is reflected in our process to bring litigators the R&D technical investigation techniques that have revolutionized industrial R&D, providing litigators with the better outcomes and lower costs that industry has achieved in overcoming similar investigation challenges.

1. Define the Technical Issues – Inspections, insight from litigation parties, and broad literature searching are conducted to gather information from prior related cases, trade association publications, patents, manufacturer's marketing materials and reports, and Internet forums to establish the key technical issues.

2. Use Analytics to Establish What is Known About the Technical Issues – The data gathered above is analyzed using contemporary tools for data mining and modeling to adapt the available data and fill the gaps that always exist in litigation investigations.

(3) Reliably Define the Testing Needed – The data that has been collected and analysis that has been done ensures that: existing knowledge is not recreated, the remaining work is properly focused, and all involved parties understand the challenges, methods, and progress.

(4) Coordinate, Oversee, and Effectively Communicate – This approach ensures that the overarching technical concepts are effectively framed and communicated, and it eases report preparation. The results are well supported, clear, and compelling even to people not knowledgeable of science and engineering.