

## Share the Road

By Craig DeAlmeida

*Grandpa, you said you were an actuary...what happened to them?*

*When they insisted, "this is my lane," they found they had no lane.*

Last year, after yet another horrific mass shooting in the United States and reaction to it from the healthcare community, the National Rifle Association admonished "self-important anti-gun" doctors to "stay in your lane." Doctors responded strongly, establishing the meme of "this is my lane" to lobby against restrictions on gun-related medical research in my country and document the extreme impact guns have on daily practice in their profession.

When I wear my Society of Actuaries shirt and consequently need to explain what I do to curious acquaintances, I often state that we actuaries are like the doctors of a hospital, but we serve insurance and other risk-enabled firms. Doctors are not necessarily the top executives running hospitals, and there are far more other staff with specific roles to fill than there are doctors. But the doctors, after extensive specialized training, possess and deliver on the unique knowledge and skill that is critical for a hospital to exist. By analogy, the unique knowledge and skill we actuaries possess is to put a dollar sign on insurable risk, and risk-enabled firms exist to help individuals, businesses, and society as a whole manage insurable risk. But I am now questioning this depiction of our profession.

At the smallest insurance companies, the actuary has a role in almost every business decision being made, but insurance companies rarely remain small—they grow, get bought, or (with astonishing rarity) fail. As insurance firms grow, the over-extended actuary is given "relief" as other employees take over increasingly granular business functions. Investments gets its own department and dedicated staff, and so does Accounting, Marketing, Product, Underwriting, Corporate Finance, and so on. While actuaries may initially have participated in their decisions, as each department grows, it builds its own culture, its own way of working and making decisions, and eventually the actuaries are asked to "stay in your lane."

Go and determine premiums, rates, and benefits. Calculate reserves and capital. Measure actual-to-expected ratios and adjust actuarial assumptions. This is what the actuary's perceived roles can be diminished to. They are all variations on the actuary as "master calculator", and this view of the actuary has recently opened up the profession to new disruptors, eager to prove that they can perform actuarial calculations faster, cheaper, and more accurately than the actuaries can.

Technology and software development companies look at our laborious data gathering and reserve calculations and say to themselves, "this is my lane." They bring automated, cloud-supported software that can replicate in hours what now takes days, or in minutes what now takes hours. They can relieve the actuary of tedious manual processes to inspect and move data. They can develop worker robots to make the same checks; they can deliver results for approval with additional time to review. And the digitization of the process can produce considerable cost savings—the actuaries can focus on higher-order problems and leave programming and database management to the tech companies. Why should the actuary say no to this?

Data scientists look at our experience studies, and how actuaries labor over millions of seriatim records to produce too simple models of incidence, severity, and overall behavior, and they say to themselves, “this is my lane.” They bring data wrangling techniques to automatically clean up messy insurance data, removing missing data and adjusting for outliers. They can use every tool in the Swiss army knife of predictive analytics—GLMs, mixed effect models, random forests, gradient boosted machines, etc.—and then they reveal that they have a bigger set of tools in their other pocket—neural networks, natural language processing, and so on. Upon backtesting, their appropriately validated models flatten out historical actual-to-expected ratios and convince management of their superior predictive power, and they too can produce cost savings—the actuaries can focus on higher-order problems and leave such prediction-making to the data scientists. Why should the actuary say no to this?

The actuary should not say no to these, but the actuary should not say yes and simply yield to these disruptors. While these disruptors have legitimate prowess in what they seek to do, what they and those that hire them may not appreciate until it is too late is the vital knowledge and skill the actuary uniquely brings. And here, my analogy with doctors and other deeply studied professions breaks down. For doctors are distinguished by the depth of their study, knowing more about the human body, the diseases that affect it, and how to treat those maladies than anyone else in that hospital, and individual doctors in a hospital setting further distinguish themselves by the depth of that knowledge in various specialties and subspecialties.

Generally speaking, actuaries do not distinguish themselves by the depth of their knowledge, and few parts of our knowledge go beyond what someone else in the insurance company knows. The Investment department knows financial markets better, the Product department knows what distributors can sell...the software developers know information architecture better, the data scientists know the techniques of predictive models better. Indeed, even when we consider our core actuarial knowledge, valuation methodologies and cash flow projection models, others can make a claim to understand these just as well with modest study. These are important concepts, but they are not terribly deep ones.

Instead, actuaries, perhaps more so than any other profession, distinguish ourselves by the breadth of our knowledge. Through our formal education and experiential learning, actuaries can gain sufficient and practical knowledge in how virtually every department of an insurance firm operates and interconnects. It is this networked knowledge that allows us to recognize opportunities and threats no one else can see. Individual actuaries further distinguish themselves not by the depth of their knowledge but by the breadth of that networked knowledge and by how many others trust and respect that actuary’s opinion and advice.

We actuaries should not claim a lane for ourselves—that lane is disappearing, even while we are driving on it. The actuary that tries to defend our calculations as being our rightful, inherited path will soon find it narrowing and have little left to defend. But while disruptors may have a stronger claim on a particular road and can rightfully take it, it is the actuaries who can see the whole map and suggest which roads should be taken, which should be merged, and which should be avoided altogether.

No one knows the map, the geography of risk-enabled institutions, like the actuaries. Our technical training and continuing education are deep enough to navigate most of the local neighborhoods and converse easily with residents there. But the breadth of our experience and enterprise-minded approach to problem solving also gives us a bird’s-eye view, seeing the broad patterns and complex interactions that are not easily visible at ground level.

When the actuary sees disruptors like software companies and data scientists coming up the road from previously unseen places, the actuary should welcome them and learn more about where they have come from and where they want to go. We can make room for the newly arrived, helping to connect their specific technical abilities to those of their new neighbors. But these new residents should understand the unique role we actuaries perform. They should seek our advice and guidance when making their own recommendations, as much as they would want us to do likewise, so that we can always see and predict where the risk-enabled firm is going as a whole.

As a profession, actuaries will remain most relevant if we become the chief mapmakers and head navigators for the full geography of risk-taking. We can update our knowledge and understanding by traveling with others down their particular roads, but we are valued because our companions trust us to broaden their knowledge and understanding, helping them safely reach their goal. When accidents occur, we are entrusted to handle them, recognize their true origins, not just their effects, and guide others to solutions that can mitigate future such accidents.

And when the geography of risk-taking is permanently altered by environmental changes, actuaries can leverage the trust and respect we have earned and the maps we have built to safely guide our whole business, industry, and society to a collectively better place. Our greatest asset as a profession is not our skill as master calculators; it is the trust others have in our holistic set of skills and, more importantly, in our judgment when applying these skills to solve problems. Trust is only earned by working with others, not treating them as disruptors but as neighbors and enablers.

If we actuaries say, "this is my lane," we erode trust and our ability to help others. If we say, "share the road," we build professional trust, our greatest asset, and can guide others through the complex geography of risk-taking.